Initial Study/
Mitigated Negative Declaration

for

Bending the River Back into the City Project

City of Los Angeles

Bureau of Engineering
Environmental Management Group

January, 2014

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Acronyms and Abbreviations

AQMP	Air Quality Management Plan
ARB	California Air Resources Board
BAT/BCT	Best Available Technology/Best/Best Conventional Pollutant Control Technology
BAU	business-as-usual
BMPs	best management practices
CAA	Clean Air Act
CAPCOA	California Air Pollution Control Officers Association
CCAA	California Clean Air Act
CDFW	California Department of Fish and Wildlife
CDS	centrifugal downhole separator
CEQA	California Environmental Quality Act
City	City of Los Angeles
City Council or Council	Los Angeles City Council
CMP	Congestion Management Program
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CO_2e	carbon dioxide equivalent
CRPR	California Rare Plant Rank
CUP	Conditional Use Permit
CWA	Clean Water Act
dBA	A-weighted decibels
EDR	Environmental Data Resources
EIR	environmental impact report
EMG	Environmental Management Group
EPA	U.S. Environmental Protection Agency
FAR	floor area ration
FEMA	Federal Emergency Management Agency
FTA	Federal Transit Administration
GHG	greenhouse gas
HCM	Historic-Cultural Monument
HEC-RAS	Hydrologic Engineering Center-River Analysis System
LADWP	Los Angeles Department of Water Power
LASHPMDP	Los Angeles State Historic Park Master Development Plan
L_{max}	maximum sound level
LST	Localized Significance Threshold
MMT	million metric tons
MT	metric ton
MTBM	microtunnel boring machine
NAHC	Native American Heritage Commission
NPDES	National Pollutant Discharge Elimination System

O_3	ozone
OCS	overhead contact system
OHWM	Ordinary High Water Mark
Pb	lead
PM10	particulate matter smaller than 10 micrometers in diameter
PM2.5	particulate matter smaller than 2.5 micrometers in diameter
proposed project	Bending the River into the City Project
PVC	polyvinyl chloride
RCPG	Regional Comprehensive Plan and Guide
ROC	reactive organic compound
RTP	Regional Transportation Plan
RWQC	Regional Water Quality Control Board
SCAQMD	South Coast Air Quality Management District
SFP	State Fully Protected
SSC	California Species of Special Concern
State Park	Los Angeles State Historic Park
SWPPP	Stormwater Pollution Prevention Plan
TAC	toxic air containment
TBM	tunnel-boring machine
USACE	U.S. Army Corps of Engineers
USGS	U.S. Geological Survey
ZIMAS	Zoning Information and Map Access System

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CITY OF LOS ANGELES
CALIFORNIA ENVIRONMENTAL QUALITY ACT

INITIAL STUDY

(Article I – City CEQA Guidelines)

Council District: 1 Date: October 11, 2013

Lead City Agency: Bureau of Engineering - Central District

Project Title: Bending the River Back into the City Project

I. INTRODUCTION

A. Purpose of an Initial Study

The California Environmental Quality Act (CEQA) was enacted in 1970 for the purpose of providing decision-makers and the public with information regarding environmental effects of proposed projects, identifying means of avoiding environmental damage, and disclosing to the public the reasons behind a project's approval, even if it leads to environmental damage. The Bureau of Engineering Environmental Management Group (EMG) has determined that the proposed project is subject to CEQA, and no exemptions apply. Therefore, the preparation of an initial study is required.

An initial study is a preliminary analysis conducted by the lead agency, in consultation with other agencies (responsible or trustee agencies, as applicable), to determine whether there is substantial evidence that a project may have a significant effect on the environment. If the initial study concludes that the project, with mitigation, may have a significant effect on the environment, an environmental impact report should be prepared; otherwise the lead agency may adopt a negative declaration or mitigated negative declaration.

This initial study has been prepared in accordance with CEQA (Public Resources Code Section 21000 et seq.), the State CEQA Guidelines (Title 14, California Code of Regulations, Section 15000 et seq.), and the City of Los Angeles CEQA Guidelines (1981, amended July 31, 2002).

B. Document Format

This initial study is organized into eight sections, as follows:

Section I, Introduction, provides an overview of the project and the CEQA environmental documentation process.
Section II, Project Description, provides a description of the project location,

project background, and project components.

Section III, Existing Environment, provides a description of the existing environmental setting, with a focus on features of the environment that could affect the proposed project or be affected by the proposed project.

Section IV, Potential Environmental Effects, provides a detailed discussion of the environmental factors that could be affected by this project, as indicated by the screening checklist in Appendix A.

Section V, Mitigation Measures, provides the mitigation measures that would be implemented to ensure that potential adverse impacts of the proposed project would be reduced to a less-than-significant level.

Section VI, Preparation and Consultation, provides a list of key personnel involved in the preparation of this report and key personnel consulted.

Section VII, Determination – Recommended Environmental Documentation, provides the recommended environmental documentation for the proposed project.

Section VIII, References, provides a list of reference materials used during the preparation of this report.

C. CEQA Process

Once the adoption of a negative declaration (or mitigated negative declaration) has been proposed, a public comment period opens for no less than 20 days, or 30 days if there is state agency involvement. The purpose of this comment period is to provide public agencies and the general public an opportunity to review the initial study and comment on the adequacy of the analysis and the findings of the lead agency regarding potential environmental impacts of the proposed project. If a reviewer believes the project may have a significant effect on the environment, the reviewer should (1) identify the specific effect, (2) explain why it is believed the effect would occur, and (3) explain why it is believed the effect would be significant. Facts or expert opinion supported by facts should be provided as the basis of such comments.

After the close of the public review period, the Board of Public Works considers the negative declaration or mitigated negative declaration, together with any comments received during the public review process, and makes a recommendation to the Los Angeles City Council (City Council or Council) regarding whether to approve the project. One or more Council committees may then review the proposal and documents and make their own recommendation to the full City Council. The City Council, as the decision-making body, also considers the negative declaration or mitigated negative declaration, together

with any comments received during the public review process, when making the final decision to approve or disapprove the project.

During the project approval process, persons and/or agencies may address either the Board of Public Works or the City Council regarding the project. Public notification of agenda items for the Board of Public Works, Council committees, and City Council is posted 72 hours prior to the public meeting. The Council agenda can be obtained by visiting the Council and Public Services Division of the Office of the City Clerk at City Hall, 200 North Spring Street, Suite 395; by calling 213/978-1047, 213/978-1048, or TDD/TTY 213/978-1055; or by going online at http://www.lacity.org/CLK/index.htm.

If the project is approved, the City of Los Angeles (City) will file a Notice of Determination with the County Clerk within 5 days. The Notice of Determination will be posted by the County Clerk within 24 hours of receipt. This begins a 30-day statute of limitations on legal challenges to approval under CEQA. The ability to challenge the approval in court may be limited to those persons who objected to approval of the project and to issues that were presented to the lead agency by any person, either orally or in writing, during the public comment period.

As a covered entity under Title II of the Americans with Disabilities Act, the City does not discriminate on the basis of disability and, upon request, will provide reasonable accommodation to ensure equal access to its programs, services, and activities.

II. PROJECT DESCRIPTION

A. Location

The Bending the River Back into the City Project (proposed project) would be located at 1796 N. Baker Street, Los Angeles. The property, which is currently owned by the Los Angeles County Metropolitan Transportation Authority (Metro), is located approximately 0.4 mile west of the Golden State Freeway and approximately 0.8 mile east of Dodger Stadium. The project area is approximately 2 miles north of downtown Los Angeles. Figure 1 shows the regional location of the proposed project. The project site is mapped within an unsectioned portion (Township 1 South, Range 13 West) of the U.S. Geological Survey (USGS) 7.5-minute Los Angeles topographic quadrangle map (Figure 2).

B. Purpose

The purpose of the proposed project is to support water conservation by providing a source of irrigation water for the Los Angeles State Historic Park (State Park) and other non-potable water demands. The proposed project will also create an aesthetic focal point for the surrounding neighborhood.

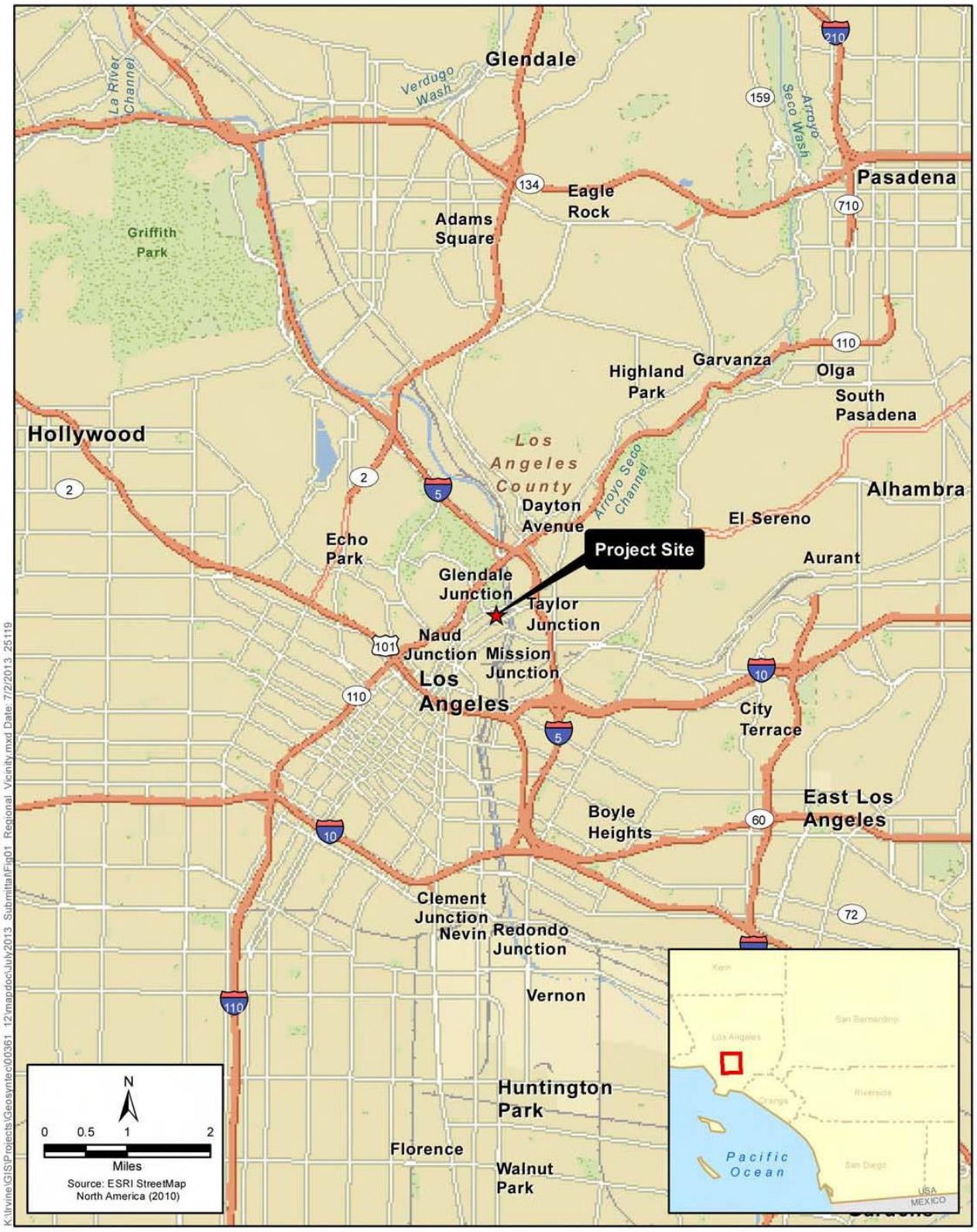


Figure 1
Regional Vicinity Map
Bending the River Back into the City Project

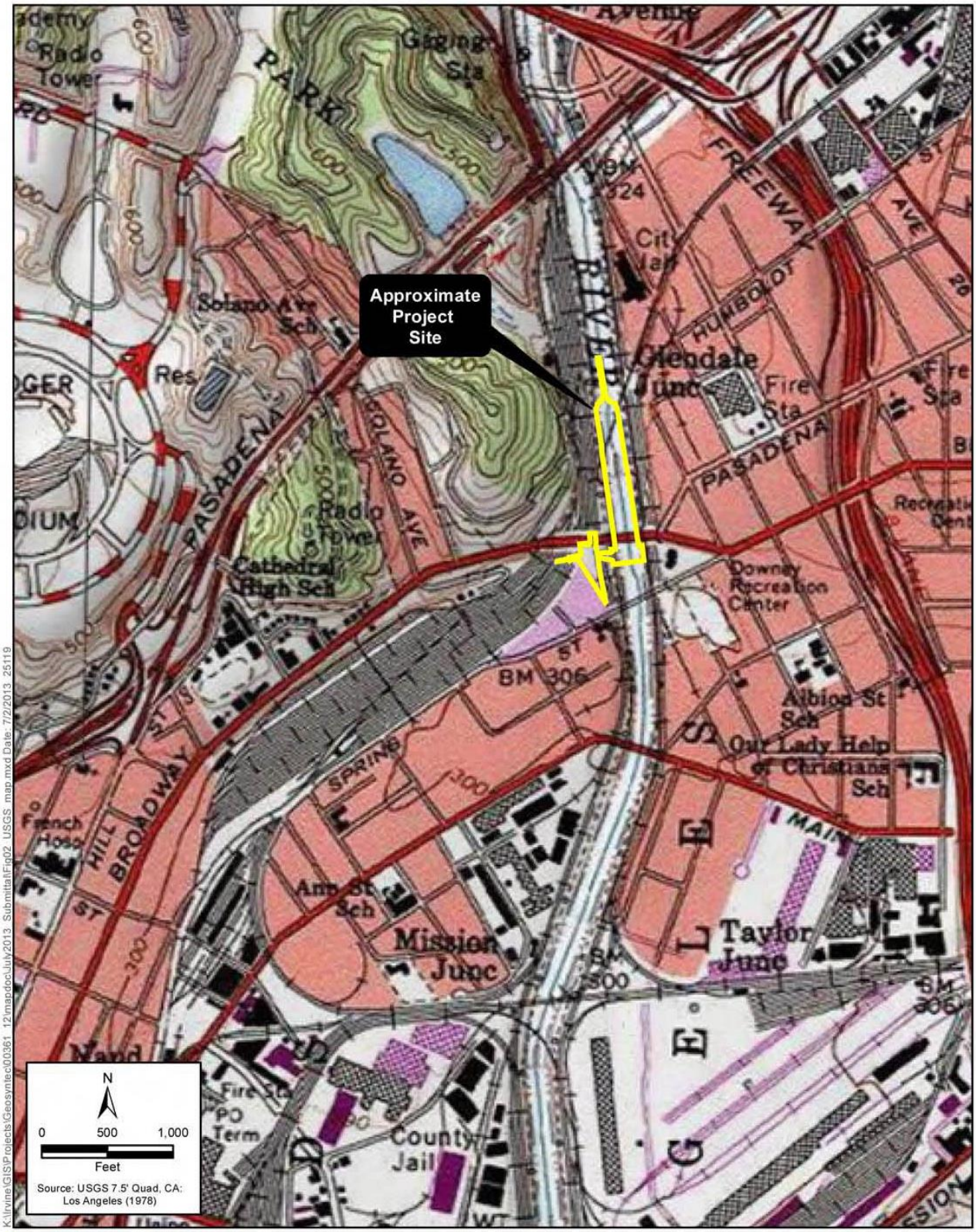


Figure 2
USGS 7.5-minute Quadrangle Map
Bending the River Back into the City Project

The proposed project aims to:

- Physically divert water from the Los Angeles River (LA River) and create an aesthetic/educational statement, showing that the LA River can be used as a source of water;
- Create a water wheel, which would be loosely modeled after the historic wheel that existed near the project location;
- Enhance connections between the surrounding community, and the LA River; and
- Provide a viable long-term non-potable irrigation water source for the State Park and other nearby local demands.

C. Description

The proposed project would involve construction and operation of a water wheel and may include the following elements:

- Excavation of a 1,300-cubic-yard pit and maintenance area for installation of the water wheel;
- Construction of side channel tunnels to the LA River, connecting the LA River to the water wheel pit; and
- Installation of an inflatable dam within the LA River channel, creating a water impoundment area upstream of the proposed inflatable dam.

For the purposes of this report, the term “project site” refers to the proposed 6.29-acre area encompassing the proposed construction limits and the maximum impoundment area upstream of the proposed dam (see Figure 3).

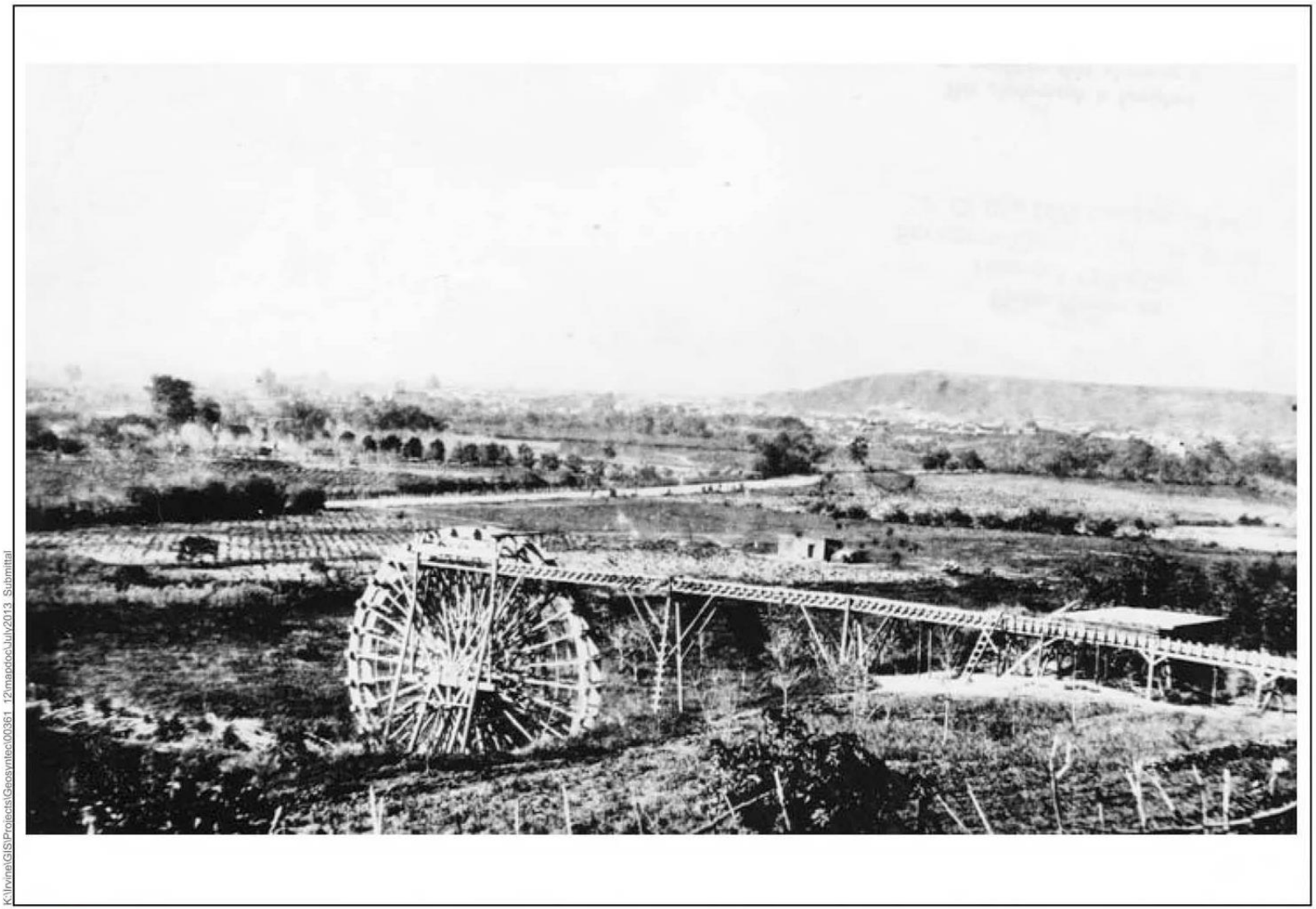
Project Background

The project applicant, Metabolic Studio, desires to create a project that reintegrates the City with its historic source of water. Under the proposed project, funded by the applicant, a water wheel, described in more detail below, with both recreational and utilitarian functions would be installed near the site of the Zanja Madre (Mother Ditch), the original aqueduct that brought water to the Pueblo de Los Angeles from the LA River. In the 1850s, the City constructed a system that increased the water supply to the Zanja Madre. This included a water wheel that raised a portion of LA River water to a height that permitted gravity flow to homes, fields, and storage sites. As part of this system, a brick reservoir was built in the center of the plaza. One original water wheel was adjacent to the LA River, at the approximate location of the proposed project. Modern water conveyance systems, including the Los Angeles Aqueduct, eventually replaced the Zanja Madre as the principal water supply to the City (Reference: 57) (see Figure 4).



Figure 3
Site Plan
Bending the River Back into the City Project

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Figure 4
1868 Photo of Water Wheel Located near North Broadway at the Base of Solano Canyon
Bending the River Back into the City Project

The proposed project would provide a link between the site of the historic water wheel that operated in the mid-19th century and historic water uses of the LA River in the vicinity. The area adjacent to the project site includes a number of warehouse spaces, which would be enhanced by the presence of the water wheel. The project would also provide recreational, historical, and environmental educational opportunities that would enhance the experience of visitors to the adjacent State Park. Environmental benefits would include increased water use efficiency and water conservation and improved water quality. Economically, the local area stands to reduce irrigation water purchase costs by more than $100,000 annually, which is assumed to increase at a rate of more than 2.5% per year, for a 30-year savings of more than $4.5 million.

Project Elements

The proposed project would divert water from the LA River, lift the water by use of the water wheel, treat the water through filtration and UV disinfection, and then distribute the water for use. The diversion would require an approximately 6-foot-high inflatable dam to be installed in the LA River. The dam would be controlled by a computerized system. For operating the dam, it is anticipated that dual air blowers would be required to inflate/deflate the dam. Pooled water would extend approximately 1,220 feet upstream, creating a surface impoundment of approximately 16 acre-feet. The dam (and associated ponded water) would extend across the entire width of the LA River channel. During rain events, the dam would automatically be lowered, allowing stormwater flows to pass unimpeded. During low-flow conditions, the dam would be raised and pool water to a depth of 6 feet. When the dam is raised, pooled water would be diverted through a side channel that would be bored into the west bank of the river, immediately upstream of the dam. The side channel would direct LA River water to the water wheel, which would be entirely powered by the force of the diverted LA River flows. A small portion of these flows, approximately 80 gallons per minute, would be raised from the inlet tunnel in buckets that would be attached to the wheel. These buckets would lift the water approximately 60 feet and empty it into a collection trough. The collection trough would convey the water under gravity to storage tanks, which would connect to a distribution and treatment system. When demand for irrigation water exists, water would be directed through a 6-inch-diameter pipe, making it available for irrigation. When irrigation water is not required, the water would be diverted back to the LA River. After impacting the blades, more than 99% of the water would be directed into a return-side channel pipe and flow back into the LA River downstream of the dam. Flows from the pipe would re-enter the channel less than 100 feet downstream from the diversion point.

Construction details of the proposed project are provided below.

Construction

Excavation/Earthwork
Following pavement demolition, a 10- by 80-foot pit (approximate finished dimensions) with a curved cut-out area for wheel maintenance would be excavated to accommodate the water wheel. Excavation would extend to a depth of approximately 40 feet at approximately 8-foot intervals. Steel H-beams would be used to shore the perimeter of the pit. Reinforcement of the pit walls would require bracing and timber lagging. A concrete reinforced slab would provide a stable, flat surface for the bottom of the pit, so that subsequent tunnel work could be performed. As part of the pavement demolition and excavation process, up to 10,000 square feet of surface asphalt at the water wheel site and in the LA River and 5,500 cubic yards of soil would be removed. The pavement demolition and excavation phases of the proposed project are expected to generate the most construction traffic and require the most equipment.

Side Channel Tunnel Construction; Inflatable Dam Foundation
Once excavation of the pit is complete, the side channel, which would connect the pit to the west bank of the LA River, would be constructed using a microtunnel boring machine (MTBM). The side channel would be approximately 400 feet long. Construction of the side channel would require concrete along the river channel wall to be removed to a height of 10 feet as well as shallow excavation (3 to 6 feet) to accommodate receiving pits for the MTBM. The side channel would be constructed from a reinforced concrete pipe with a maximum diameter of 48 inches.

For installation of the dam, a small crane would be required to lift the rubber dam from the delivery truck to its final position in the channel. The rubber dam would be unrolled from one abutment to the other. A backhoe or excavator could be used to facilitate unrolling.

Water Wheel Structure
The water wheel's foundation and the concrete pads for other elements of the proposed project would be constructed in accordance with the building code and design recommendations in the geotechnical plans. Foundations may include caissons or other foundation structures.

Once the foundations are in place, water wheel installation would commence. The wheel would be fabricated off-site and assembled on-site in the wheel housing pit. Small concrete structures would be poured on opposite sides of the pit to hold the main wheel axle. The water wheel would be a maximum of 70 feet in diameter, with the hub at the level of the existing grade so that half of the wheel would be below the ground surface and the other half would be above (see Figure 5, which provides artistic renderings of the proposed water wheel).

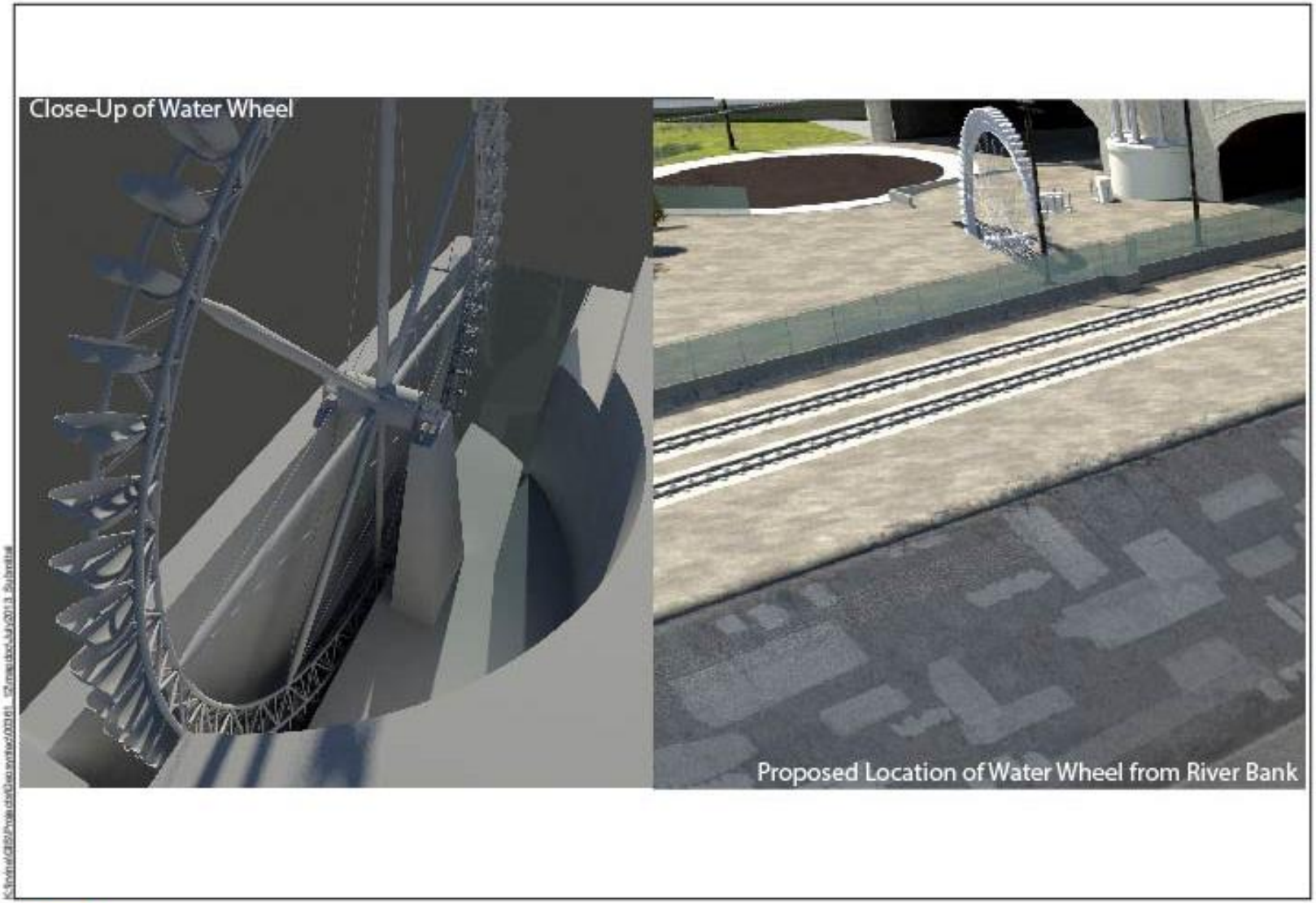


Figure 5
Preliminary Design Concept of Water Wheel
Bending the River Back into the City Project

LA River Water Treatment Process

As described above, water would be lifted by the wheel, empty into a collection trough, and then flow by gravity to an underground cistern adjacent to the wheel. As water enters the cistern, it would flow through a concrete vault with a continuous deflective separator (CDS) that would remove trash and particles as small as 100 microns. This vault would be entirely underground.

Water treated through the CDS unit would be stored in the cistern until there is a demand for irrigation water at the State Park. When an irrigation valve opens at the park, a pump would sense a reduction in pressure in the non-potable water supply line and turn on. Water from the cistern would flow through a 25-horsepower variable-speed transfer pump to a disc filter, a flow-through device that filters down to 120 mesh (150 microns), the appropriate standard for drip or spray irrigation. From the filter, water would flow through an ultraviolet light disinfection system and continue on to a pressure tank.

The filter's backwash cycle would be controlled by a 12-volt system that would be set to backwash when the filter inlet/discharge pressure differential reaches 7 pounds per square inch. This would produce approximately 70 gallons per minute of backwash water, which would be conveyed via underground pipe back to the inlet for the CDS unit. Alternatively, if a sanitary sewer permit is obtained, the filter may discharge the backwash water to the sewer.

The industrial-grade ultraviolet light disinfection system would consist of an approximately 8-foot-long (horizontal), 6-inch-diameter stainless steel cylinder fitted with 12 high-output germicidal ultraviolet lamps. The unit, which would be powered by a 120-volt current, would have a 99.9% bacterial kill rate at up to 300 gallons per minute. The lamps would be automatically wiped (cleaned) with use of a pneumatically actuated wiper system.

Disinfected water would flow to an 86-gallon steel pressure tank for storage and for maintaining consistent system pressures. This small pressure tank, measuring 48 inches tall and 26 inches in diameter, would provide instantaneous pressure upon demand and allow the pump to start slowly, thereby reducing wear on the pump's motor. From the pressure tank, water would be conveyed to the State Park through an underground 6-inch-diameter polyvinyl chloride (PVC) irrigation supply pipe.

The treatment equipment could be arranged on a small concrete apron (minimum dimensions: 12 by 16 feet). The equipment would be covered by a shade structure or, preferably, a small utility shed or building.

Landscaping

Construction activities associated with this phase of work include the placement of landscaping materials in accordance with design specifications. The project would comply with Ordinance No. 170,978 (Water Management), which imposes water conservation measures for landscape, installation, and maintenance activities (e.g., use drip irrigation and soak hoses in lieu of sprinklers to lower the amount of water lost to evaporation and overspray, set automatic sprinkler systems to irrigate during the early morning or evening hours to minimize water loss due to evaporation, and water less in the cooler months and during the rainy season).

Construction Schedule and Equipment

Construction activities are anticipated to begin in March 2014 and last approximately 9.5 months. Construction activities in the in the river would be limited to between April and October of 2014. The construction equipment used during the different phases would include a hydraulic crane, vibratory sheet pile driver, backhoe/loader, hoe-ram attachment, forklift, hydraulic excavator, muck disposal truck, welder, wheel loader, mini-backhoe, submersible pump, generator (10 kilowatt), concrete pump truck, concrete vibrator, and compressor (185 cubic feet per minute).

No utilities would need to be relocated as a result of construction activities. Access to the project site would be provided from Baker Street, which terminates at a cul-de-sac at the Metro property. During installation of the delivery pipe that would lead from the project site to the State Park, the end of Baker Street may be partially closed for up to 3 days. This process would involve cut-and-cover work to install a 6-inch-diameter PVC pipe. However, only one half of the road would be closed at a given time, thereby allowing continuous use of the road.

Regulatory Setting

The proposed project would require an application to the State Water Resources Control Board, Division of Water Rights, to allow water from the LA River to be appropriated by the project. The amount of water to be appropriated would be 106 acre-feet per year, which is the amount required to meet the estimated annual irrigation demand of the State Park and other nearby uses.

To gain approval, there must be a reasonable likelihood that unappropriated water will be available at the point of water diversion for the proposed project. The LA River is not considered a source of potable water, and any claims would be for non-potable uses only, such as irrigation. No active appropriation rights to use LA River water are currently taking water from the river in the vicinity of the water wheel project, and the amount of water required for the project is anticipated to be available.

The analysis in this document assumes that, unless otherwise stated, the project will be designed, constructed, and operated in accordance with all applicable laws, regulations, ordinances, and formally adopted City standards, including:

- Los Angeles Municipal Code (Reference 18)
- Bureau of Engineering Standard Plans (Reference 24)
- Standard Specifications for Public Works Construction (Reference 1)
- Work Area Traffic Control Handbook (Reference 2)
- Additions and Amendments to the Standard Specifications for Public Works Construction (Reference 23).

The following entitlements would be required from the City to approve the proposed project:

- It is not anticipated that land use entitlements would be required to approve the project.
- A minor subdivision approval is anticipated to allow transfer of the water wheel property site from the property owner to the applicant. No additional development of the site is proposed or anticipated. This will require approval from Metro.

The following regulatory permits would be required from federal and state agencies:

- Section 408 permit from the U.S. Army Corps of Engineers (USACE), under the Clean Water Act (CWA);
- CWA Section 404 Nationwide Permit;
- California Department of Fish and Wildlife (CDFW) Section 1602 Lake and Streambed Alteration Agreement Notification;
- Regional Water Quality Control Board (RWQCB) Section 401 Water Quality Certification Application; and
- Native American consultation.

III. EXISTING ENVIRONMENT

The project site is located within and immediately west of the LA River, between State Route 110 and U.S. 101. It is also adjacent to an Amtrak/Metrolink railroad right-of-way and immediately south of the North Broadway Bridge, which is a designated City Historic-Cultural Monument (No. 907). It is also within the Central City North Community Plan, Los Angeles River Revitalization Master Plan, and Cornfield/Arroyo Seco Specific Plan areas. The project site includes assessor's parcel numbers (APNs) 5409-001-900, 5409-001-901, 5414-016-903, and 5447-032-900.

The project site is zoned PF-1XL (designated Public Facilities) and OS-1XL (designated Open Space). Neighboring land uses include the State Park to the west; the LA River and open space to the east; light manufacturing, creative/warehouse, and commercial space to the southwest; and light industrial uses to the north. Metro's Gold Line maintenance facility is located adjacent to the north side of the project site. Elysian Park is also located to the north (500 feet away). This park is situated on a hill and contains a relatively dense cover of native and ornamental shrubs and trees.

Portions of the State Park located within the project area include land where native plants are being installed for the purposes of an interpretive walk; a disced field and areas with maintained turf grass are also present. The majority of the plants in the interpretive nature walk area of the State Park have been installed; however, some are still in containers. It appears that some nursery work or plant propagation is ongoing.

The LA River, which traverses north/south through the project area and is completely concrete lined, had a small flow (approximately 10 to 12 inches deep in the 20-foot-wide pilot channel) observed during a field visit to the site on June 22, 2012. A minimal amount of sediment deposition and vegetation are present within the river, and both sides are flanked by active railroads. The railroads and associated lands are surrounded by developed properties, but some areas contain bare ground and ruderal vegetation. Lands situated east of the river within the project area are predominately urban/developed properties, but some areas contain ornamental vegetation.

The nearest residence is located 900 feet northwest of the project site. Elevations within the project area range from approximately 280 feet above mean sea level (MSL) within the LA River to approximately 405 feet above MSL within Elysian Park. The average elevation within the State Park is approximately 306 feet above MSL.

IV. POTENTIAL ENVIRONMENTAL EFFECTS

The environmental factors checked below could be affected by this project, involving at least one impact that is a "potentially significant impact," as indicated by the checklist in Appendix A. A detailed discussion of these potential environmental effects follows.

☐ Aesthetics	☐ Agriculture and Forestry Resources	☐ Air Quality
☒ Biological Resources	☒ Cultural Resources	☒ Geology/Soils
☐ Greenhouse Gas Emissions	☐ Hazards and Hazardous Materials	☒ Hydrology/Water Quality
☐ Land Use/Planning	☐ Mineral Resources	☐ Noise
☐ Population/Housing	☐ Public Services	☐ Recreation
☐ Transportation/ Traffic	☐ Utilities/Service Systems	☒ Mandatory Findings of Significance

A. Aesthetics

Initial screening determined that the proposed project would cause a less-than-significant aesthetic impact (please refer to Appendix A). The proposed project would not have a substantial effect on a scenic vista because there are no officially recognized scenic vistas within the project viewshed. The North Broadway Bridge, as a visual and historic landmark, draws a small number of sightseers—a viewing group that is considered sensitive. Other sensitive viewing groups include nearby Elysian Park visitors (within 1,500 feet of the project site) at vantages with south- and southeast-facing views and a small number of residential viewers with south- and southeast-facing views residing at a particular multi-story building on Casanova Street (just north of North Broadway). All other viewing groups, including Metrorail passengers, North Broadway Bridge motorists and pedestrians, and nearby workers in the Gold Line shop and yard, as well as other public facilities workers within the project viewshed, are considered only low to moderately sensitive. Furthermore, the residents at the aforementioned Casanova Street location would have highly constrained views of the project and, thus, would be likely to have a lower level of concern about the project's visual effects. The project is not proposed in visual proximity to a state scenic highway and would not require removal of or damage to trees, rock outcroppings, or historic buildings. The proposed project would not substantially degrade existing visual character or quality within the project's visual setting. It would neither diminish features that substantially contribute to visual character within the viewshed nor call for the conversion of natural open space. In addition, it would not obstruct views of key visual resources. Project lighting features, both during construction and operation, would not create a source of substantial light. In addition, the water wheel would not be designed with materials or finishes that would produce glare from reflected sunlight.

B. Agriculture and Forestry Resources

Initial screening determined that the proposed project would cause no impact or a less-than-significant impact (please refer to Appendix A).

C. Air Quality

Air quality in the United States is governed by the federal Clean Air Act (CAA). In addition to being subject to requirements of the CAA, air quality in California is also governed by more stringent regulations under the California Clean Air Act (CCAA). At the federal level, the CAA is administered by the U.S. Environmental Protection Agency (EPA). In California, the CCAA is administered by the California Air Resources Board (ARB) at the state level and by air districts at regional and local levels.

The project lies within the Los Angeles County portion of the South Coast Air Basin (Basin), which is under the jurisdiction of the South Coast Air Quality Management District (SCAQMD). SCAQMD is required, pursuant to the CAA, to reduce emissions of criteria pollutants for which the Basin is designated as a nonattainment area (i.e., ozone [O_3], particulate matter smaller than 10 micrometers in diameter [PM10], particulate matter smaller than 2.5 micrometers in diameter [PM2.5], and lead [Pb]).[1]

The project would be subject to SCAQMD's Air Quality Management Plan (AQMP), which contains a comprehensive list of pollution control strategies directed at reducing emissions and achieving ambient air quality standards. These strategies were based, in part, on regional population, housing, and employment projections prepared by the Southern California Association of Governments (SCAG). The most recent AQMP is the 2012 AQMP. The Final 2012 AQMP was adopted by the SCAQMD Governing Board on December 7, 2012, and approved by ARB on January 25, 2013.

A project is consistent with the AQMP if it is consistent with the population, housing, and employment assumptions that were used in the development of the AQMP. The most recent AQMP adopted by SCAQMD incorporates SCAG's 2012–2035 Regional Transportation Plan (RTP) socioeconomic forecast projections of regional population and employment growth. The 2012–2035 RTP projects that the population of the region will grow as approximately 1.5 million new households move to the area between now and 2035. As the regional planning agency for Los Angeles, Orange, Ventura, Riverside, San Bernardino, and Imperial Counties, SCAG addresses regional issues related to transportation, the economy, community development, and the environment (Reference: 53).

As part of its air quality planning, SCAG has prepared the Regional Comprehensive Plan and Guide (RCPG), which includes Growth Management and Regional Mobility chapters. These chapters provide the basis for the land use and transportation components of the AQMP and are used in the preparation of the air quality forecasts and the consistency analysis included in the AQMP. Both the RCPG and AQMP are based, in part, on projections

[1] Only the Los Angeles County portion of the Basin is designated as a nonattainment area for Pb under the National Ambient Air Quality Standards (NAAQS). The Orange County, San Bernardino County, and Riverside County portions of the Basin are designated as attainment areas for Pb under the NAAQS.

originating with county and city general plans.[2]

The project would result in no changes in land use. Construction would be short term and result in emissions that would be below regional and localized SCAQMD thresholds (see Table 1 and Table 2, below). Following construction, the project would not result in population or employment growth. Periodic trips to maintain the dam and water wheel would be made by maintenance personnel. The proposed project would not permanently change the existing or planned transportation network or traffic patterns in the area but instead offer a source of irrigation and education at the existing State Park. Because the project would result in no changes in land use, population, or employment, the project would be consistent with existing general plan and growth projections, which are accounted for within SCAQMD attainment forecasts. Thus, project development would not conflict with any air quality management plan, and no impact would occur.

Reference: 48

Table 1 – Estimate of Regional Construction and Operational Emissions (pounds per day)

Emissions Estimate (pounds per day)						
Emission Source	**ROG**	**NO_X**	**CO**	**SO_2**	**PM10**	**PM2.5**
Construction						
Mobilization	1	12	8	< 1	1	1
Waterwheel Pit/Jacking Shaft	5	35	21	< 1	3	2
Intake Shaft	6	44	27	< 1	4	2
Outlet Shaft	6	46	29	< 1	3	2
MBTM Tunneling – Intake	4	31	13	< 1	2	1
Installation of Inflatable Dam	1	13	5	< 1	< 1	< 1
Wheel Foundation and Raceway	1	5	3	< 1	< 1	< 1
MBTM Tunneling – Outlet	4	31	13	< 1	2	1
Installation of Wheel	3	26	11	< 1	1	1
Landscape Installation	< 1	3	2	< 1	< 1	< 1
Maximum Regional Emissions	6	46	29	< 1	4	2
SCAQMD Regional Construction Thresholds	75	100	550	150	150	55
Exceed Threshold?	**No**	**No**	**No**	**No**	**No**	**No**
Operations						
Worker Trips	< 1	< 1	< 1	< 1	< 1	< 1
SCAQMD Regional Construction Thresholds	55	55	550	150	150	55
Exceed Threshold?	**No**	**No**	**No**	**No**	**No**	**No**

[2] SCAG serves as the federally designated MPO for the Southern California region.

Emissions Estimate (pounds per day)						
Emission Source	**ROG**	**NO_X**	**CO**	**SO_2**	**PM10**	**PM2.5**
* No construction phases are expected to overlap.						
Source: ICF International, 2013; CalEEMod output sheets provided in air quality and climate change appendix.						

Table 2 – Estimate of Localized Construction Emissions (pounds per day)

Emissions Estimate (pounds per day)						
Emission Source	**ROG**	**NO_X**	**CO**	**SO_2**	**PM10**	**PM2.5**
Construction						
Mobilization	< 1	2	2	< 1	0.2	0.2
Waterwheel Pit/Jacking Shaft	4	27	14	< 1	1.3	1.2
Intake Shaft	5	36	20	< 1	1.8	1.6
Outlet Shaft	5	36	20	< 1	1.6	1.6
MBTM Tunneling – Intake	3	31	12	< 1	1.5	1.2
Install Inflatable Dam	1	12	4	< 1	0.4	0.4
Wheel Foundation and Raceway	1	5	2	< 1	0.2	0.2
MBTM Tunneling – Outlet	3	31	12	< 1	1.3	1.2
Install Wheel	3	24	10	< 1	0.9	0.9
Landscape Install	< 1	< 1	< 1	< 1	< 1	< 1
Maximum Daily Emissions[a]	5	36	20	< 1	1.8	1.6
SCAQMD Localized Construction Thresholds[b]	**--**	**74**	**680**	**--**	**5**	**3**
Exceed Threshold?	**No**	**No**	**No**	**No**	**No**	**No**
[a] No construction phases would overlap.						
[b] Localized thresholds derived from SCAQMD LST tables are based on the project location (SRA 1, Central Los Angeles), the project area disturbed in any given day (1 acre), and the distance to the nearest sensitive receptor (25 meters).						
Source: ICF International, 2013; CalEEMod output sheets provided in air quality and climate change appendix.						

Construction of the proposed project would result in the short-term generation of criteria pollutant and toxic air containment (TAC) emissions. Mass daily combustion exhaust and fugitive dust (PM10 and PM2.5) emissions were estimated using SCAQMD's California Emissions Estimator Model (CalEEMod), version 2011.1.1 (South Coast Air Quality Management District 2011). Assumptions regarding construction phasing, equipment use, as well as excavation and demolition quantities were obtained from the project applicant. A complete list of the construction equipment by phase, construction phase duration assumptions, and changes to the modeling default values used in this analysis are included in the air quality and climate change appendix to this document (Appendix B).

Project construction is anticipated to begin in March 2014 and last approximately

9.5 months. The total magnitude, duration, and intensity of construction activity has a substantial effect on the quantity of construction emissions (and related pollutant concentrations) occurring at any one time. Based on information from the project applicant, an assumption was made that no phases of construction would overlap. Maximum daily emissions are thus based on the maximum daily emissions within a single phase. It was conservatively assumed that each piece of equipment would operate 8 hours per day.

The estimate of project emissions during construction is provided in Table 1. As shown in Table 1, construction-period emissions are not anticipated to exceed SCAQMD regional significance thresholds. As such, impacts would be less than significant, and no mitigation measures are required. It is important to note, however, that construction contractors are still required to follow all applicable SCAQMD rules and regulations, such as SCAQMD Rule 403 (Fugitive Dust), among other rules.

Following construction, operations would consist of periodic maintenance trips by workers as well as a minimal amount of electricity consumption to power the water treatment system. The estimate of project emissions during operations associated with worker trips is also provided in Table 1. As shown in Table 1, operations-period emissions are not anticipated to exceed SCAQMD regional significance thresholds. As such, impacts would be less than significant, and no mitigation measures are required.

The CalEEMod model output and worksheets are provided in the air quality and climate change appendix to this document.

Local Construction and Operational Impacts

The proposed project would contribute to localized air pollutant emissions during construction (short term) and project operations (long term). SCAQMD has divided the Basin into air monitoring areas and developed a set of mass emissions rate look-up tables that can be used to evaluate localized impacts that may result from project construction and operations. The project site is located in the Central Los Angeles Monitoring Area (Source Receptor Area [SRA] 1). The nearest receptor is the Downey Recreation Center, located approximately 82 feet east of the eastern-most portion of the project area (the eastern edge of the river channel). Assuming an 85-foot receptor distance provides for a conservative analysis because the majority of construction would take place between the inflatable dam, located in the center of the LA River channel, and the waterwheel itself, located near the end of Baker Street on the western edge of the project area. Therefore, receptors would most likely be located much farther than 25 meters from construction activities.

If the on-site emissions from proposed construction activities are below the Localized Significance Threshold (LST) emissions levels found in the LST mass

rate look-up tables for the project site's SRA, then project emissions would not have the potential to cause a significant localized air quality impact.

As discussed previously, mass daily emissions during construction were compiled using the CalEEMod emissions inventory model. However, only on-site construction emissions were considered for purposes of comparison with the LST mass rate look-up tables. Consistent with SCAQMD LST guidelines, off-site activity, including delivery/haul truck activity and employee trips, was not considered in the evaluation of localized impacts. With respect to operations-period emissions, no emissions are expected to occur on-site because "operations" include only periodic employee trips and electricity consumption, which would be generated off-site.

The estimate of project construction-period on-site mass emissions is presented in Table 2. As shown therein, construction and operations emissions would remain below SCAQMD LSTs for the project area. As such, impacts would be less than significant, and no mitigation measures are required.

Reference: 48

SCAQMD's approach for assessing cumulative impacts is based on the AQMP forecasts of attainment of ambient air quality standards and made in accordance with the requirements of the federal and state Clean Air Acts. As discussed earlier (see discussion above in 3[a]), the proposed project would be consistent with the AQMP, which is intended to bring the Basin into attainment status for all criteria pollutants.[3] In addition, the mass regional emissions calculated for the proposed project, presented earlier in Table 1, are less than all applicable SCAQMD daily significance thresholds. As such, cumulative impacts would be less than significant, and no mitigation measures are necessary.

As discussed above in 3(a), the proposed project is not anticipated to result in substantial pollutant concentrations. The greatest potential for TAC emissions would be related to diesel particulate emissions from heavy equipment during site grading. SCAQMD does not consider diesel-related cancer risks from construction equipment to be an issue because of the short-term nature of construction activities. Construction activities associated with the project would be sporadic, transitory, and short term in nature. The assessment of cancer risk is typically based on a 70-year exposure period. Construction is expected to take

[3] State CEQA Guidelines Section 15064(h)(3) states "A lead agency may determine that a project's incremental contribution to a cumulative effect is not cumulatively considerable if the project will comply with the requirements in a previously approved plan or mitigation program which provides specific requirements that will avoid or substantially lessen the cumulative problem (e.g., water quality control plan, air quality plan, integrated waste management plan) within the geographic area in which the project is located. Such plans or programs must be specified in law or adopted by the public agency with jurisdiction over the affected resources through a public review process to implement, interpret, or make specific the law enforced or administered by the public agency."

less than a year to complete. Because exposure to diesel exhaust would be well below the 70-year exposure period, construction of the project is not anticipated to result in an elevated cancer risk to exposed persons because of the short-term nature of construction. As such, project-related toxic emission impacts during construction would not be significant.

With respect to long-term project operations, no meaningful source of TAC emissions would occupy the project site because operations would be limited to periodic worker trips and electricity (which would be generated off-site) consumption. As such, there would be no potential for meaningful TAC emissions. Impacts would be less than significant, and no mitigation measures are required.

Reference: 48

Odors

According to SCAQMD's *CEQA Air Quality Handbook,* land uses associated with odor complaints typically include agricultural uses, wastewater treatment plants, food processing plants, chemical plants, composting areas, refineries, landfills, dairies, and fiberglass molding facilities. The proposed project does not include any uses identified by SCAQMD as being associated with odors and therefore would not produce objectionable odors.

Odors resulting from construction of the proposed project are not likely to affect a substantial number of people because construction activities usually do not emit offensive odors. Potential odor emitters during construction activities include asphalt paving and the use of architectural coatings and solvents. SCAQMD Rules 1108 and 1113 limit the amount of reactive organic compound (ROC) emissions from cutback asphalt and architectural coatings and solvents, respectively. Given mandatory compliance with SCAQMD rules, no construction activities or materials are proposed that would create a significant level of objectionable odors. As such, potential impacts during short-term construction would be less than significant. No mitigation measures are required.

Reference: 48

D. Biological Resources

The project is located within an urban area of the City of Los Angeles. The term “study area” refers to the project site plus an additional 500-foot buffer area surrounding the project site (66.44 acres). Within the study area, the LA River is completely concrete lined. During a biological survey visit conducted on June 18, 2012, the LA River contained a small flow (approximately 10 to 12 inches in depth) within a shallow low-flow channel. The LA River is a potential USACE and RWQCB jurisdictional water and a potential California Department of Fish and Wildlife (CDFW) jurisdictional feature. Minimal deposition or vegetation is

present within the river. One special-status species was determined to be present within the 500-foot buffer area: southern California black walnut (*Juglans californica*). This tree is a California Native Plant Society (CNPS) California Rare Plant Rank (CRPR) List 4.2 species, a species of local concern in the Los Angeles region, and a City of Los Angeles protected tree. The Interpretive Nature Walk Area within the State Park contains several individuals of planted western sycamore and coast live oak, which are also designated as City of Los Angeles protected trees. Because the project would not result in the removal of any trees or construction activities in close proximity to the trees, the project will not impact any City of Los Angeles protected trees.

As designed, the project will permanently impact 6.24 acres of land consisting of 3.77 acres of developed lands and 2.47 acres of the LA River area mapped as open water. Impacts to developed lands, including parts of the concrete river channel and water wheel site, do not affect any protected biological resources and impacts are not significant. As described in Appendix A, the LA River area impacted by the project is not a federally protected wetland. However, the USACE, RWQCB and CDFW have jurisdictional permitting authority over activities in open water and streambed within the LA River. After consultation with the permitting agencies, if the agencies determine that these activities would result in significant impacts to jurisdictional waters, then compensation for these impacts may be required and would be specified and approved prior to the issuance of a USACE 404 permit, RWQCB 401 permit and a CDFW 1602 streambed alteration agreement.

Of the 28 special-status wildlife species evaluated, six species were determined to have a moderate potential to occur within the study area: American peregrine falcon (*Falco peregrinus anatum,* Fully Protected), big free-tailed bat (*Nyctinomops macrotis*, Species of Special Concern [SSC]), pallid bat (*Antrozous pallidus*; SSC), pocketed free-tailed bat (*Nyctinomops femorosaccus*; SSC), western mastiff bat (*Eumops perotis californicus*; SSC), and western yellow bat (*Lasiurus xanthinus*; SSC). The study area also contains vegetation and structures that provide suitable nesting habitat for a variety of nesting birds including raptors and passerines. Mitigation measures BIO-1 and BIO-2 would offset potential indirect or direct impacts on special-status species or resources and ensure that the impacts on special-status biological resources would be less than significant pursuant to CEQA.

E. Cultural Resources

Initial screening determined that the proposed project would result in impacts that would be less than significant with implementation of mitigation measures (see Appendix A). Installation of the proposed water wheel, alteration of the LA River's concrete channel walls and river bottom, and installation of an inflatable dam would result in no direct impacts related to the significance of the North Broadway Bridge or the LA River as historical resources. No known

archaeological or other unique cultural resources are known to exist on the site. If any items of archaeological, paleontological, or cultural significance are discovered during construction, applicable laws, regulations, City standards, standard operating procedures, and mitigation measures CR-1, CR-2, and CR-3 would avoid any significant impacts.

F. Geology and Soils

Initial screening determined that the proposed project would result in a less-than-significant impact with respect to geology and soils with mitigation (see Appendix A). The project site is located in a seismically active region and within an area identified by the California Geological Survey as being potentially susceptible to soil liquefaction.

A geotechnical investigation report was prepared to develop geotechnical input for final design of the proposed project structures and to investigate the potential for soil liquefaction to impact these structures. Finding that there is the potential for isolated soil liquefaction in the design seismic event the geotechnical report assessed the potential consequences of this liquefaction including providing estimates of settlement. The report concluded that with appropriate design this hazard can be successfully mitigated. Therefore, risks associated with geology and soils would not be substantial with implementation of mitigation measure GEO-1, related to soil liquefaction and based on the April 2013 geotechnical report.

This potential liquefaction hazard can be mitigated effectively using common place foundation design features which will be incorporated in the design of the final structures. The process of selection of design features will be “performance-based” in that the project geotechnical engineer and structural engineer will work together to understand the response of the proposed construction to the design seismic event including the effects of liquefaction. Within this framework the performance (i.e. physical damage) of the proposed structures under the anticipated seismic loading including liquefaction will be evaluated. This evaluation will be an iterative process with additional liquefaction mitigation measures (e.g. pile foundations, stiffened structural elements) added as necessary to achieve the desired structural performance.
This process will take place in conformance with California Building Code seismic design standards. This process will take place in conformance with the 2010 California Building Code (or the currently applicable building code at the time of the design), including, but not limited to, Seismic Design Standards Sections 1604.10 (wind and seismic detailing), 1605.3 (load combinations), and 1613 (earthquake loads) and Chapter 18 (Soils and Foundations).

G. Greenhouse Gas Emissions

State CEQA Guidelines Section 15064.4 provides guidance to lead agencies for determining the significance of impacts from greenhouse gas (GHG) emissions,

and Section 15064.4(a) provides that a lead agency should make a good-faith effort, based to the extent possible on scientific and factual data, to describe, calculate, or estimate the amount of GHG emissions resulting from a project. State CEQA Guidelines Section 15064.4(b) also provides that, when assessing the significance of impacts from GHG emissions, a lead agency should consider (1) the extent to which the project may increase or reduce GHG emissions compared with existing conditions, (2) whether the project's GHG emissions exceed a threshold of significance that the lead agency determines applies to the project, and (3) the extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions.

There are currently no adopted quantitative thresholds relevant to the project. The State CEQA Guidelines do not provide numeric or qualitative thresholds of significance for evaluating GHG emissions. SCAQMD has adopted a 10,000-metric-ton (MT) significance threshold level for industrial facilities where SCAQMD is the lead agency. However, this 10,000 MT significance threshold level is not applicable to the proposed project because the project is not an industrial facility. Although SCAQMD considered a 3,000 MT significance threshold level for commercial/residential projects, no threshold has been adopted to date. Other quantitative thresholds adopted or recommended by other public agencies or recommended by experts throughout the state include the 900 MT threshold level contained within the California Air Pollution Control Officers Association's (CAPCOA's) *CEQA and Climate Change* report (Reference: 42). CAPCOA's 900 MT threshold level is the lowest quantitative threshold within the state. Thus, for purposes of this analysis, both direct and indirect GHG emissions from the project are discussed with respect to CAPCOA's 900 MT threshold level.

Note that GHG emissions and climate change are exclusively cumulative impacts; there are no non-cumulative GHG emissions impacts from a climate change perspective (Reference: 42). Therefore, in accordance with scientific consensus regarding the cumulative nature of GHGs, the analysis herein analyzes the cumulative contribution of project-related GHG emissions.

Project construction would generate GHG emissions through the use of on-site heavy-duty construction equipment. Off-site vehicle trips by construction workers as well as haul/delivery truck trips to and from the project site would also generate GHG emissions during project construction. Following construction, operations would require periodic maintenance trips by workers as well as a minimal amount of electricity consumption. An estimate of project GHG emissions during construction and operations is provided in Table 3 Consistent with CAPCOA and SCAQMD draft guidelines, construction emissions are summed and amortized over a 30-year project life and then added to operational emissions. As shown in Table 3, the proposed project's total and amortized GHG emissions during construction would be far below the 900 MT carbon dioxide equivalent (CO_2e) threshold. Consequently, the impact of construction- and

operations-related emissions from the project is considered less than significant.

No mitigation measures are necessary.

Table 3 – Estimate of Construction Greenhouse Gas Emissions (metric tons)

Emission Source	Total CO_2e Emissions (Metric Tons)
Construction	
Mobilization	34
Waterwheel Pit/Jacking Shaft	89
Intake Shaft	95
Outlet Shaft	141
MBTM Tunneling – Intake	10
Installation of Inflatable Dam	2
Wheel Foundation and Raceway	2
MBTM Tunneling – Outlet	32
Install Wheel	11
Landscape Install	2
Total Construction Emissions	418
30-year Amortized Total	*14*
Operations	
Total Operations	423
Total Operations plus Amortized Construction	437
CAPCOA Threshold	900
Exceed Threshold?	**No**
Note: Operational GHG emissions assumes 600,000 kilowatt hours of energy use annually. Source: ICF International, 2013; CalEEMod output sheets provided in air quality and climate change appendix.	

H. Hazards and Hazardous Materials

Initial screening determined that the proposed project would cause no impact or a less-than-significant impact (please refer to Appendix A). A search of available environmental records was conducted on June 19, 2012, by Environmental Data Resources (EDR) for 1745 North Spring Street, Los Angeles, California 90012. The project site was not listed in any of the databases searched by EDR. Furthermore, the project site is not listed in the State Water Resources Control Board's GeoTracker system, which includes leaking underground fuel tank sites, or as part of the Spills, Leaks, Investigations, and Cleanups Program; the Department of Toxic Substances Control's EnviroStor Data Management System, which includes Cortese sites; or the EPA's database of regulated facilities.

Reference: 35 (EDR).

I. Hydrology and Water Quality

Initial screening determined that the proposed project would result in a less-than-significant impact on hydrology and water quality with mitigation (please refer to Appendix A). The diversion site, being within the LA River, which was designed as a flood control channel, is by necessity within a Special Flood Hazard Area subject to a 1% annual chance of flooding. However, the water wheel site is located within the Federal Emergency Management Agency's (FEMA's) unshaded Zone X (Reference: 34), which is defined as an area outside the 0.2% annual chance floodplain (i.e., 500-year floodplain). All proposed designs would be approved by USACE through the Section 408 permit process. It is anticipated that the proposed project would qualify for a Minor 408 because it is not expected to alter the hydraulic capacity of the LA River permanently. As part of the permitting process,USACE's existing Hydrologic Engineering Center-River Analysis System (HEC-RAS) model, which is used by FEMA to determine flood hazard areas, would be used to evaluate the hydrologic impacts of the project. All structures or other channel alterations proposed as part of the project will be incorporated into the model by modifying or adding channel cross sections in the area of the project. The model will then be run using the 50-year design flow provided in the existing model, and resulting water surface elevations will be compared to existing conditions. Project designers will work closely with USACE staff to ensure the modeling methodology is rigorous and that the final design produces modeling results that demonstate that the project will not reduce the hydraulic functionality of the channel, thereby ensuring that they would not result in changes to the water surface elevation during flood conditions. Potential impacts related to impeding or redirecting floodflows would be less than significant.

Construction-period activities could generate stormwater runoff that could cause or contribute to a violation of water quality standards or waste discharge requirements, provide substantial additional sources of polluted runoff, or otherwise substantially degrade the receiving water quality. The discharge of contaminated groundwater collected through dewatering activities also has the potential to contribute to increased pollutant loads in receiving waters. However, the project would implement best management practices (BMPs) to comply with the standards outlined in the State Water Resources Control Board's National Pollutant Discharge Elimination System (NPDES) General Permits for Discharges of Stormwater Associated with Construction Activity (Order No. 2009-0009-DWQ) and Discharges of Groundwater from Construction Dewatering to Surface Waters (Order No. R4-2008-0032-WDR). Typical BMPs for construction dewatering include infiltration of clean groundwater, on-site treatment using suitable treatment technologies, transport off-site for sanitary sewer discharge with local sewer district approval, or use of a sedimentation bag for small volumes of localized dewatering. These BMPs, along with the construction BMPs outlined in mitigation measure HYD-1, would avoid or minimize potential

construction impacts on water quality. As such, impacts would be less than significant with mitigation.

Operation of the proposed project has the potential to introduce water contaminants from minor maintenance activities. All materials would be handled in accordance with applicable regulations to prevent significant hazards to the public or the environment. As such, operations of the proposed project would result in water quality impacts that would be less than significant.
All proposed designs would be approved by USACE through the Section 408 permit process. It is anticipated that this project will qualify for a Minor 408 because it is not expected to alter the hydraulic capacity of the river permanently.

J. Land Use and Planning

The project site is within the Central City North Community Plan area. The proposed project is consistent with the community plan's policies related to the preservation and enhancement of existing recreational facilities and park space. The proposed project would not physically separate an established community, nor would it conflict with any habitat conservation plan or natural community conservation plan. The land use designations of the project site are Public Facilities, with corresponding zoning of PF-1XL, and Open Space, with the corresponding zoning of OS-1XL. Such zoning allows public facility uses as well as joint public and private development uses in even the most restrictive adjoining zones, including the adjacent OS zone. This zone allows recreational facilities by right, including aesthetic enhancements. Certain public service uses in the PF zone are allowed by Conditional Use Permit (CUP) only, including appurtenant structures adjacent to covered and uncovered reservoirs, such as water treatment facilities, water pumping facilities, water distribution facilities, and water filtration plants. However, the utilitarian functions of the proposed project (i.e., to divert and convey water as well as provide water treatment for non-potable park use) are not proposed at the scale or intensity that would require approval by CUP.

The proposed project is also located within the Los Angeles River Revitalization Master Plan area and consistent with the plan's vision, including the proposed placement of inflatable rubber dams along the river for aesthetic and/or recreational purposes where prudent (Los Angeles River Revitalization Master Plan, p. 4-16). Further, the proposed project is consistent with the Cornfield/Arroyo Seco Specific Plan, which would allow the project by administrative approval. Therefore, impacts related to land use and planning would be less than significant.

K. Mineral Resources

Initial screening determined that the proposed project would result in no impacts on mineral resources of regional or statewide importance because the project site is located in an urbanized area with no such mineral resources available (please refer to Appendix A).

L. Noise

The proposed project would result in increased noise levels associated with excavating the site and building the structure, which could increase ambient noise levels at receivers in the immediate area surrounding the project. Construction of the proposed project would take approximately 9.5 months to complete.

Construction noise levels[4] would be as high as 80 A-weighted decibels (dBA), maximum sound level (L_{max}), at the closest building façade, which is located 100 feet from the project site. Noise levels of this magnitude would result in a temporary increase in ambient noise levels in the immediate area surrounding the project site. Construction noise at park areas on the east side of the LA River, across from the project site, would be overshadowed by existing traffic noise on North Broadway and North Spring Street.

The City's Municipal Code restricts construction to the hours between 7 a.m. and 9 p.m. The proposed project would most likely result in a temporary increase in ambient noise levels in the immediate area surrounding the project site. However, the Bureau of Engineering's Standard Project Specifications for Public Works Construction is designed to comply with the City's General Plan Noise Element and related Municipal Code Noise Ordinance. Given that the proposed project would be implemented in accordance with these regulations, construction-related noise impacts would be less than significant.

Construction activities associated with the project could generate groundborne vibration from both impact pile driving and the use of heavy equipment, including a tunnel-boring machine (TBM). Groundborne vibration could be intermittently perceptible at commercial structures adjacent to the project site. However, these effects would be temporary and short term and would cease once project work is complete. Groundborne vibration from construction would not exceed building damage thresholds and would not result in perceptible vibration at local residences. Impacts due to groundborne vibration would be less than significant.

A control building and the water wheel would be permanent features at the project site. Neither of these components would result in a substantial increase in ambient noise levels in the project vicinity.

[4] Federal Transit Administration (FTA) methods used for evaluating construction noise and a list of typical construction equipment.

M. Population and Housing

Initial screening determined that the proposed project would result in no impact with respect to population and housing (please refer to Appendix A). The proposed project would not directly increase the project area's population. However, an objective of the project is to encourage revitalization of the area through environmentally friendly artistic improvements. Therefore, the project could indirectly induce business development and population growth. The proposed project would involve construction and operation of a water wheel and appurtenant structures to divert water from the LA River. The project would not include the construction of homes or businesses. Therefore, the project would not induce population growth or displace any residents and would result in no impact with respect to population and housing.

N. Public Services

Initial screening determined that the proposed project would result in no impacts related to public services (please refer to Appendix A). The project would not involve housing a permanent residential population and, therefore, would not result in an increase in demand for emergency services, schools, parks, or other public services.

O. Recreation

Initial screening determined that the proposed project would result in no significant impact with respect to recreation (please refer to Appendix A). Minor impacts would occur to the State Park users during construction; however, these impacts would be temporary. Furthermore, it is anticipated that the State Park would be closed during the water wheel's construction period, thereby allowing construction of elements of its Master Plan. The purpose of the proposed project is to enhance pedestrian connections between the surrounding community, the State Park, and the LA River as well as provide a useful water source (non-potable irrigation) for the State Park. Furthermore, the project would not involve the construction of housing and, therefore, would not increase the usage of existing recreational facilities or require the construction of new recreational facilities.

P. Transportation/Traffic

During construction of the project, additional traffic would be generated as vehicles haul debris and soil or deliver materials to the site and as construction workers travel to and from the area. Given the relatively short duration of the construction period and small scale of the work, construction of the project would not result in a substantial increase in traffic that would significantly reduce the effectiveness of the transportation network in the vicinity of the project. During installation of the delivery pipe from the project site to the State Park, Baker Street may be partially closed for up to 3 days. Given the existing traffic flow and adjacent uses along this segment of Baker Street, the temporary lane closure is not expected to affect

traffic operations significantly. In addition, the applicant is committed to implementing construction traffic controls as required by the *Work Area Traffic Control Handbook* (Reference 2). Therefore, traffic impacts related to construction of the proposed project would be less than significant.

Because one of the project's purposes is to create an aesthetic focal point for the surrounding neighborhood, operation of the proposed project is expected to attract a small number of visitors, potentially from the neighborhood or the adjacent State Park. To estimate the number of vehicle trips that may be generated by the proposed project, the trip generation rate for land uses within a city park published by the Institute of Transportation Engineers (2008) was used. It is estimated that the proposed project could generate about six trips per day, assuming the project is similar to a city park with one picnic area. Parking for visitors would be provided on Baker Street, which, after consideration of existing demand, is expected to have an adequate parking supply. Given the existing traffic flow and adjacent uses along this segment of Baker Street, the small increase in traffic volumes would not reduce the overall effectiveness of the transportation network. Because the number of trips generated by the water wheel project would be below all of the thresholds identified by City Congestion Management Program (CMP) guidelines, a more in-depth analysis of traffic conditions is not required. Impacts associated with operation of the proposed project would be less than significant.

Q. Utilities and Service Systems

Initial screening determined that the proposed project would result in a less-than-significant impact with respect to utilities and service systems (please refer to Appendix A). The LA River is not a source of potable water, and enough water is available to meet the requirements of the project. The proposed project would not disrupt existing utilities and service systems or result in an increased demand for utilities, requiring the construction of new facilities or infrastructure.

R. Mandatory Findings of Significance

Based on the foregoing, it has been determined that:

The project does not have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory with the implementation of mitigation measures BIO-1, BIO-2, CR-1, CR-2, CR-3, GEO-1, and HYD-1.

The project does not have impacts that would be individually limited but cumulatively considerable. "Cumulatively considerable" means that the incremental effects of the project are considerable when viewed in connection with the effects of past projects,

the effects of other current projects, and the effects of probable future projects. The project does not have the potential to achieve short-term environmental goals to the disadvantage of long-term environmental goals.

The project does not have environmental effects that would cause substantial adverse effects on human beings, either directly or indirectly.

V. MITIGATION MEASURES

The following describes the mitigation measures that, if incorporated into the project, would reduce an effect to less than significant and briefly explains how each mitigation measure would reduce the effect to a less-than-significant level (mitigation measures from earlier analyses may be cross-referenced).

BIO-1: If construction occurs during the nesting period (February 15 through September 15, or as otherwise defined by the California Department of Fish and Wildlife), a pre-construction nesting bird survey must be performed by a qualified biologist. The survey shall be performed within seven days prior to any ground disturbing activities. If active nests are found, the following buffers are recommended to be used until a qualified biologist determines that nesting activities have ceased: 500 feet for raptors and any listed species, 100 feet for all other bird species unless otherwise authorized by CDFW. This will provide adequate protection to native nesting birds for the proposed project under MBTA and California Fish and Game Code. If there is no nesting within 100 feet of the limits of disturbance (500 feet for raptors), no further action is necessary. If project-related ground disturbance occurs outside of the nesting season, no nesting bird survey is necessary.

BIO-2: If work is expected to occur within 100 feet of trees or other structures with bat roost potential during the maternity season (April 15–August 15), a qualified bat biologist should conduct a one night emergence survey during acceptable weather conditions (no rain or high winds, night temperatures above 45˚F) or if conditions permit, physically examine the tree or structure for presence or absence of bats (such as with lift equipment) before the start of construction. If the roost is determined to be occupied during this time, the tree or structure shall be avoided until after the maternity season when young are self-sufficiently volant. If trees or structures with bat roost potential require removal during the winter months when bats are in torpor (October 31-–February 15, but is dependent on specific weather conditions), a qualified bat biologist shall physically examine the tree or structure (if conditions permit) for presence or absence of bats (such as with lift equipment) before the start of construction. If the tree or structure is determined to be occupied during this time, the tree or structure shall be avoided until after the winter season when bats are once again active.

CR-1: A qualified professional archaeologist shall monitor the initial phase of ground-disturbing activities of the project. If buried cultural resources—such as historic debris, building foundations, non-human bone, flaked or ground stone—are discovered during ground-disturbing activities, work shall stop in that area and within 50 feet of the find until a qualified archaeologist can assess the significance of the find and, if necessary, develop appropriate treatment measures. Treatment measures typically include development of avoidance strategies, capping with fill material, or mitigation of impacts through data recovery programs such as excavation or detailed documentation. If, during cultural resources monitoring, the qualified archaeologist determines that the sediments being excavated are previously disturbed or unlikely to contain significant cultural materials, the qualified archaeologist can specify that monitoring be reduced or eliminated.

CR-2: Project plans shall specify that a qualified paleontologist shall monitor initial ground disturbance at depths greater than 10 feet below ground surface. The qualified paleontologic monitor shall retain the option to reduce monitoring if, in his or her professional opinion, the sediments being monitored were previously disturbed. Monitoring may also be reduced if the potentially fossiliferous units, previously described, are not present or, if present, determined by qualified paleontologic personnel to have a low potential to contain fossil resources. The monitor shall be equipped to salvage fossils and samples of sediments as they are unearthed to avoid construction delays and empowered to temporarily halt or divert equipment to allow removal of abundant or large specimens. Recovered specimens shall be prepared to a point of identification and permanent preservation, including washing of sediments to recover small invertebrates and vertebrates. Specimens shall be curated into a professional, accredited museum repository with permanent retrievable storage. A report of findings, with an appended itemized inventory of specimens, shall be prepared and shall signify completion of the program to mitigate impacts on paleontological resources.

CR-3: Project plans shall specify that should human remains be uncovered during construction, construction shall halt in the area of discovery, the area shall be protected, and no further disturbance shall occur, as specified by State Health and Safety Code Section 7050.5. The county coroner shall determine the origin and disposition of the human remains pursuant to Public Resources Code 5097.98. If the coroner recognizes the remains to be Native American, he or she shall contact the California Native American Heritage Commission (NAHC) within 24 hours. For remains of Native American origin, no further excavation or disturbance shall take place until the most likely descendant of the deceased Native American(s) has made a recommendation to the landowner or the person responsible for the excavation work regarding means of treating or disposing of the human remains and any associated grave goods, with appropriate dignity, as provided in Public Resources Code Section 5097.9. In consultation with the most likely descendant, the project archaeologist and the project proponent shall

determine a course of action regarding preservation or excavation of Native American human remains, and this recommendation shall be implemented expeditiously. If the NAHC is unable to identify a most likely descendant or the descendant fails to make a recommendation within 48 hours after being notified by the commission, the project archaeologist and the project proponent shall determine a course of action regarding preservation or excavation of Native American human remains, which shall be submitted to the NAHC for review prior to implementation.

GEO-1: Potential liquefaction hazards shall be mitigated effectively using common place foundation design features which will be incorporated in the design of the final structures as discussed in the geotechnical investigation report. The retaining wall type and foundation system selected during design will control precisely which design features among many possible features will be selected.

The process of selection of design features will be “performance-based” in that the project geotechnical engineer and structural engineer will work together to understand the response of the proposed construction to the design seismic event including the effects of liquefaction. Within this framework the performance (i.e. physical damage) of the proposed structures under the anticipated seismic loading including liquefaction will be evaluated. This evaluation will be an iterative process with additional liquefaction mitigation measures (e.g. pile foundations, stiffened structural elements) added as necessary to achieve the desired results.

This process will take place in conformance to the with California Building Code seismic design standards.

HYD-1: Consistent with the requirements of the statewide Construction General Permit, the project applicant shall prepare and implement a Stormwater Pollution Prevention Plan (SWPPP) designed to reduce potential adverse impacts on surface water quality through the project construction period. The SWPPP shall be designed based on the assessed Project Risk Level to address the following objectives: (1) all pollutants and their sources, including sources of sediment associated with construction, construction site erosion, and all other activities associated with construction activity are controlled; (2) where not otherwise required to be under a RWQCB permit, all non-stormwater discharges are identified and eliminated, controlled, or treated; (3) site BMPs are effective and result in the reduction or elimination of pollutants in stormwater discharges and authorized non-stormwater discharges from construction activity to the Best Available Technology/Best/Best Conventional Pollutant Control Technology (BAT/BCT) standard; (4) calculations and design details as well as BMP controls for site run-on are complete and correct; and (5) stabilization BMPs installed to reduce or eliminate pollutants after construction are completed.

The SWPPP shall be prepared by a Qualified SWPPP Developer. The SWPPP shall include the minimum BMPs required in Attachment D for the assessed Project Risk Level. The Project Risk Level would be determined as part of the Notice of Intent for coverage under the Construction General Permit. These include: BMPs for erosion and sediment control, site management/ housekeeping/waste management, management of non-stormwater discharges, infiltration and runoff controls, and BMP inspection/maintenance/repair activities. The SWPPP shall include a construction site monitoring program that identifies requirements for dry weather visual observations of pollutants at all discharge locations and, as appropriate (depending on the Risk Level), sampling of the site effluent and receiving waters (receiving water monitoring is only required for some Risk Level 3 dischargers). A Qualified SWPPP Practitioner shall be responsible for implementing the BMPs at the site and performing all required monitoring and inspection/maintenance/repair activities. If the project is Risk Level 2 or 3, the project applicant shall also prepare a Rain Event Action Plan as part of the SWPPP.

The following are the types of BMPs that shall be implemented for the project:

- Erosion Control BMPs
- Sediment Control BMPs
- Wind Erosion Control BMPs
- Tracking Controls
- Non-Stormwater Controls
- Waste Management and Materials Pollution Control BMPs

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VII. DETERMINATION – RECOMMENDED ENVIRONMENTAL DOCUMENTATION

A. Summary

The proposed project would involve construction and operation of a water wheel, loosly modeled after the historic wheel that existed near the project location and would include excavation of a 1,300-cubic-yard pit and maintenance area for installation of the water wheel. It would also include construction of a side channel to the LA River, connecting the LA River to the water wheel pit and installation of an inflatable dam within the LA River channel, creating a water impoundment area upstream of the proposed inflatable dam. The purpose of the proposed project is to physically divert water from the LA River and create an aesthetic/educational statement, showing that the LA River can be used as a source of water. Additional purposes include enhancing connections between the surrounding community and the LA River; and providing a viable long-term non-potable irrigation water source for the State Park and other local demands. Initial screening determined a potential for significant environmental impacts under CEQA to the following:

- Archaeological and paleontological resources,
- Biological resources,
- Geological resources, and
- Hydrological resources.

However, with the implementation of mitigation measures specified above, the environmental impact would be considered less than significant.

B. Recommended Environmental Documentation

On the basis of this initial evaluation:

I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

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City Engineer

By: _____
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APPENDICES

Appendix A, Environmental Screening Checklist
Appendix B, Air Quality and Climate Change Output Sheets
Appendix C, Biological Resources and Habitat Assessment
Appendix D, Jurisdictional Delineation Report
Appendix E, Geotechnical Investigation Report
Appendix F, EDR Report
Appendix G, Hydrology and Water Quality Technical Memorandum
Appendix H, Native American Consultation
Appendix I, Comments and Responses
Appendix J, Mitigation Monitoring Program

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APPENDIX A

ENVIRONMENTAL SCREENING CHECKLIST

A brief explanation is provided for all answers except "no impact" answers that are adequately supported by the information sources cited following each question. A "no impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects such as the one in question (e.g., the project falls outside a fault rupture zone). A "no impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project would not expose sensitive receptors to pollutants, based on a project-specific screening analysis).

Issues	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant	No Impact
1. AESTHETICS – Would the project:				
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☒	☐
Standard: A significant impact may occur if the proposed project introduces incompatible visual elements within a field of view containing a scenic vista or substantially alters a view of a scenic vista. Reference: 18 (Thresholds A.1 and A.2)				
Explanation: The proposed project would not have a substantial effect on a scenic vista because there are no officially recognized scenic vistas within the project viewshed. However, the proposed project can be viewed from nearby informal vantage points, including Elysian Park and the adjoining North Broadway Bridge—an engineering structure that is the key visual resource in the project viewshed and a City Historic-Cultural Monument. The bridge's aesthetic significance derives from its impressive form, scale, and vivid Classical Revival decorative detailing. It also affords balcony-like pop-out viewing positions where pedestrians can step slightly beyond the bridge sidewalks for enhanced viewing opportunities. In addition to the bridge, informal viewing locations are also found within nearby Elysian Park, which is located northwest of the project site. Because of the park's hilly terrain, there are elevated vantage points within the park that afford 180-degree south-facing views that look out over the project site, a small part of a sweeping panorama. However, the focal points in such views are far-off features, such as the skylines in Boyle Heights (e.g., County/USC Medical Center building grouping) and downtown Los Angeles. The project site occurs in the foreground and mid-frame (as seen from the bridge and park, respectively). Such closer-in foreground and mid-frame views are dominated by utilitarian industrial and public facilities, asphalt-paved roadways, railroad tracks atop gravel-covered surfaces, train caternaries and overhead contact system (OCS) poles, chain link fencing, and the wide expanse of the LA River's concrete flood control channel. Thus, impacts related to scenic vistas would be less than significant. The North Broadway Bridge, as a visual and historic landmark, draws a small number of sightseers—a viewing group that is considered sensitive. Other sensitive viewing groups include nearby Elysian Park visitors (i.e., within 1,500 feet of the project) at vantage points with south- and southeast-facing views and a small number of residential viewers with south- and southeast-facing views residing at one particular multi-story building on Casanova Street (just north of North Broadway). All other viewing groups, including Metrorail passengers, North Broadway Bridge motorists and pedestrians, and nearby workers in the Gold Line shop and yard, as well as other public facilities workers within the project viewshed, are considered only low to moderately sensitive. Furthermore, residents at the aforementioned Casanova Street location would have highly constrained views of the project and, thus, would be likely to have a lower level of concern about the project's visual effects.				

Issues	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant	No Impact
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☒	☐
Standard: A significant impact may occur where scenic resources within a state scenic highway would be damaged or removed as a result of the proposed project. Reference: 18 (Thresholds A.1 & E.3), 18 (General Plan)				
Explanation: The project is not proposed in visual proximity to a state scenic highway and would not remove or damage trees, rock outcroppings, or historic buildings. The closest highway, the Arroyo Seco Parkway (State Route 110) falls outside the project viewshed. The highway is approximately 0.6 mile northwest of the project site and screened in visual terms from the project site by both intervening topography and distance. The project calls for excavation within a human-designed setting of low visual quality (e.g., bare ground strewn with gravel and concrete, asphalt-paved surfaces, non-historic buildings of utilitarian design, railroad tracks, and the concrete-paved LA River flood control channel). It would not affect existing features that contribute substantially to visual quality within the viewshed, nor would it contrast sharply with, or obstruct views of, such features. Although there is a park (i.e., State Park) with limited agricultural production to the west (across Baker Street) where fruit and street trees are cultivated in raised beds, this is a visual resource of secondary importance and would not be affected by the proposed project. The key visual resource in the project viewshed is the adjoining North Broadway Bridge. This structure, however, would not be physically altered in any way as a result of the proposed project. Because of the utilitarian character of the project setting beneath the bridge, the proposed project would not change the visual character or quality to any significant adverse degree or block views of the bridge from below. The inflatable dam and intake and discharge openings would appear to be extensions of other flood control and construction activities in and adjoining the river's concrete basin. The water wheel has the potential of becoming a new public art focal point and a visual resource for sightseers when visiting the bridge. Therefore, the water wheel could contribute aesthetic value and serve to enhance visual quality within the viewshed. It would not be a detracting visual element, and therefore, less-than-significant impacts would result.				
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☒	☐
Standard: A significant impact may occur if the proposed project introduces incompatible visual elements to the project site or visual elements that would be incompatible with the character of the area surrounding the project site. Reference: 18 (Thresholds A.1 and A.3)				
Explanation: The proposed project would not substantially degrade existing visual character or quality within the project's visual setting. It would neither diminish features that contribute substantially to visual character within the viewshed nor call for the conversion of natural open space. In addition, it would not obstruct views of key visual resources. As discussed in 1(b), the project calls for excavation within a human-designed setting of low visual quality. The project would not affect the site formerly known as "The Cornfield." In addition, the design of the project would be subject to review by the Cultural Affairs Commission, ensuring that the project would be aesthetically compatible with its surroundings in terms of design, materials, scale, and massing. It would also be compatible with visual resources such as the North Broadway Bridge and the nearby agricultural area. It is anticipated that the project key visual component, the water wheel, could become a public art focal point and a new visual resource for sightseers when visiting the bridge. Thus, impacts on the existing visual character or quality of the site and its surroundings would be less than significant.				

Issues	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant	No Impact
d) Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?	☐	☐	☐	☒
Standard: A significant impact would occur if the proposed project causes a substantial increase in ambient illumination levels beyond the property line or new lighting to spill over onto light-sensitive land uses such as residential areas, some commercial and institutional uses that require minimum illumination for proper function, and natural areas. Reference: 18 (Thresholds A.4)				
Explanation: Project lighting features, both during construction and operation, would not be a source of a substantial amount of light. In the event that nighttime lighting is required during the construction period, it would be configured so as to avoid spill effects. New outdoor lighting associated with the water wheel would be limited to the minimum level necessary for safety. It would most likely utilize LED or other comparable lighting technology to minimize energy use and avoid spill light and glare effects. In addition, the water wheel would not be designed with materials or finishes that would produce glare from reflected sunlight. No impacts would occur.				
2. AGRICULTURE AND FOREST RESOURCES – Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
Standard: In determining whether impacts on agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. Reference: 14) A significant impact may occur if the proposed project were to result in the conversion of state-designated agricultural land from agricultural use to another non-agricultural use. Reference: 4 (Ag. Land Eval.)				
Explanation: The project site does not contain designated Farmland. The project site is used for transportation and utility-related non-agricultural activities. The California Farmland Mapping and Monitoring Program designates the project site as a “Z" area, which is not mapped on the Important Farmlands Map for Los Angeles County. The soils on the project site are not associated with Prime Farmland or Farmland of Statewide Importance. Furthermore, the project site is not located on Prime Farmland, Unique Farmland, or Farmland of Statewide Importance. Therefore, the proposed project would not convert such farmland to non-agricultural use, and no impacts would occur. Reference: 8 (Farmland Map).				
b) Conflict with existing agricultural zoning or a Williamson Act contract?	☐	☐	☐	☒
Standard: A significant impact may occur if the proposed project were to result in the conversion of land zoned for agricultural use or protected under a Williamson Act contract.				
Explanation: The project site and adjacent parcels are not zoned for agricultural uses and not subject to a Williamson Act contract. The proposed project would occur in an area designated for Public Facilities (Reference: 20). The only Williamson Act contract within unincorporated Los Angeles County preserves open space on Santa Catalina Island, which is not within or near the project site. Furthermore, no parcels on the project site or in the vicinity are zoned for agricultural uses. Therefore, the proposed project would not conflict with a Williamson Act contract or existing agricultural zoning, and no impacts would occur. Reference: 8 (Farmland Map).				

Issues	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant	No Impact
c) Conflict with existing zoning for, or cause rezoning of, forestland (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?	☐	☐	☐	☒
Standard: In determining whether impacts on forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forestland, including the Forest and Range Assessment Project and the Forest Legacy Assessment project, and the forest carbon measurement methodology provided in the Forest Protocols adopted by the California Air Resources Board. Reference: 8				
Explanation: The project site is located in an urban area in the City of Los Angeles and zoned as an existing public facility. The site is currently asphalt paved. There is no forestland, timberland, or timberland zoned Timberland Production on or near the project site. No impact on forestland or timberland would occur as a result of construction or operation of the proposed water wheel. Therefore, the proposed project would not conflict with existing zoning or cause rezoning of forest or timberland. No impact would occur. Reference: 8 (Farmland Map).				
d) Result in the loss of forestland or the conversion of forestland to non-forest use?	☐	☐	☐	☒
Standard: In determining whether impacts on forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forestland, including the Forest and Range Assessment Project and the Forest Legacy Assessment project, and the forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Reference: #?				
Explanation: Refer to the discussion for 2(c), above. No loss or conversion of forestland would occur as a result of construction or operation of the proposed project. No impact would occur. Reference: 8 (Farmland Map).				
e) Involve other changes in the existing environment that, because of their location or nature, could result in the conversion of farmland to non-agricultural use?	☐	☐	☐	☒
Standard: A significant impact may occur if a project results in the conversion of farmland to non-agricultural use.				
Explanation: Refer to the discussion under 2(a) and 2(b), above. The proposed project would not convert farmland or forestland. The project site does not contain any agricultural land. Therefore, the proposed project would not result in any reduction in the amount of agricultural land. No impact would occur. Reference: 8 (Farmland Map).				
3. AIR QUALITY – Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☐	☒
Standard: A significant impact may occur if the project is inconsistent with or obstructs implementation of the Air Quality Element of the City's General Plan or the Air Quality Management Plan (AQMP). Reference: 18 (Thresholds B.1 to B.3), 31 (AQMD Handbook)				

Issues	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant	No Impact
Explanation: SCAQMD is required, pursuant to the federal Clean Air Act (CAA), to reduce emissions of criteria pollutants for which the Los Angeles Basin is in nonattainment status (i.e., O_3, PM10, PM2.5 and Pb). The project would be subject to SCAQMD's Air Quality Management Plan (AQMP), which contains a comprehensive list of pollution control strategies directed at reducing emissions and achieving ambient air quality standards. These strategies were based, in part, on regional population, housing, and employment projections prepared by SCAG. A project is consistent with the AQMP if it is consistent with the population, housing, and employment assumptions that were used in the development of the AQMP. The most recent AQMP, which was adopted by the SCAQMD Governing Board on December 7, 2012, incorporates SCAG's 2012–2035 RTP socioeconomic forecast projections of regional population and employment growth. The 2012–2035 RTP projects that the population of the region will grow as approximately 1.5 million new households move to the area between now and 2035. As the regional planning agency for Los Angeles, Orange, Ventura, Riverside, San Bernardino, and Imperial Counties, SCAG addresses regional issues related to transportation, the economy, community development, and the environment. As part of its air quality planning, SCAG has prepared the RCPG, which includes Growth Management and Regional Mobility chapters. These chapters provide the basis for the land use and transportation components of the AQMP and are used in the preparation of the air quality forecasts and the consistency analysis included in the AQMP. Both the RCPG and AQMP are based, in part, on projections originating with county and city general plans.[5] The proposed project, which would occur within the LA River channel, would result in no changes in land use. In addition, changes in population, employment, or the existing or planned transportation network or traffic patterns in the area would not occur. The project is within the Cornfield/Arroyo Seco Specific Plan area, which aims to integrate public art as a means to contribute to the civic and cultural life of the City. As such, the project would be consistent with the existing general plan, and growth projections would, therefore, be accounted for within AQMD attainment forecasts. Project development would not conflict with any air quality management plan, and no impact would occur. Reference: 38, Reference 49.				
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☐	☒	☐
Standard: A significant impact may occur if the proposed project violates any South Coast Air Quality Management District (SCAQMD) air quality standard. SCAQMD has set thresholds of significance for reactive organic gases (ROG), nitrogen oxides (NO_X), carbon monoxide (CO), sulfur dioxide (SO_2), and particulate matter (PM10) emissions resulting from construction and operation in the South Coast Air Basin. Reference: 18 (Thresholds B.1, B.2), 31 (AQMD Handbook)				
Explanation: Estimated air pollutant emissions during construction and operation would not exceed SCAQMD significance thresholds (see discussion in Section IV).				
c) Result in a cumulatively considerable net increase in any criteria pollutant for which the project region is in non-attainment status under an applicable federal or state ambient air quality standard (this includes releasing emissions that exceed quantitative thresholds for ozone precursors)?	☐	☐	☒	☐
Standard: A significant impact may occur if the proposed project results in a cumulatively considerable net increase in a criteria pollutant for which the South Coast Air Basin exceeds federal and state ambient air quality standards and has been designated as an area of nonattainment by EPA and/or the California Air Resources Board. The South Coast Air Basin is a nonattainment area for CO, nitrogen dioxide, ozone, PM10, and fine particulate matter (PM2.5). Reference: 18 (Thresholds B.1, B.2), 31 (AQMD Handbook)				

[5] SCAG serves as the federally designated MPO for the Southern California region.

Issues	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant	No Impact
Explanation: Construction and operational emissions of the project would not exceed SCAQMD's thresholds of significance for criteria pollutants. For those emissions generated during construction, the minor generation of criteria pollutants would be temporary and short term in nature (see discussion in Section IV).				
d) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
Standard: A significant impact may occur if construction or operation of the proposed project generates pollutant concentrations to a degree that would significantly affect sensitive receptors. Reference: 18 (Thresholds B.1 to B.3)				
Explanation: As discussed above, the proposed project is not anticipated to result in substantial pollutant concentrations (see discussion in Section IV).				
e) Create objectionable odors that would affect a substantial number of people?	☐	☐	☒	☐
Standard: During construction, sources of odor are diesel emissions form construction equipment and volatile organic compounds from sealant applications or paving activities. However, these odors would be temporary and localized. Nonetheless, applicable best management practices such as those in SCAQMD Rule 431 (Diesel Equipment) would, in addition to minimizing air quality impacts, help minimize potential construction odors. Reference: 18 (Thresholds B.1 and B.2)				
Explanation: Refer to Section IV.				
4. BIOLOGICAL RESOURCES – Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations or by the California Department of Fish and Wildlife or the U.S. Fish and Wildlife Service?	☐	☒	☐	☐
Standard: A significant impact may occur if the proposed project would remove or modify habitat for any species identified or designated as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulation or by the state or federal regulatory agencies cited. Reference: 18 (Thresholds C)				
Explanation: ICF International conducted a biological resources and habitat assessment on June 18, 2012 for the proposed project (Reference: 49). The literature review included a review of the U.S. Fish and Wildlife Service (USFWS) Species Occurrence Database (reviewed July 6, 2012 and June 26, 2013,) and the USFWS mapping of designated Critical Habitat (reviewed June 13, 2012 and June 26, 2013) (Reference: 55; 56). The California Natural Diversity Database (CNDDB) (Reference: 9) and the CNPS Inventory of Rare and Endangered Plants (Reference: 43) were reviewed for the Los Angeles, California (Reference: 33) and surrounding 7.5-minute USGS quadrangles. Several sensitive plant and wildlife species are known to occur within the quadrangle. However, based on known ranges and suitable habitat conditions observed during the site visit, ICF found that only one special status plant species and six special status wildlife species have potential to occur in the project vicinity. The single special-status plant species determined to be present within the study area is the southern California black walnut (Juglans californica). This tree is a CNPS CRPR List 4.2 species, a species of local concern in the Los Angeles region, and a City of Los Angeles protected tree. Individuals of this species are located within Elysian Park and would not be either directly or indirectly altered as a result of project implementation.				

Issues	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant	No Impact

Of the 28 special-status wildlife species evaluated, six species were determined to have a moderate potential to occur within the study area: American peregrine falcon (*Falco peregrinus anatum,* State Fully Protected [FP]), big free-tailed bat (*Nyctinomops macrotis*) (California Species of Special Concern [SSC]), pallid bat (*Antrozous pallidus*; SSC), pocketed free-tailed bat (*Nyctinomops femorosaccus*; SSC), western mastiff bat (*Eumops perotis californicus*; SSC), and western yellow bat (*Lasiurus xanthinus*; SSC). These species and their potential for occurrence on the project site are discussed below.

American peregrine falcon is designated as a State Fully Protected (SFP) species. It was determined that the medium sized buildings and structures within the study area provide suitable nesting and foraging habitat for the species. Furthermore, all developed and undeveloped portions of the study area contain suitable nesting habitat for a variety of avian species, including, but not limited to, those species observed during the habitat assessment. Several bird species including black phoebe, northern rough-winged swallow, barn swallow, and white throated swift were observed nesting and foraging within the LA River area and foraging within the State Park. Black-necked stilt was observed nesting within the LA River during the site visit.

The proposed physical improvements and operational aspects of the proposed project would not significantly alter conditions within the project site and study area with respect to suitability of habitat for foraging. Compliance with the established regulatory provisions under the Migratory Bird Treaty Act (MBTA) and California Fish and Game Code will ensure that take of a peregrine falcon nest and other nesting birds would not occur.

Direct impacts to American peregrine falcon and other nesting bird habitat could occur only if construction activities are scheduled for the bird breeding season (February 15 to September 15). Implementation of a mitigation measure BIO-1 below, a pre-construction nesting survey, would ensure that the project does not result in significant impacts to nesting American peregrine falcon and other nesting birds (Reference: 49). Therefore, the potential for impacts to American peregrine falcon or other protected nesting birds would be less than significant (Reference: 49).

Five special-status bat species were determined to have a moderate potential to utilize the study area in some capacity: big free-tailed bat, pallid bat, pocketed free-tailed bat, western mastiff bat, and western yellow bat. All five of these bat species are designated as SSC. In addition, these bat species were determined to have moderate potential to utilize the study area in both a roosting and foraging capacity. In particular, the bridges that cross the LA River, the buildings and other structures with small exposed crevices, and the ornamental fan palms and date palms within the study area have the greatest potential to support roosting bats. It was determined that these bats have the potential to forage within the study area. Areas within the study area with the greatest potential to support foraging bats include the LA River, LASHP, and Elysian Park. Impacts from construction of the proposed project would be significant if the bats were not allowed to roost or forage during construction; however, implementation of Mitigation Measure BIO-2 (below) would reduce impacts to less-than-significant levels.

With implementation of Mitigation Measures BIO-1 and BIO-2, the proposed project would not result in substantial effects on any candidate, sensitive, or special status species.

Mitigation Measure BIO-1: If construction occurs during the nesting period (February 15 through September 15, or as otherwise defined by the California Department of Fish and Wildlife), a pre-construction nesting bird survey must be performed by a qualified biologist. The survey shall be performed within seven days prior to any ground disturbing activities. If active nests are found, the following buffers are recommended to be used until a qualified biologist determines that nesting activities have ceased: 500 feet for raptors and any listed species, 100 feet for all other bird species unless otherwise authorized by CDFW. This will provide adequate protection to native nesting birds for the proposed project under MBTA and California Fish and Game Code. If there is no nesting within 100 feet of the limits of disturbance (500 feet for raptors), no further action is necessary. If project-related ground disturbance occurs outside of the nesting season, no nesting bird survey is necessary.

Issues	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant	No Impact
Mitigation Measure BIO-2: If work is expected to occur within 100 feet of trees or other structures with bat roost potential during the maternity season (April 15–August 15), a qualified bat biologist should conduct a one night emergence survey during acceptable weather conditions (no rain or high winds, night temperatures above 45˚F) or if conditions permit, physically examine the tree or structure for presence or absence of bats (such as with lift equipment) before the start of construction. If the roost is determined to be occupied during this time, the tree or structure shall be avoided until after the maternity season when young are self-sufficiently volant. If trees or structures with bat roost potential require removal during the winter months when bats are in torpor (October 31-–February 15, but is dependent on specific weather conditions), a qualified bat biologist shall physically examine the tree or structure (if conditions permit) for presence or absence of bats (such as with lift equipment) before the start of construction. If the tree or structure is determined to be occupied during this time, the tree or structure shall be avoided until after the winter season when bats are once again active.				
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Wildlife or the U.S. Fish and Wildlife Service?	☐	☐	☒	☐
Standard: A significant impact may occur if riparian habitat or any other sensitive natural community were to be adversely modified. Reference: 18 (Thresholds C)				
Explanation: Approximately 2.48 acres of Coast Live Oak Woodland/California Walnut Grove were mapped within the 500-foot buffer area. In addition the LASHP contains several individuals of planted western sycamore and coast live oak. The Coast Live Oak/California Walnut Grove vegetation community consists of lands situated on the southern slopes of Elysian Park and contains an assorted mixture of native and ornamental vegetation but is dominated by native trees such as coast live oak (*Quercus agrifolia*) and southern California black walnut (*Juglans californica*). Coast Live Oak Woodland/California Walnut Grove is considered a sensitive natural community by CDFW. The habitat located within Elysian Park would not be directly or indirectly affected as a result of project implementation. The individual trees planted within LASHP would not be directly or indirectly affected as a result of project implementation. No riparian habitat or other sensitive natural communities are present within the project site or general vicinity.				
c) Have a substantial adverse effect on federally protected wetlands, as defined by Section 404 of the Clean Water Act (including, but not limited to, marshes, vernal pools, coastal zones, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☒	☐
Standard: A significant impact may occur if federally protected wetlands, as defined by Section 404 of the Clean Water Act, would be modified or removed. Reference: 18 (Thresholds C), 32 (Nat. Wetlands Map)				
Explanation: A jurisdictional delineation was prepared for the project, the results of which are presented in the jurisdictional delineation report (Reference: 49). The results of the jurisdictional delineation found there to be State Streambeds, and Federal Waters but no federally protected wetlands in the project site. The LA River is a potential jurisdictional water of the U.S. Army Corps of Engineers (USACE) and the Regional Water Quality Control Board (RWQCB) and is a potential CDFW jurisdictional feature. The LA River is tributary of the Pacific Ocean. A majority of the river has been transformed into a concrete-lined box or trapezoidal channel used for flood control during high velocity storm events. The low-flow channel of the river conveys perennial flow that is primarily composed of waste water treatment plant releases and urban dry-weather runoff. In the study area, the bed and bank are cement-lined, and no soils were present at the time of the delineation field review. Given the lack of soils within the channel,				

Issues	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant	No Impact
vegetation is essentially absent. There were no additional jurisdictional water bodies in the study area. The river channel contained physical evidence of ordinary water flows in the form of water staining visible at the toe of each side slope, averaging approximately 155 feet in width throughout the study area (width of river bottom). In addition to this physical field evidence, this delineation also takes into consideration modeled hydraulics information from the project engineer (Reference: 47). Based upon the hydraulic analysis of the 1.6-year bankfull discharge, a typical depth of flow of 4.5 feet has been utilized to define USACE Waters of the United States in this case. With the trapezoidal channel configuration throughout the delineation limits, this corresponds to an approximate width of 175.5 feet. The easternmost extent of the LASHP contains a manufactured feature that is not considered to be jurisdictional to USACE, RWQCB, or CDFW. The feature is completely contained within uplands, is vegetated with upland vegetation, and was created after March 7, 2011 (according to historic aerial imagery). The feature does not exhibit signs of an Ordinary High Water Mark (OHWM) and is not jurisdictional under the USACE. The feature does not convey flows, does not exhibit evidence of hydrology, has no beneficial uses, and is not jurisdictional under the RWQCB. The feature has no defined bed and bank and is not jurisdictional under CDFW.				
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species, or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☐	☒
Standard: A significant impact may occur if the proposed project interferes or removes access to a migratory wildlife corridor or impedes the use of native wildlife nursery sites. Reference: 10 (BIOS), 18 (Thresholds C)				
Explanation: Habitat linkages are areas that provide a communication between two or more other habitat areas that are often larger or superior in quality to the linkage. Such linkage sites can be quite small or constricted, but can be vital to the long-term health of connected habitats. Corridors are similar to linkages, but provide specific opportunities for individual animals to disperse or migrate between areas, generally extensive but otherwise partially or wholly separated regions. Adequate cover and tolerably low levels of disturbance are common requirements for corridors. Habitat in corridors may be quite different than that in the connected areas, but if used by the wildlife species of interest, the corridor will still function as desired. While the LA River has the topographic structure of a wildlife corridor and animals can travel along the river, the river lacks adequate cover and routine vegetation removal removes any cover or suitable habitat that may be present. In addition, the proposed project does not connect to any habitat suitable for plants or animals as it is completely developed. No habitat linkages or wildlife corridors are present within the study area; therefore, no impact to linkages or corridors would occur as a result of the project.				
e) Conflict with any local policies or ordinances to protect biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒
Standard: A significant impact may occur if the proposed project were to cause an impact that would be inconsistent with local regulations pertaining to biological resources. Reference: 10 (CDFG), 27 (Tree Policy), 28 (Urban Forest Program), 25 (PW Tree Policy), 18 (Thresholds C)				
Explanation: Section 46.00 of the Los Angeles Municipal Code (Preservation of Protected Trees) provides protection for certain species of trees native to the city. These trees include most oak trees, Southern California black walnut, western sycamore, and California bay. City policies also specify replacement ratios when any street trees are removed. The Interpretive Nature Walk Area within LASHP contains several individuals of planted western sycamore and coast live oak. In addition, the northern edge of the study area within Elysian Park contains several older individuals of coast live oak and southern California				

Issues	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant	No Impact
black walnut that are protected under these City provisions. There are no trees within the parcel upon which the water wheel is proposed to be constructed, within potentially affected reaches of the LA River channel, or along the alignment of the pipeline that will be extended across Baker Street. Therefore, the proposed project would not conflict with any local policies or ordinances protecting biological resources and there would be no impact in this regard.				
f) Conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒
Standard: A significant impact may occur if the proposed project would be inconsistent with mapping or policies in any conservation plans of the cited type. Reference: 9 (CNDDB), 18 (Thresholds C)				
Explanation: The project site does not occur within a Habitat Conservation Plan or Natural Community Conservation Plan (Reference: 49). No impacts would occur. Reference: 9 (CNDDB)				
5. CULTURAL RESOURCES – Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in California Code of Regulations Section 15064.5?	☐	☐	☐	☒
Standard: A significant impact may result if the proposed project causes a substantial adverse change to the significance of a historical resource (as identified above). Reference: 14 (Guidelines 15064.5), 18 (Thresholds D.3), 12 (CHRIS)				
Explanation: The North Broadway Bridge (originally the Buena Vista Viaduct), completed in 1911, is considered a historical resource, as defined in Section 15064.5(a)(2) of the State CEQA Guidelines, which states that properties included in a local register of historical resources shall be presumed to be historically or culturally significant. The City maintains a local register of historical resources, which it designates Historic-Cultural Monuments (HCMs). The North Broadway Bridge was declared HCM #907 on January 30, 2008 (Reference: 20), and all of its components are historical resources under CEQA. With respect to the LA River, it could not be verified that the river has been found to be a historical resource, according to Section 15064.5 of the State CEQA Guidelines. However, for the purposes of this study, the LA River is considered to be a historical resource under the criteria related to important historic associations given its significant role in the establishment and growth of the City. Sited along the banks of the LA River and approximately 1 mile from the original pueblo site, the Madre occupies a site that is rich in history. Spanning a period of centuries, this history encompasses the indigenous Tongva/Gabrieleno people, the early Spanish pueblo settlement and agrarian uses of the 18th century, and the region's evolution as an industrial center in 19th and 20th centuries. The site's role in the history of the region's water management is particularly important. The earliest written accounts of the site date to a Spanish expedition led by Gaspar de Portola. Approaching from the east and arriving in the area on August 2, 1769, Juan Crespi, a member of the expedition, emphasized the area's lush vegetation and excellent water supply in his diary. After overnighting near the Madre site, the Portola contingent continued its journey to the southwest, encountering Yang-na, or Yabit, a village populated by the Tongva, within approximately 1 mile. The combination of good water access, fertile soil, and friendly inhabitants influenced the Spanish to establish a town settlement (pueblo) at the site in 1778. The Spanish settlement consisted of 4 square leagues that were centered on the plaza, with 12 residential lots surrounding it and 36 larger lots for planting platted nearer the river to the south and east. Although ownership was vested in the King of Spain, these residential lots (sitios) and planting lots (suertes) were assigned for the use of individual settler families. Lots to the north, between the plaza and the river, encompassed the Madre site. These were known as *propios* and served as common planting areas.				

Issues	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant	No Impact

Los Angeles River

The settlers quickly attended to water distribution. By late 1781, to supply water to families and irrigate crops, pueblo residents excavated a ditch that connected the river to the plaza and the burgeoning agricultural fields that surrounded it. With an intake dam located just north of the current location of the North Broadway Bridge, this main irrigation ditch became known as the Zanja Madre.

Crespi's 1769 account described wild grapes that grew in profusion in the area. By 1804, vineyards were being cultivated, signaling the ascendancy of the region's viticulture industry. By 1817, more than 50,000 vines were under cultivation in the pueblo. Wine grapes remained the top producing crop until the 1860s. A variety of grains, including wheat and corn, along with beans, were also cultivated successfully.

With an 1820 population of 650 and an economy that was increasingly dependent on agriculture, the growing pueblo knew that it was imperative to have an available source of water and the essential infrastructure for distribution. Heavy rains in 1815 and 1825 introduced the region's new settlers to the river's itinerant nature. Flooding caused by these heavy rains was so extensive that it changed both the channel and the course of the river, moving it west in 1815 and back again in 1825. As the city continued to grow in the century that followed, generations of Angelenos would grapple with managing the river's explosive flows and peripatetic course.

By 1849, just before statehood, the irrigation system had expanded to include the Zanja Madre and several subsidiaries. By 1854, the matter of water distribution was important enough for the Common Council of Los Angeles to establish a position known as *zanjero*. By 1860, the pueblo's population had grown to almost 4,500. Infrastructure demands increased in direct proportion to population growth, and the zanjero soon became the most powerful public official in the fledging city. By 1870, the irrigation system had grown to a combined length totaling 50 miles.

Crudely engineered, the irrigation ditches were both unlined and uncapped. As a result, much of the water that flowed through was lost through absorption, evaporation, or unauthorized appropriation. In addition, the open nature of the system made it unsanitary. Clothes washing and bathing were frequent activities. It was not unknown for bodies—human and animal—to be found in them.

Given the increasingly unsanitary condition of the city's irrigated water supply, some more affluent Angelenos arranged to have their water delivered privately in carts by the bucketful. In response to this growing segment of the water market, the Los Angeles Water Works company developed a distribution system that delivered piped water to individual residences staring in 1858. This water was lifted from Abila Springs, near the corner of present-day Alameda and College Streets, with use of a water wheel and conveyed from an elevated flume to a reservoir. From the reservoir, the water was directed to individual homes through underground wooden pipes.

Storms in December of 1861 destroyed both the dam that diverted water from the river into the Zanja Madre and the water wheel, increasing the urgency for a more reliable water distribution system. In 1862, a new and larger dam replaced the one that succumbed to the 1861 storms. It supplied water to flumes, which, in turn, carried water to a reservoir located on the plaza. By 1864, a system of underground wooden pipes carried water directly to Angelenos' homes.

In 1865, a new water wheel was erected at the site of the water diversion dam. It conveyed water through flumes to a reservoir located near Broadway and Bishops Road. Short lived, this wheel—along with the dam—was also washed away by flooding 1867. Over the next 30 years, a distribution system was implemented, involving new ditches and damming the river farther upstream to eliminate the need for water wheels and elevated plumes, which had proven vulnerable to Los Angeles's winter storms.

Railroad Development

Issues	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant	No Impact

Isolated from the East and Midwest by forbidding mountains and perilous deserts, Los Angeles remained a difficult destination until relatively late in the 19th century. Keenly aware of the high costs and lack of options associated with transporting goods to and from Los Angeles, the City's boosters prioritized bringing a rail connection to the region. The Southern Pacific Railway Company demanded cash and land: $600,000 and a location suitable for rail yards. Using bond issues passed by the citizenry in 1872, the city agreed. Arcadia Bandini de Stearns, who had inherited sizeable portions of land from her husband Abel Stearns, donated a parcel just south of the Madre site to the Southern Pacific in 1873. Stearns had located his Capitol Mills flour processing plant south of the site and along the route of the Zanja Madre to exploit the running water that passed through it to power his mill.

By 1876, a rail line connecting Los Angeles to San Francisco had been completed. The area surrounding the Madre site, which became known as Station Yard and Bull Ring Yard, was rapidly transforming from agricultural to railroad-related uses. It eventually became the hub of Southern Pacific's operations in the region. Southern Pacific, Santa Fe, and Union Pacific railroad tracks crisscross the entire area, lining both sides of the river along this stretch.

Managing the River

The Los Angeles Basin watershed includes not only the LA River but also Rio Hondo and the San Gabriel River. Frequent and often violent winter storms have historically caused substantial flooding along the basin's rivers. Following the establishment of the Pueblo de Los Angeles, these floods and the resulting damage periodically disrupted the fledging city's water supply. As the population increased, so too did the devastation arising from the floods of 1862, 1884, and 1889. After the 1889 floods, the Los Angeles County Board of Supervisors commissioned a flood control study that concentrated on Rio Hondo and the San Gabriel River. Their recommendations included widening the LA River but were not implemented. In 1914, with Los Angeles's population exploding and the built environment expanding rapidly, another flood did considerable damage. As a result, the Board of Supervisors established the Los Angeles County Flood Control District. Subsequently, flood control projects were proposed and approved by a 1917 bond measure. Additional bond measures were approved in the 1920s. Bond money was spent on diverting the LA River away from Long Beach Harbor and installing various flood control schemes, which would prove to be woefully inadequate in the coming decade. Indeed, the flood of 1934 revealed the need for rapid improvement in flood control, and USACE took on the task. However, it was the exceedingly damaging flood of 1938 that led USACE to settle on the concept of large, deep, reinforced concrete channels along most of the LA River as the ultimate solution. In addition, the construction of Sepulveda Dam in the San Fernando Valley helped control the volume of water released into the river during times of flood. By 1940, the LA River flood control system, with its deep concrete-lined channel in the vicinity of the project area, had been completed.

Bridging the River

Given the LA River's tendency to flood, with a resulting loss of life and property, a series of bridges of increasing size and strength have been constructed since the mid-19th century. Iron and steel bridges appeared in the 1840s, linking downtown Los Angeles with the east side. However, such bridges were easily destroyed during floods. Motivated partly by the "City Beautiful Movement" arising from the World's Columbian Exposition of 1893, city leaders envisioned civic improvements, such as bridges, as part of their plan to beautify Los Angeles. In the coming decades 16 monumental bridges would be erected across the LA River. Homer Hamlin of the Bureau of Engineering championed concrete arched bridges decorated in neoclassical or Beaux Arts styles during his tenure from 1906 to 1917. Under Hamlin's direction, the Main Street Bridge was erected in 1910, the Seventh Street Viaduct appeared in 1910 (redesigned in 1927), and the Buena Vista (now North Broadway) Bridge was completed in 1911. The latter is the bridge located in the project area. All three of these bridges are designated City HCMs. However, it was Merrill Butler, Engineer of Bridges and Structures from 1923 to 1963, who had the greatest influence in the design and construction of bridges across the LA River. With funds provided

Issues	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant	No Impact

by the Viaduct Bond Act of 1923 and, later, the federal government, Butler oversaw the construction of the Olympic Boulevard Bridge (1925 [HCM]), Los Feliz Boulevard Bridge (1925), Macy Street Bridge (1926 [HCM]), Fletcher Avenue Bridge (1927 [HCM]), North Spring Street Bridge (1928 [HCM]), First Street Viaduct (1929 [HCM]), Glendale-Hyperion/Victory Memorial Viaduct (1929 [HCM]), Fourth Street Viaduct (1930 [HCM]), Washington Boulevard Bridge (1931 [HCM]), Sixth Street Viaduct (1932 [HCM]), Northbound Figueroa Street Viaduct (1937), Riverside/Zoo Drive Bridge (1938), Riverside/Figueroa Street Bridge (1927/1939 [HCM]), Lankershim Boulevard Bridge (1940), and the Southbound Figueroa Street Viaduct (1943).

The Bureau of Engineering, utilizing funds from the federal government's Work Progress Administration (1935–1943), in consultation with the City's Municipal Art Commission, produced the Moderne/Art Deco bridges such as the Riverside/Figueroa Street Bridge and the Lankershim Boulevard Bridge. However, most relevant to the current project is the North Broadway Bridge, originally named the Buena Vista Viaduct when completed in 1911. It was the first of the monumental concrete bridges to straddle the LA River and was the first open-spandrel arch bridge in California. It was also the longest and widest concrete bridge in the state when it opened. The character-defining features of the bridge include its Beaux Arts design; reinforced concrete construction; arched spans; decorative columns, pylons, balustrades, and balconies; and globe lamps. In 2000, the decorative elements of the bridge (balustrade, columns, balconies) were restored to their original appearance. The bridge was designated City HCM #907.

Impact Discussion

The study area for potential impacts on historic resources arising from the proposed project includes the parcel on which the water wheel would be constructed, the North Broadway Bridge, and the river where the diversion dam, side channels, and pipes would be constructed. Of these, the North Broadway Bridge and the LA River are historical resources for the purposes of CEQA.

Installation of the proposed water wheel, alteration of the LA River's concrete channel walls and bottom, and installation of an inflatable dam would result in no direct impacts on the significance of the North Broadway Bridge or the LA River as historical resources. Specifically, the proposed water wheel and associated equipment would not physically touch any portions of the North Broadway Bridge. With respect to the LA River, concrete panels from the apron of the channel would be removed up to a vertical height of approximately 10 feet. In addition, portions of the flat concrete riverbed would be removed to accommodate receiving pits (8 by 15 feet in size).

The river is a highly altered environment, with its current form in the vicinity of the bridge established in 1938. The proposed modifications would have no direct impact on the significance of the LA River as a historical resource because of the relatively small size of the removed portions of the concrete apron and riverbed in relation to the overall size of the concrete river channel in the vicinity of the North Broadway Bridge. Similarly, there would be no direct impact on the significance of the river from installation of an inflatable dam, which would span the width of the river. The inflatable dam would be reversible and not permanent, thereby in no way affecting the historical significance of the LA River.

The proposed water wheel would be a work of sculpture that would rise 35 feet above the ground surface. It would be 3.5 feet below the bridge deck and approximately 50 feet from the bridge's semicircular balcony. It would have no indirect impact on the character-defining features of the North Broadway Bridge (i.e., Beaux Arts design; reinforced concrete construction; arched spans; decorative columns, pylons, balustrades, and balconies; and globe lamps).

To summarize, because of its distance from the historic bridge, the proposed water wheel would not interfere with visual appreciation of the bridge's design when viewed from positions south, west, and east of the bridge. In addition, the water wheel, as a work of art, would be an attractive visual feature, with ties to the history of water distribution in the Pueblo de Los Angeles in the late 1850s and the original water wheel, which existed near the project site. Finally, installation of a water wheel would

Issues	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant	No Impact

reinforce the historic importance of the LA River as a water source.

In conclusion, the proposed project would not cause a substantial adverse change in the significance of a historical resource, in accordance with Section 15064.5 of the State CEQA Guidelines.

b) Cause a substantial adverse change in the significance of an archaeological resource, pursuant to California Code of Regulations Section 15064.5?	☐	☒	☐	☐

Standard: A significant impact may occur if the proposed project were to cause a substantial adverse change in the significance of an archaeological resource that falls under the State CEQA Guidelines section cited above. Reference: 14 (Guidelines 15064.5), 18 (Thresholds D.2), 12 (CHRIS)

Explanation: As indicated in the cultural background text presented above, the project area is within an area of downtown Los Angeles that has been previously developed with streets, railroads, and industrial uses. Development in this area also included channelization of the LA River. Despite this level of development, caution must be exercised in assessing the potential for preserved subsurface prehistoric archaeological resources in developed areas near the LA River. The discovery of extensive historical and prehistoric resources, including human remains, immediately under the asphalt surface near Los Angeles Union Station in 1995 (archaeological site CA-LAN-1575/H) demonstrates how resources can be preserved despite extensive urbanization (Reference: 38).

A record search conducted on July 2, 2012, determined that no prehistoric or historical archaeological sites have been recorded in the project area. Four historic-period archaeological sites and one isolate have been recorded within a 0.25-mile radius. Another cultural resource that was once in proximity to the project area is an unrecorded segment of the Zanja Madre, or “mother ditch,” which once ran along the base of the bluff at the northern edge of the railroad yard. The Zanja Madre was the original aqueduct that brought water to the Pueblo de Los Angeles from the LA River and an important part of the City’s water system during its early development.

The recorded sites are tabulated below.

Site Number	Site Description	Date Recorded
CA-LAN-3100	Historic-period debris (nine items)	2002
CA-LAN-3101	Historic-period debris (approx. 25 items)	2002
CA-LAN-3120	River Station (“Cornfield”) railroad yard	2003
CA-LAN-4182	Railroad ties in North Street	2011
19-100881 (Isolate)	Historic-period debris (three items)	2009

The River Station railroad yard, now the State Park, was the center of Southern Pacific operations in Southern California. Established in 1875, a depot and freight warehouse were first constructed, followed by a hotel in 1879. During the 1870s, various maintenance facilities were built, including a roundhouse, machine shop, car shop, blacksmith shop, coal dock, ice house, and other facilities (Sampson and Garrett 2010). The railroad removed the buildings from the River Station railroad yard in 1904. The area was used as a freight yard until 1996. The area was designated a state park in 2005. Previous work in the River Station railroad yard indicates that there is a high potential for historical archaeological resources associated with early railroad development in the area. This high potential to discover buried historic-period archaeological resources may extend to the project area.

Because there is no surface exposure in the project area, an archaeological resources survey was not performed. Although a great deal of archaeological work has been done in the adjacent railroad yard/State Park, only one previous archaeological survey (Peak & Associates 1992) has encompassed portions of the project area.

The project area has undergone grading and earthmoving at various times for construction of existing buildings, the LA River channel, Metro Gold Line, and streets. Ground disturbances from these previous

Issues	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant	No Impact
developments may have inadvertently destroyed unknown archeological resources. However, because significant buried cultural resources may exist within the project area and it is possible that these archaeological materials could be unearthed during project excavation activities, construction of the proposed project may have the potential to disturb and destroy an archaeological resource. Disturbance of significant archaeological resources would result in a significant adverse impact. Mitigation measure CR-1 would reduce impacts associated with the proposed project to a less-than-significant level. **Mitigation Measure CR-1:** A qualified professional archaeologist shall monitor the initial phase of ground-disturbing activities of the project. If buried cultural resources—such as historic debris, building foundations, non-human bone, flaked or ground stone—are discovered during ground-disturbing activities, work shall stop in that area and within 50 feet of the find until a qualified archaeologist can assess the significance of the find and, if necessary, develop appropriate treatment measures. Treatment measures typically include development of avoidance strategies, capping with fill material, or mitigation of impacts through data recovery programs such as excavation or detailed documentation. If, during cultural resources monitoring, the qualified archaeologist determines that the sediments being excavated are previously disturbed or unlikely to contain significant cultural materials, the qualified archaeologist can specify that monitoring be reduced or eliminated.				
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☒	☐	☐
Standard: A significant impact may occur if grading or excavation activities associated with the proposed project would disturb unique paleontological resources or unique geologic features. Reference: 14 (Guidelines 15064.5), 18 (Thresholds D.1), 30 (Dibblee), 12 (CHRIS), 20 (ZIMAS)				
Explanation: Surface deposits in the project area, consisting of floodplain deposits from the LA River, are mapped as younger Quaternary alluvium (Dibblee and Ehrenspeck 1989). These are silt, sand, and gravel deposits of Holocene age (10,000 years Before Present [BP] to Recent). Because of the proximity to the LA River, younger Quaternary alluvium in the project area is likely to be quite thick. Underlying these deposits is older Quaternary alluvium of Pleistocene age (2.6 million years ago (Ma) to 10,000 BP). Geotechnical testing for the project (Reference: 37) indicated that the project site is underlain by about 5 feet of fill, with alluvial sands beneath this fill. The hills and bluffs northwest of the project area are made up of surface exposures of bedrock from the Monterey Formation (also referred to as the Puente Formation in this area) of late Miocene age (11.6 to 5.3 Ma). Monterey Formation bedrock was not encountered in project investigations, which were conducted to depths of 70 feet below the ground surface, but may be present at relatively shallow depths north of the project site along Broadway (Reference: 37). The paleontological sensitivity of sediments in the project area ranges from none to very sensitive. Fill has no paleontological sensitivity. Quaternary younger alluvial deposits contain the remains of modern organisms and are too young to contain fossils. Younger alluvial deposits have been determined to have a low potential for paleontological resources. Typically, Quaternary older alluvial deposits throughout Southern California are considered to be highly sensitive for vertebrate fossils. The Monterey Formation, the uppermost layers of consolidated bedrock underlying the alluvial deposits, has been demonstrated to be fossiliferous in the vicinity of the study area and is considered to have a high sensitivity for paleontological resources. A check of the vertebrate paleontology records of the Natural History Museum of Los Angeles County (LACM) indicated that no fossil resources have been recovered within the project area (Reference: 39). The museum's files indicated that the nearest vertebrate fossil locality is from the Monterey Formation, LACM 7507, located about 0.6 mile north of the project site. This locality yielded a fossil fish at a depth of 100 feet below the ground surface. Within Elysian Park, to the north, a general fossil locality, LACM 4967				

Issues	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant	No Impact
also yielded marine invertebrates, including a specimen of a species new to science (Reference: 39). Deeper excavations associated with the project, those that extend 10 feet or more below the ground surface, may encounter significant fossil resources. Disturbance of significant paleontological resources would result in a significant adverse impact. Mitigation measure CR-2 would reduce impacts associated with the proposed project to a less-than-significant level. **Mitigation Measure CR-2:** Project plans shall specify that a qualified paleontologist shall monitor initial ground disturbance at depths below ground surface greater than 10 feet. The qualified paleontologic monitor shall retain the option to reduce monitoring if, in his or her professional opinion, the sediments being monitored were previously disturbed. Monitoring may also be reduced if the potentially fossiliferous units, previously described, are not present or, if present, determined by qualified paleontologic personnel to have a low potential to contain fossil resources. The monitor shall be equipped to salvage fossils and samples of sediments as they are unearthed to avoid construction delays and empowered to temporarily halt or divert equipment to allow removal of abundant or large specimens. Recovered specimens shall be prepared to a point of identification and permanent preservation, including washing of sediments to recover small invertebrates and vertebrates. Specimens shall be curated into a professional, accredited museum repository with permanent retrievable storage. A report of findings, with an appended itemized inventory of specimens, shall be prepared and shall signify completion of the program to mitigate impacts on paleontological resources.				
d) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☒	☐	☐
Standard: A significant impact may occur if grading or excavation activities associated with the proposed project would disturb interred human remains. Reference: 14 (Guidelines 15064.5), 18 (Thresholds D.2), 12 (CHRIS)				
Explanation: The project location is not a formal cemetery and is not adjacent to a formal cemetery. The project parcel is not known to contain human remains interred outside formal cemeteries, nor is it known to be located on a burial ground. The record search for the project indicated that no prehistoric archaeological sites are located in or near the project area. However, it is possible human remains could be unearthed during project excavation activities. Native American burials are often situated along the banks or flood terraces of rivers, and the project location adjacent to the LA River indicates a high sensitivity for human remains. Disturbance of human remains would result in a significant adverse impact. Mitigation measure CR-3 would reduce impacts associated with the proposed project to a less-than-significant level. **Mitigation Measure CR-3:** Project plans shall specify that should human remains be uncovered during construction, construction shall halt in the area of discovery, the area shall be protected, and no further disturbance shall occur, as specified by State Health and Safety Code Section 7050.5. The county coroner shall determine the origin and disposition of the human remains pursuant to Public Resources Code 5097.98. If the coroner recognizes the remains to be Native American, he or she shall contact the California Native American Heritage Commission (NAHC) within 24 hours. For remains of Native American origin, no further excavation or disturbance shall take place until the most likely descendant of the deceased Native American(s) has made a recommendation to the landowner or the person responsible for the excavation work regarding means of treating or disposing of the human remains and any associated grave goods, with appropriate dignity, as provided in Public Resources Code Section 5097.9. In consultation with the most likely descendant, the project archaeologist and the project proponent shall determine a course of action regarding preservation or excavation of Native American human remains, and this recommendation shall be implemented expeditiously. If the NAHC is unable to identify a most likely descendant or the descendant fails to make a recommendation within 48 hours after being notified by the commission, the project archaeologist and the project proponent shall determine a course of action regarding preservation or excavation of Native American human remains, which shall be				

Issues	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant	No Impact
submitted to the NAHC for review prior to implementation.				
6. GEOLOGY AND SOILS – Would the project:				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault?	☐	☐	☒	☐
Standard: A significant impact may occur if the proposed project were located within a state-designated Alquist-Priolo Zone or other designated fault zone and appropriate building practices were not followed. References: 6 (CDC Publ. 42), 18 (Thresholds E.1)				
Explanation: The project site is not located with an Alquist Priolo Fault Zone. As such the potential for surface fault rupture at the site is considered low and thus impacts would be less than significant References: 6(CDC Publ. 42)				
ii) Strong seismic ground shaking?	☐	☒	☐	☐
Standard: A significant impact may occur if the proposed project design did not comply with building code requirements intended to protect people from hazards associated with strong seismic ground shaking. Reference: 6 (Seismic Hazard Map, Los Angeles Quad.), 18 (Thresholds E.1)				
Explanation: Due to its location in Southern California the proposed project could result in the exposure of persons and structures on the site to strong seismic shaking. These risks are not unique to the site. The proposed project will be designed by California-licensed professional civil, geotechnical, and structural engineers in accordance with applicable building codes. Construction will be performed by licensed professional contractors who will comply with applicable safety standards. Designs will subject to reviews and construction subject to permits per local, state, and federal laws to confirm this compliance. Specifically, design will include adherence to 2010 California Building Code seismic design provisions, including, but not limited to, Section 1604.10 (wind and seismic detailing), 1605 (Load Combinations), 1613 (Earthquake Loads) and Chapter 18 (Soils and Foundations). Thus, impacts related to seismic ground shaking are considered less than significant.				
iii) Seismic-related ground failure, including liquefaction?	☐	☒	☐	☐
Standard: A significant impact may occur if the proposed project were located in an area identified as having a high risk of liquefaction and appropriate design measures required within such designated areas were not incorporated into the project. Reference: 6 (Seismic Hazard Map, Los Angeles Quad.), 18 (Thresholds E.1)				
Explanation: Liquefaction typically occurs when water-saturated sandy soils are subjected to seismic shaking, causing soils to liquefy and behave as a viscous liquid rather than as a solid. Liquefaction can result in surface subsidence and cause structures to tilt or sink into the surface. The site is located in an area that has been identified as being potentially susceptible to liquefaction by the California Geological Survey Seismic Hazard Zone Maps. As such site specific investigations were undertaken to screen the site for the presence of liquefaction hazards. This investigation and liquefaction triggering evaluations conducted subsequently indicated that there is the possibility that isolated portions of the subsurface may experience liquefaction during the design seismic event. While primarily a concern related to “serviceability” of the proposed structure and unlikely a life safety risk, the potential for liquefaction will require assessment during project design as outlined in				

Issues	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant	No Impact
Mitigation Measure GEO-1, below. **Mitigation Measure GEO-1:** Potential liquefaction hazards shall be mitigated effectively using common place foundation design features which will be incorporated in the design of the final structures as discussed in the geotechnical investigation report. The retaining wall type and foundation system selected during design will control precisely which design features among many possible features will be selected. The process of selection of design features will be "performance-based" in that the project geotechnical engineer and structural engineer will work together to understand the response of the proposed construction to the design seismic event including the effects of liquefaction. Within this framework the performance (i.e. physical damage) of the proposed structures under the anticipated seismic loading including liquefaction will be evaluated. This evaluation will be an iterative process with additional liquefaction mitigation measures (e.g. pile foundations, stiffened structural elements) added as necessary to achieve the desired results.This process will take place in conformance to the with California Building Code seismic design standards. Through this process of evaluation, and with the selection of appropriate structural systems, these potential impacts would be reduced to a less-than-significant level. Reference: 6 (Seismic Hazard Map), 26 (Thresholds E.1) (see discussion in Section IV.)				
iv) Landslides?	☐	☐	☐	☒
Standard: A significant impact may occur if the proposed project were located in a hillside area with soil conditions that would suggest a high potential for sliding and appropriate design measures were not implemented. Reference: 6 (Seismic Hazard Map, Los Angeles Quad.), 18 (Thresholds E.1)				
The project is not within a landslide hazard area identified by the California Department of Conservation. Therefore, construction and operation of the proposed water wheel would have no impact related to landslides.				
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
Standard: A significant impact may occur if the proposed project were to expose large areas to the erosion effects of wind or water for a prolonged period of time. Reference: 18 (Thresholds E.2)				
Explanation: The project site is entirely paved. Construction would include ground-disturbing activities, such as grading and excavation. These activities may result in topsoil erosion at the project site. However, given the short duration of construction, soil exposure would be temporary and applicable Department of Building and Safety erosion control techniques would limit potential erosion. All construction activities would comply with BMPs to prevent erosion or loss of topsoil to wind. In accordance with standard specifications for public works construction and building code requirements, the proposed project would implement SWPPP for erosion and sedimentation control. Construction BMPs would also be undertaken to control runoff and erosion from earthmoving activities. Implementation of such control measures would prevent substantial soil erosion or the loss of topsoil from exposed soils. Therefore, by complying with the SWPPP, impacts related to erosion and debris deposition from runoff would be less than significant.				
c) Be located on a geologic unit or soil that is unstable or would become unstable as a result of the project and potentially result in on- or off-site landslides, lateral spreading, subsidence, liquefaction, or collapse?	☐	☒	☐	☐
Standard: A significant impact may occur if the proposed project were built in an unstable area without proper site preparation or design features to provide adequate foundations for project buildings, thus posing a hazard to life and property. Reference: 6 (Seismic Hazard Map, Los Angeles Quad.), 18				

Issues	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant	No Impact
(Thresholds E.2)				
Explanation: Please see 6(a)(iii) and (iv), above, regarding seismically related ground failure, liquefaction, and landslides. Given the observed lateral heterogeneity of the subsurface at the project site, it appears that liquefaction-induced lateral spreading is not a significant hazard. No continuous liquefiable layer that extends to a free face was identified during the investigation. The discontinuous pockets of potentially liquefiable soil would most likely be restrained by the surrounding, more-resistant pockets. At the proposed foundation levels for the water wheel and tunnel structures, the foundation soils do not consist of uncontrolled fills or natural soils with unstable soil structure and thus are unlikely to susceptible to collapse.				
d) Be located on expansive soil, as defined in Section 1803.5.3 of the California Building Code (2010), creating substantial risks to life or property?	☐	☐	☒	☐
Standard: Not addressed in local CEQA thresholds.				
Explanation: The site specific geotechnical report did not identify the presence of expansive soils on the project site. Soils encountered during the geotechnical investigation were predominately non plastic silty sands. Non plastic soils are generally considered to have "very low" expansion potential. Therefore, impacts from potentially expansive soil would be less than significant.				
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	☒
Standard: A significant impact may occur if the proposed project were built on soils that were incapable of adequately supporting the use of septic tanks or alternative wastewater disposal system and such a system was proposed. Reference: 18 (Thresholds E.3)				
The project area is served by the City's wastewater collection, conveyance, and treatment systems. The proposed project would not require the use of septic tanks or an alternative wastewater disposal system. Therefore, no impact would occur. Reference: 26 (NavigateLA wye map)				
7. GREENHOUSE GAS EMISSIONS – Would the project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐
Standard: Reference: CAPCOA 2008, AB 32				
Explanation: AB 32 identified a 2020 target level for GHG emissions in California of 427 million metric tons (MMT) of CO_2e, which is approximately 28.5% less than the 2020 business-as-usual (BAU) emissions estimate of 596 MMT CO_2e**.** As discussed in Section IV, construction and operation of the project is anticipated to result in GHG emissions that would not exceed the CAPCOA threshold of 900 MT. To put this number into perspective, statewide CO_2e emissions for 2009 were estimated to be 456.8 MMT. Impacts would be less than significant. No mitigation measures would be required Reference: 37 (Air Quality Report, 2012), CAPCOA. See discussion in Section IV.				
b) Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☒	☐
Standard: 42. (AB 32)				

Issues	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant	No Impact
Explanation: The proposed project would not conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of GHGs; therefore, impacts would be less than significant (see discussion in Section IV).				
8. HAZARDS AND HAZARDOUS MATERIALS – Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐
Standard: A significant impact may occur if the proposed project involved the use or disposal of hazardous materials as part of its routine operations and would have the potential to generate toxic or otherwise hazardous emissions. Reference: 18 (Thresholds F.1, F.2)				
Explanation: The proposed project would involve the construction and operation of a water wheel and appurtenant structures for the transport of water from the Los Angeles River. Construction of the proposed project would require up to 5,515 cubic yards of soil and asphalt to be removed as result of the proposed project. It is likely that most of the asphalt, which is not considered to be a hazardous material, would be recycled. During construction, hazardous materials, including petroleum fuels and oils for construction equipment, would be used. The release of these materials could occur through spills or from runoff during storm events; however, with adherence to applicable regulations, such occurrences would not pose a substantial risk. Any construction and operation activity would comply with applicable laws and regulations related to the use, transport, or disposal of hazardous materials. Operation of the proposed project would not involve the routine use, transport, or disposal of any hazardous materials. However, the proposed project would include treatment of the diverted water and a storage tank. Water would be screened to remove debris at the intake tunnel inlet; water lifted by the wheel would flow to a concrete box commonly used for sediment; trash removal and additional screening for debris would take place prior to UV treatment. Any small amounts of sediment or trash that remain would be removed manually or by vacuum truck. The treatment system, storage tank, and associated piping and equipment would comply with applicable leak detection, monitoring, and construction and operation codes, and would conform to the City's fire codes to prevent significant hazards to the public or the environment. Additionally, minor maintenance of the water wheel, such as oil changes, would be performed. All materials would be handled in accordance with all applicable regulations to prevent significant hazards to the public and environment. Therefore, construction and operation activities would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials, and impacts would be less than significant.				
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☒	☐
Standard: A significant impact may occur if the proposed project involved a risk of accidental explosion or utilized substantial amounts of hazardous materials as part of its routine operations that could potentially pose a hazard to the public under accident or upset conditions. Reference: 15 (GeoTracker), 16(LAMC), 18 (Thresholds F.1, F.2), 33 (USGS Los Angeles Quad)				
Explanation: The proposed project does not involve the use, transport, or disposal of any hazardous materials. Refer to discussion under 8(a), above.				
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or	☐	☐	☐	☒

Issues	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant	No Impact
proposed school?				
Standard: A significant impact may occur if the proposed project were located within 0.25 mile of an existing or proposed school site and were projected to release toxic emissions which pose a hazard beyond regulatory thresholds. Reference: 18 (Thresholds F.2)				
Explanation: There is no school within 0.25 mile of the project site. The closest school is Cathedral High School, which is approximately 0.5 mile from the project site. The project site does not contain hazardous or acutely hazardous materials, substances, or waste. Construction and operation of the project would not involve substantial quantities of hazardous or acutely hazardous materials, substances, or waste. No impact would occur. Reference: 15 (GeoTracker), 13 (EnviroStor), 26 (NavigateLA Schools)				
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒
Standard: Reference: 18 (Thresholds F.2)				
Explanation: A search of available environmental records was conducted on June 19, 2012, by EDR for the address 1745 North Spring Street, Los Angeles, CA 90012. The project site was not listed in any of the databases searched by EDR. Furthermore, the project site is not listed in the State Water Resources Control Board GeoTracker system, which includes leaking underground fuel tank sites and the Spills, Leaks, Investigations, and Cleanups Program; or the Department of Toxic Substances Control EnviroStor Data Management System, which includes Cortese sites; or the Environmental Protection Agency's database of regulated facilities. No impact would occur as a result of construction and operation of the project on the site. Reference: 16 (GeoTracker), 13 (EnviroStor), 37 (EPA Registry)Reference: 16 (GeoTracker), 13 (EnviroStor), 37 (EPA Registry)				
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
Standard: A significant impact may occur if the proposed project site were located within a public airport land use plan area, or within two miles of a public airport, and would create a safety hazard. Reference: 18 (Thresholds F.1, K.2)				
Explanation: The project site is located approximately 12 miles from Bob Hope Airport. The project is not located within an airport land use plan or within two miles of a public airport. Construction and operation of the proposed project would not pose a safety hazard with respect to air traffic. No impact would occur. Reference: 22 (ZIMAS), 27 (NavigateLA)				
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
Standard: A significant impact may occur if the project would result in a safety hazard for people residing or working in the project area because of its location near a private airstrip. Reference: 18 (Thresholds F.1, K.2)				

Issues	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant	No Impact
Explanation: No private airstrip is located within the vicinity of the project site. No impact would occur as a result of construction or operation of the project. Reference: 27 (NavigateLA)				
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
Standard: A significant impact may occur if the proposed project were to substantially interfere with roadway operations used in conjunction with an emergency response plan or evacuation plan or would generate sufficient traffic to create traffic congestion that would interfere with the execution of such plan. Reference: 18 (Thresholds F.1, K.2)				
Explanation: The proposed project would not alter the adjacent street system. As applicable, any traffic detour plans during construction would address emergency response or emergency evacuation. Furthermore, project design would ensure that the water surface elevation during flood conditions is not altered (as modeled with the USACE's HEC-RAS model, which is what the FEMA uses to establish their flood hazard areas). Therefore, the proposed project would not interfere with any emergency response plans established by FEMA in the river flood plain, and FEMA review of project plans would not be required. No impact on emergency services would occur as a result of construction and operation of the project.				
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☐	☒
Standard: A significant impact may occur if the proposed project were located in a wildland area and posed a significant fire hazard, which could affect persons or structures in the area in the event of a fire. Reference: 18 (Thresholds K.2)				
Explanation: The project site is not located in an area considered a Very High Fire Hazard Severity Zone. Construction and operation of the proposed project would have no impact with respect to wild land fires. Reference: 30 (Fire Code Amendments), 22 (ZIMAS)				
9. HYDROLOGY AND WATER QUALITY – Would the project:				
a) Violate any water quality standards or waste discharge requirements?	☐	☒	☐	☐
Standard: A significant impact may occur if the proposed project discharged water that did not meet the quality standards of agencies that regulate surface water quality and water discharge into storm-water drainage systems. Reference: 18(Thresholds G.2)				
Explanation: *Construction* The greatest potential to violate water quality standards or degrade water quality during construction would result from discharges of soil, spills or other constituents directly into the river, uncontrolled runoff of contaminated stormwater into the river, and discharges of contaminated water from dewatering into the river. Construction would be in and adjacent to the river channel. Consequently, there is a potential for siltation and sedimentation in the river channel from earthwork associated with construction. There is also the potential that fuel leaks and spills from construction equipment could enter the waterway. In areas of active construction, soil erosion may also result in discharges of sediment-laden stormwater runoff into receiving waters if not properly controlled. Additional sediment input to the downstream surface water bodies from construction of the proposed project could contribute to degradation of downstream water quality and impairment of beneficial uses. Sediment can also be a carrier for other pollutants, such				

Issues	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant	No Impact

as heavy metals, nutrients, pathogens, oil and grease, fuels, and other petroleum products. In addition to sediment, other pollutants associated with the various phases of construction, such as trash, paint, solvents, sanitary waste from portable restrooms, and concrete curing compounds, can discharge into and impair receiving waters if released during construction. Therefore, construction-period activities could generate stormwater runoff that may cause or contribute to a violation of water quality standards or waste discharge requirements, provide substantial additional sources of polluted runoff, or otherwise substantially degrade the receiving water quality.

The General Construction Permit includes conditions and requirements with the specific purpose of minimizing the discharge of contaminants from a construction site into surface and ground water.

Measures would also be implemented to protect receiving waters from dewatering and construction related non-stormwater discharges. Such discharges would be implemented in compliance with the Los Angeles RWQCB's General WDRs under Order No. R4-2008-0032 (NPDES No. CAG994004) governing construction-related dewatering discharges within the project development areas. Typical BMPs for construction dewatering include infiltration of clean groundwater, onsite treatment using suitable treatment technologies, onsite sanitary sewer discharge or transport off site with local sewer district approval, or use of a sedimentation bag for small volumes of localized dewatering.

Implementing specific measures highlighted in mitigation measure HYD-1 would mitigate impacts that could result in violation of water quality standards or waste discharge requirements from project construction to a less-than-significant level.

Operation

The proposed project would result in a new side channel carrying river water through the proposed project site. The operation of the proposed project could change pollutant load through alteration of stormwater chemistry due to a change in land use. The property is currently being used for maintenance of Metro vehicles. While some maintenance would be required during the operation of the wheel and the water treatment system, it is expected to be less frequent than current maintenance activities, with fewer vehicles entering and exiting the site. This could potentially decrease the load of metals and petroleum hydrocarbons in stormwater runoff.

Additionally, the 80 gallons per minute of water in the LA River that gets pumped out of the channel by the Water Wheel would undergo filtration and UV treatment to remove particles and pathogens. The water would be treated to level to allow it to be safely used for spray irrigation. As such, conditions resulting in a violation of water quality standards or waste discharge requirements are not expected as a result of the proposed project. The following mitigation measure will serve to reduce potential hydrology and water quality impacts associated with the project to a less-than-significant level:

Mitigation Measure HYD-1: Consistent with the requirements of the statewide Construction General Permit, the project applicant shall prepare and implement a SWPPP designed to reduce potential adverse impacts on surface water quality through the project construction period. The SWPPP shall be designed based on the assessed Project Risk Level to address the following objectives: (1) all pollutants and their sources, including sources of sediment associated with construction, construction site erosion, and all other activities associated with construction activity are controlled; (2) where not otherwise required to be under a RWQCB permit, all non-stormwater discharges are identified and eliminated, controlled, or treated; (3) site BMPs are effective and result in the reduction or elimination of pollutants in stormwater discharges and authorized non-stormwater discharges from construction activity to the Best Available Technology/Best/Best Conventional Pollutant Control Technology (BAT/BCT) standard; (4) calculations and design details as well as BMP controls for site run-on are complete and correct; and (5) stabilization BMPs installed to reduce or eliminate pollutants after construction are completed.

The SWPPP shall be prepared by a Qualified SWPPP Developer. The SWPPP shall include the minimum BMPs required for the assessed Project Risk Level. The Project Risk Level would be

Issues	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant	No Impact
determined as part of the Notice of Intent for coverage under the Construction General Permit. These include: BMPs for erosion and sediment control, site management/housekeeping/waste management, management of non-stormwater discharges, infiltration and runoff controls, and BMP inspection/maintenance/repair activities. The SWPPP shall include a construction site monitoring program that identifies requirements for dry weather visual observations of pollutants at all discharge locations and, as appropriate (depending on the Risk Level), sampling of the site effluent and receiving waters (receiving water monitoring is only required for some Risk Level 3 dischargers). A Qualified SWPPP Practitioner shall be responsible for implementing the BMPs at the site and performing all required monitoring and inspection/maintenance/repair activities. If the project is Risk Level 2 or 3, the project applicant shall also prepare a Rain Event Action Plan as part of the SWPPP. The following are the types of BMPs that shall be implemented for the proposed project: • Erosion Control BMPs • Sediment Control BMPs • Wind Erosion Control BMPs • Tracking Controls • Non-Stormwater Controls • Waste Management and Materials Pollution Control BMPs				
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☐	☒
Standard: A project would normally have a significant impact on groundwater supplies if it were to result in a demonstrable and sustained reduction of groundwater recharge capacity or change the potable water levels sufficiently that it would reduce the ability of a water utility to use the groundwater basin for public water supplies or storage of imported water, reduce the yields of adjacent wells or well fields, or adversely change the rate or direction of groundwater flow. Reference: 18 (Thresholds G.2, G.3)				
Explanation: Dewatering activities may be required during excavation both for the side channel in the LA River and the Water Wheel housing pit. However, this activity would remove only shallow groundwater for a short period of time during construction of the proposed project and would not affect groundwater supplies that are drawn from deeper segments of the aquifer. The proposed project site overlays the Central Los Angeles groundwater basin. Redeveloping the mostly paved site would not affect recharge as natural recharge to the basin. Consequently there would be no impact on groundwater supplies.				
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation on- or off-site?	☐	☐	☒	☐
Standard: A significant impact may occur if the proposed project resulted in a substantial alteration of drainage patterns that resulted in a substantial increase in erosion or siltation during construction or operation of the project. Reference: 18 (Thresholds G.1, G.2)				

Issues	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant	No Impact
Explanation: During construction of the proposed project, construction activities would result in land-disturbing activities such as demolition of existing pavement, excavation, and trenching for utility infrastructure installation. These types of construction activities could result in minor temporary alterations of drainage patterns that expose soil to increased rates of erosion during construction periods. These minor alterations to drainage patterns would not result in significant erosion or siltation on- or off site, with the implementation of mitigation measure HYD-1. Post-construction (e.g., operational)—though a new side channel to the river would be present on the project site, the overall drainage patterns would not be greatly altered from their current state. The post-construction flows through the side channel would not substantially increase rates of erosion or siltation. Additionally erosion from stormwater runoff would not increase because the impermeable area of the site would remain the same or be reduced. Impacts would be less than significant.				
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site?	☐	☐	☒	☐
Standard: A significant impact may occur if the proposed project resulted in increased runoff volumes during construction or operation of the proposed project that would result in flooding conditions affecting the project site or nearby properties. Reference: 18 (Thresholds G.1)				
Explanation: As stated above, the proposed project would not substantially change the current drainage pattern or increase runoff volume. The flows to the existing stormwater drainage system would stay the same or slightly decrease, so the capacity of the existing system would not be exceeded as a result of the proposed project. There are no new stormwater pollution sources associated with the project, so the proposed project would not result in substantial additional polluted runoff. Therefore, proposed project impacts associated with stormwater quantity and quality would be less than significant.				
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☒	☐
Standard: A significant impact may occur if the volume of runoff were to increase to a level that exceeded the capacity of the storm drain system serving a project site. A significant impact may also occur if the proposed project would substantially increase the probability that polluted runoff would reach the storm drain system. Reference: 18(Thresholds G.2)				
Explanation: See item 9 (d) above				
f) Otherwise substantially degrade water quality?	☐	☒	☐	☐
Standard: A significant impact may occur if a project included potential sources of water pollutants and potential to substantially degrade water quality. Reference: 18 (Thresholds G.3)				
Explanation: See item 9(a), above				
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	☒
Standard: A significant impact may occur if the proposed project places housing within a 100-year flood zone. Reference: 18 (Thresholds G.1 to G.4)				

Issues	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant	No Impact
Explanation: The water wheel site is located within FEMA unshaded Zone X (Reference: 34), which is defined as an area outside the 0.2% annual chance floodplain (i.e., 500-year floodplain). However, the diversion site, being within the LA River, which is designed as a flood control channel, is by necessity within a Special Flood Hazard Area subject to a 1% annual chance of flooding. The proposed project would involve construction and operation of a water wheel and the appurtenant structures required to divert water from the LA River and therefore would not place housing in a 100-year flood hazard area. Consequently, there would be no impact. Reference: 36 (FIRM 060137 Panel 1628 F)				
h) Place within a 100-year flood hazard area structures that would impede or redirect floodflows?	☐	☐	☒	☐
Standard: A significant impact may occur if the proposed project were located within a 100-year flood zone and would impede or redirect floodflows. Reference: 18 (Thresholds G.4)				
Explanation: No structures associated with the proposed project would be located in the 100-year flood hazard area other than the inflatable dam and new side channel that would connect to the LA River, The inflatable dam that would be placed in the LA River as part of the proposed project would be designed to pool water during low flow conditions. When storms are predicted to occur in the contributing area to the proposed project site, programmed controls would automatically lower the dam and release stored water so that floodflows can pass unimpeded with no impact on the pre-project water surface elevations. Controls would be programmed to have redundancy to ensure the dam is in the lowered position when elevated river flows reach the area of the proposed project site. All proposed designs would be approved by the USACE through the Section 408 permit process. It is anticipated that the proposed project would qualify for a Minor 408 because it is not expected to permanently alter the hydraulic capacity of the LA River. As part of the permitting process, USACE's existing HEC-RAS model, which is used by FEMA to determine flood hazard areas, would be used to evaluate all channel alterations, thereby ensuring that they would not result in changes to the water surface elevation during flood conditions. Potential impacts related to impeding or redirecting floodflows would be less than significant. Reference: 27 (NavigateLA)				
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☒	☐
Standard: A significant impact may occur if the proposed project were located in an area where a dam or levee could fail, exposing people or structures to significant risk of loss, injury or death. Reference: 18 (Thresholds E.1, G.3)				
Explanation: The proposed project is located at the edge of a dam failure inundation zone. This is not expected to create a significant risk for visitors to the site because inundation depths are shallower at the borders of inundation areas and areas outside of the inundation area are within less than 0.5 mile of the project site in a direction that is easily accessible by foot. The structures that would be installed within the dam failure inundation area could sustain flood damage in the event of a dam failure. The water wheel structure would be exposed to water during operations, and the damage to this structure from being exposed to flood waters would likely be minor. Ancillary buildings and facilities could sustain water damage during a flood event. These structures would not be considered critical infrastructure and this impact would be considered less than significant. Reference: Safety Element				

Issues	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant	No Impact
j) Inundation by seiche, tsunami, or mudflow?	☐	☐	☒	☐
Standard: A significant impact may occur if the proposed project were located in an area with inundation potential due to seiche, tsunami, or mudflow. Reference: 18 (Thresholds E.1)				
Explanation: Seiches are large surface waves generated in enclosed bodies of water (including human-made water storage facilities) in response to ground shaking. As discussed in 9(i), above, the project site is located at the edge of a dam-failure inundation zone, which could be inundated as result of dam failure. The risk of a seiche threatening the proposed project is remote because of the distance that separates the project site from an enclosed water body capable of producing a seiche, and construction and operation of the water wheel would not increase this risk. Impacts related to seiches would be less than significant. The proposed project site would not be affected by tsunamis or mudflows given its considerable distance from the ocean (greater than 20 miles) and landslide-prone areas (greater than 2 miles), respectively. No impact would occur. Reference: 20 (Safety Element)				
10. LAND USE AND PLANNING – Would the project:				
a) Physically divide an established community?	☐	☐	☐	☒
Standard: A significant impact may occur if the proposed project were sufficiently large or otherwise configured in such a way as to create a physical barrier within an established community. Reference: 18 (Thresholds H.2)				
Explanation: The proposed project involves the construction and operation of a water wheel and appurtenant structures required to divert water from the LA River. No changes to surrounding land uses and no barriers that would divide the community are proposed. Additionally, a goal of the proposed project is to enhance pedestrian connections between the surrounding community, the State Park and the LA River,. Therefore, implementation of the proposed project would connect communities rather than divide them. No impact would occur.				
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☒
Standard: A significant impact may occur if the proposed project were inconsistent with the General Plan, or other applicable plan, or with the site's zoning if designated to avoid or mitigate a significant potential environmental impact. Reference: 18 (Thresholds H.1, H.2)				
Explanation: The Central City North Community Plan component of the general plan for the City of Los Angeles regulates the land uses in the project area and designates the project area for Public Facilities. The proposed project would be consistent with the Community Plan's stated goals and objectives related to public facilities, including park and recreation facilities, which are: 1. To utilize the location, characteristics, and timing of public facility and utility development as a tool in achieving planned land use patterns. 2. To conserve, maintain and better utilize existing recreation and park facilities that promote the recreational needs of the community. 3. Improve the utilization and development of recreational facilities at existing parks. 4. Pursue resources to clean up and activate land that could be used for public recreation.				

Issues	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant	No Impact

The land use designations of the project site are Public Facilities, with corresponding zoning of PF-1XL, and Open Space, with the corresponding zoning of OS-1XL. Such zoning allows public facility uses as well as joint public and private development uses in even the most restrictive adjoining zones, including the adjacent OS zone. This zone allows recreational facilities by right, including aesthetic recreational installations. Certain public service uses in the PF zone are allowed by CUP only, including appurtenant structures adjacent to covered and uncovered reservoirs, such as water treatment facilities, water pumping facilities, water distribution facilities, and water filtration plants. The utilitarian functions of the proposed project (i.e., to divert and convey water as well as provide natural water treatment for non-potable park use) are not proposed at the scale or intensity that would require approval by CUP. Therefore, the proposed project would be consistent with land use plans and policies, and a less-than-significant impact would occur.

The proposed project is also consistent with the Los Angeles River Revitalization Master Plan's recommendations, including the proposed placement of inflatable rubber dams along the river for aesthetic and/or recreational purposes where prudent. Further, the proposed project is consistent with the following goals of the Master Plan:

1. Connect Neighborhoods to the River.
2. Extend Open Space, Recreation, and Water Quality Features into Neighborhoods.
3. Enhance River Identity.
4. Incorporate Public Art Along the River.
5. Make the River the Focus of Activity.
6. Provide Opportunities for Educational and Public Facilities.
7. Celebrate the Cultural Heritage of the River.

Further, the proposed project is consistent with the Cornfield Arroyo Seco Specific Plan. The Land Use designation of the project site under the Specific Plan (Subarea 1, block 21B) is Public Facility, and the Zoning District is Greenway Zone. The floor area ration (FAR) limit is 1.5:1. The proposed project is wholly in keeping with the goals and objectives of the Specific Plan as well as the expressed purposes under Administration and Open Space. There is a provision for an Administrative Clearance for certain projects, and the project would conform to Section 1.2 C 2 h of the Specific Plan, which reads:

> Projects with less than 50,000 gross square feet of nonresidential floor area, that conform to the provisions contained in Sections 2.1-2.8 of this Plan and that do not require an Allocation of Floor Area Rights and are not located on a block identified in the Maximum Block Length Map that requires the introduction of a paseo.

The project is consistent with the following goals of the Plan to:

1. Transform an underserved and neglected vehicular-oriented industrial and public facility area into a cluster of mixed-use, pedestrian-oriented and aesthetically pleasing neighborhoods.
2. Increase access to open space.
3. Re-connect historical communities.
4. Reduce the use of energy and potable water, improve the ecology surrounding the Los Angeles River Watershed and Arroyo Seco, create connections from the community to the River and Arroyo Seco, and support the Los Angeles River Revitalization Master Plan (LARRMP).
5. Provide places for people to socialize, including parks, sidewalks, courtyards and plazas that are combined with shops and services.
6. Provide adequate public recreational open space within walking distance of residents and employees, and to integrate public are and contribute to the civic and cultural life of the City.

The project may require a minor subdivision application to transfer land ownership from the current

Issues	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant	No Impact
property owner to the applicant. This application would be solely for the purpose of sale/transfer of title to the land and would not involve any future plans to redevelop the property. Therefore, no land use impact is anticipated with respect to this application. See discussion in Section IV. Reference: 20 (ZIMAS), 18 (General Plan), Add citations for Los Angeles River Revitalization Master Plan and Cornfield Arroyo Seco Specific Plan				
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	☒
Standard: A significant impact may occur if the proposed project were located within an area governed by a habitat conservation plan or natural community conservation plan and would conflict with such plan. Reference: 18 (Thresholds H.1, H.2)				
Explanation: Please see the discussion for Item 4(f), above. No impact would occur.				
11. MINERAL RESOURCES – Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
Standard: A significant impact may occur if the project were located in an area used or available for extraction of a regionally important mineral resource, if the project converted an existing or potential present or future regionally important mineral extraction use to another use, or if a project affected access to such a site. Reference: 18 (General Plan), 18 (Thresholds E.4)				
Explanation: The project site is not located within a Mineral Resource Zone (MRZ)-2 zone, which indicates the inclusion of known mineral deposits. As described in the Conservation Element of the general plan, the primary mineral resources within the city are rock, gravel, and sand deposits, and the only available deposit site within the city is the Tujunga alluvial fan, which is more than 10 miles from the project site. The project site is not located within an area known to contain mineral resources, and no impacts with respect to mineral resources would occur as a result of construction and operation of the proposed project.				
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒
Standard: A significant impact may occur if a project were located in an area used or available for extraction of a locally important mineral resource and the project converted such a resource to another use or affected access to such a site. Reference: 18 (General Plan), 18 (Thresholds E.4)				
Explanation: As discussed in Item 11(a), above, the only available mineral resource extraction area is the Tujunga alluvial fan, which is more than 10 miles from the project site. Construction and operation of the proposed training facility would have no impact with respect to the availability of mineral resources.				
12. NOISE – Would the project result in:				
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☒	☐
Standard: A significant impact may occur if the project generated noise levels exceeding the standards for ambient noise as established by the General Plan and Municipal Code or exposed persons to that increased level of noise. Reference: 18 (General Plan Noise Element), 18 (Thresholds Section I)				

Issues	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant	No Impact

The following are brief definitions of noise terminology used in this evaluation:

- Sound. A vibratory disturbance created by a vibrating object, which, when transmitted by pressure waves through a medium such as air, is capable of being detected by a receiving mechanism, such as the human ear or a microphone.
- Noise. Sound that is loud, unpleasant, unexpected, or otherwise undesirable.
- Decibel (dB). A unitless measure of sound on a logarithmic scale, which indicates the squared ratio of sound pressure amplitude to reference sound pressure amplitude. The reference pressure is 20 micropascals.
- A-Weighted Decibel (dBA). An overall frequency-weighted sound level in decibels, which approximates the frequency response of the human ear.
- Equivalent Sound Level (L_{eq}). The average of sound energy occurring over a specified period. In effect, L_{eq} is the steady-state sound level that in a stated period would contain the same acoustical energy as the time-varying sound that occurs during the same period.
- Maximum Sound Level (L_{max}). The maximum sound level measured during a measurement period.

Explanation: The proposed project would result in increased noise levels associated with excavation and installation of project components, which could result in increased noise levels at nearby sensitive receivers. The Bureau of Engineering Standard Project Specifications for public works construction is designed to comply with the City's General Plan Noise Element and related Municipal Code Noise Ordinance. Construction of the proposed project would take approximately 8 months to complete.

The proposed project would most likely result in temporary increases in ambient noise levels in the local community during construction. The loudest maximum noise levels would occur during periods of pile driving at the water wheel site, which can produce noise levels of up to 101 dBA at a distance of 50 feet (Reference: 46). Apart from periods of pile driving, the three loudest equipment noise sources at the project site would include a crane, a loader, and a dump truck. The loudest equipment type among these is a dump truck, which typically produces a maximum sound level of 88 dBA at 50 feet. Loaders typically produce a maximum sound level of 85 dBA, and cranes produce a level of 83 dBA at 50 feet (Reference: 46). Accounting for typical equipment utilization factors (i.e., each piece of equipment would typically operate for 40% of a given hour) (Reference: 54), the predicted combined sound level of the equipment operating simultaneously is 87 dBA L_{eq}(1 hour) at 50 feet. The nearest building façade belongs to an art studio complex, which is associated with commercial use. Construction noise levels at the building façade nearest to the project site could be up to 80 dBA L_{max} during water wheel site and dam construction and up to 93 dBA Lmax during periods of pile driving. However, noise from construction would be temporary, intermittent, and would cease once work is complete. During construction, the noise environment at park locations located on the other side of the LA River would be overshadowed by noise from local traffic. Additional traffic associated with workers' trips and construction equipment deliveries to and from the site would not result in a noticeable increase in traffic noise levels in the surrounding area.

There are no residences located within 500 feet of the project site, so standards in the City municipal code for maximum allowable construction noise levels in residential areas would not be exceeded, and there would be no impact at residences in the local area. Because of the temporary nature of site construction and because the proposed project would not affect nearby residential areas, this noise impact would be less than significant. See discussion in Section IV.

b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐

Standard: A significant impact may occur if the project were to expose persons to or generate excessive groundborne vibration or groundborne noise levels. Reference: 18 (General Plan Noise Element), 18 (Thresholds Section I)

Issues	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant	No Impact
Explanation: Construction activities associated with the project could generate groundborne vibration from impact pile driving and the use of heavy equipment, including a TBM. Groundborne vibration could be intermittently perceptible in commercial structures adjacent to the project site. These effects would be temporary and short-term, and would cease once project work is complete. Based on available TBM vibration data from L.A. area measurements, groundborne vibration levels during TBM operations for an average tunnel depth of 50 feet were well below the threshold of impact for TBM operation (0.04 inch per second peak particle velocity [ppv]) (City of Los Angeles 2005). Therefore, groundborne vibrations from the TBM for the project are generally anticipated to be below the threshold for a significant impact. Groundborne vibration levels associated with impact pile driving could exceed the vibration threshold associated with non-engineered timber and masonry buildings (0.2 inch per second ppv) at locations within 75 feet of pile driving sites (Reference: 46). Construction, including excavation and truck loading activities associated with the operation of heavy equipment at the project site may generate localized groundborne vibration and noise. However, vibration from non-impact construction activity is typically below the threshold of perception when the activity is more than about 50 feet from the receiver. The nearest building façade is approximately 100 feet away from the water wheel site, and the nearest residence is more than 500 feet away from the project site. Because groundborne vibration from construction would not exceed building damage thresholds and would not result in perceptible vibration at local residences, this impact is considered to be less than significant.				
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☒	☐
Standard: A significant impact may occur if the project were to substantially and permanently increase the ambient noise levels in the project vicinity above levels existing without the proposed project. Reference: 18 (General Plan Noise Element), 18 (Thresholds Section I)				
Explanation: Refer to the discussion under 12(a), above. A building located adjacent to the dam would house two compressors and supply air to inflate the dam and/or operate dam gates during times of low water flow in the LA River. At a distance of 50 feet, the noise level during operation of the compressors would be 63 dBA at 50 feet (assuming 20 dB of nominal noise attenuation from the building). A level of this magnitude would most likely be overshadowed by existing ambient noise at the nearest building façade. Water sounds from the water wheel may be audible in the ambient noise environment once the project is complete. The proposed project is not anticipated to generate enough additional traffic to result in a noticeable increase in noise levels at surrounding receivers. Impacts related to permanent increases in ambient noise would be less than significant.				
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☒	☐
Standard: A significant impact may occur if the project were to create a substantial temporary or periodic increase in the ambient noise levels in the project vicinity above levels existing without the proposed project. Reference: 18 (General Plan Noise Element), 18 (Thresholds Section I)				
Explanation: Please refer to the discussion for 12(a), above. Construction of the proposed project would temporarily increase noise levels in the immediate area of the project site but would comply with the Bureau of Engineering Standard Project Specifications for Public Works Construction. There are no residences within 500 feet of the project site that would be affected by the temporary increase in noise levels. Operationally, the use of the proposed water wheel would not introduce a temporary and periodic noise increase at neighboring sites. Therefore, noise impacts from the construction and operation of the proposed project are considered to be less than significant.				

Issues	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant	No Impact
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒
Standard: Reference: 18 (Thresholds Section I), 26 (NavigateLA)				
Explanation: The project site is located approximately 12 miles from Bob Hope Airport. It does not lie within the airport master plan area. Because the proposed project site would not be located within 2 miles of an airport and there are no sensitive receptors in the immediate area, it would not expose residents or workers in the area to airport noise in addition to the construction noise that would occur as a result of the project. No impact would occur.				
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒
Standard: Reference: 18 (Thresholds Section I), 26 (NavigateLA)				
Explanation: No private airstrips are located within the vicinity of the project site. Therefore, no construction or operational impacts would occur.				
13. POPULATION AND HOUSING – Would the project:				
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☒	☐
Standard: A significant impact may occur if population growth is induced in an area, either directly or indirectly, such that the population of the area may exceed the planned population of that area. Reference: 18 (Thresholds Section J.1)				
Explanation: The proposed project involves the construction and operation of a water wheel and appurtenant structures required to divert water from the LA River. The project would not include the construction of homes or businesses. Therefore, the proposed project would not directly increase the project area's population. However, an objective of the project is to encourage revitalization of the area through environmentally friendly artistic improvements, and, therefore, the project could indirectly induce business development and population growth. This indirect effect, however, is expected to be less than significant.				
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
Standard: Normally, there would be no significant impact if the project will not result in a net loss of 15 single-family dwellings or 25 dwellings in multi-family housing. Reference: 18 (Thresholds J.1 and J.2)				
Explanation: The proposed project would not displace any housing because no housing is currently located on the project site. Therefore, no impact would occur.				
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
Standard: Normally, there would be no significant impact if the project will not result in a net loss of 15 single-family dwellings or 25 dwellings in multi-family housing. Reference: 18 (Thresholds J.2)				
Explanation: The proposed project would not displace any people or create a need for housing elsewhere because no people or housing are currently located on the project site. Therefore, no operational or construction impacts related to replacement housing would occur.				

Issues	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant	No Impact
14. PUBLIC SERVICES –				
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
i) Fire protection?	☐	☐	☐	☒
Standard: A significant impact may occur if the City of Los Angeles Fire Department (LAFD) could not adequately serve the proposed project based on response time, access, or fire hydrant/water availability. Reference: 18 (Thresholds K.2)				
Explanation: The project site is served by LAFD Battalion 2 at Station No. 1, located at 2230 Pasadena Avenue, approximately 0.5 mile to the north. The proposed project would not result in an increase in population and thus would not generate a need for new or altered fire protection facilities. The proposed project would be constructed in accordance with all applicable fire codes set forth by the state Fire Marshall and LAFD. Therefore, the proposed project would not be considered a fire hazard and would not exceed the capacity of LAFD with respect to serving the site or other areas with existing fire protection services. The nearest local fire responders would be notified, as appropriate, of traffic control plans during construction so as to coordinate emergency response routing during construction work. Construction and operation of the proposed project would not create hazards that would increase the need for fire protection. Therefore, no impacts would occur.				
ii) Police protection?	☐	☐	☐	☒
Standard: A significant impact may occur if the proposed project were to result in an increase in demand for police services that would exceed the capacity of the police department responsible for serving the site. Reference: 18 (Thresholds K.1)				
Explanation: The project site is served by the Los Angeles Police Department's (LAPD's) Central Division, Central Community Police Station, located at 251 East 6th Street. Typically, demand for additional police protection is created when there is an increase in the residential population in an area. The proposed project would not require additional police protection beyond what is currently provided in the area because there would be no population growth. The nearest local police station would be notified, as appropriate, of traffic control plans to coordinate emergency response routing during construction work. During project operation, an increase in calls to police is not anticipated. Therefore, no impact would occur as a result of construction or operation of the project.				
iii) Schools?	☐	☐	☐	☒
Standard: A significant impact may occur if the proposed project includes substantial employment or population growth that could generate demand for school facilities that exceeded the capacity of the school district responsible for serving the project site. Reference: 18 (Thresholds K.3)				
Explanation: The project site is located within approximately 0.5 to 1 mile of two schools: Cathedral High School and Sacred Heart High School. The proposed project does not include a housing component, and it would not increase employment. The proposed project would not induce growth directly or indirectly and therefore would not increase the demand for schools in the area. Construction and operation of the proposed project would not directly or indirectly increase student enrollment levels. No impacts would occur.				

Issues	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant	No Impact
iv) Parks?	☐	☐	☐	☒
Standard: A significant impact may occur if recreational and park services could not accommodate the population increase resulting from implementation of the proposed project. Reference: 18 (Thresholds K.4)				
Explanation: As expressed in 14(a)(1)–14(a)(3), the proposed project would not induce growth and would not strain park services through direct or indirect means. No impact would result from construction and operation of the proposed project.				
v) Other public facilities?	☐	☐	☐	☒
Standard: Projects that do not result in a net increase of 75 residential units normally would not have a significant impact on public libraries. Reference: 18(Thresholds K.5)				
Explanation: The project would not result in a net increase of 75 residential units or more. Construction and operation of the proposed project would result in no impact on other public facilities.				
15. RECREATION –				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☒	☐
Standard: A significant impact may occur if the proposed project includes substantial employment or population growth that may generate demand for public park facilities that exceed the capacity of existing parks. Reference: 18 (Thresholds K.4)				
Explanation: The proposed project would not result in an increase in population (see 13, above). As discussed for 14, above, the project would neither induce population growth by providing housing nor increase long-term employment. The proposed water wheel has the potential to become a new public art focal point for sightseers when visiting the bridge. This may result in a minimal amount of new visitors to the adjacent park. However, the proposed project itself would not significantly increase demand on park services. Current users of the State Park facility may be affected during construction of the proposed project. The effect would be considered temporary and therefore less than significant.				
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?	☐	☐	☐	☒
Standard: Reference: 18 (Thresholds K.4)				
Explanation: The proposed project would not include or require a recreational facility. No impact would occur.				
16. TRANSPORTATION/TRAFFIC – Would the project:				
a) Conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation, including mass transit and non-motorized travel and relevant components of the circulation system, including, but not limited to, intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	☐	☐	☒	☐
Standard: A significant impact may occur if the proposed project causes an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system. Reference: 18 (Thresholds L.1 to L.4, L.8)				

Issues	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant	No Impact
Explanation: Construction activity would generate short-term construction-related vehicles; however, given the relatively short duration of the construction period and small scale of the construction work, construction of the project would not cause a substantial increase in construction traffic that would significantly reduce the effectiveness of the transportation network in the vicinity of the project. In addition, the applicant is committed to implement the construction traffic control as required by the Work Area Traffic Control Handbook (Reference 2). Therefore, traffic impacts related to construction of the proposed project would be less than significant. Operation of the project may generate a small amount of traffic from water wheel visitors; however, given the existing traffic flow and adjacent uses along Baker Street, the small increase in traffic volumes would not reduce the overall effectiveness of the transportation network. Impacts associated with operation of the proposed project would be less than significant (see discussion in Section IV).				
b) Conflict with an applicable congestion management program, including, but not limited to, level-of-service (LOS) standards and travel demand measures or other standards established by the county congestion management agency for designated roads or highways?	☐	☐	☒	☐
Standard: A significant impact may occur if the proposed project causes a conflict with an applicable congestion management program. Reference: 18 (Thresholds L.1 to L3)				
Explanation: The roadways immediately surrounding the project site are not included in Metro's 2010 CMP. The relatively small number of trips that would be generated under the proposed project would occur primarily in non-peak periods. Therefore, impacts related to congestion and levels of service would be less than significant during both construction and operation of the proposed project.				
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☐	☐	☒
Standard: A significant impact may occur if the proposed project changes air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks.				
Explanation: The proposed project would not include a heliport. The project site is located approximately 10 miles from the nearest airport. Therefore, no impact on air traffic patterns would occur.				
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
Standard: A significant impact may occur if the proposed project substantially increases road hazards due to a design feature or incompatible uses. Reference: 18 (Thresholds L.5)				
Explanation: The proposed project would not require changes to local public roads or introduce incompatible uses. No new public roads would be constructed, and any on-site improvements would be designed to avoid hazardous features. Therefore, no impact would occur.				
e) Result in inadequate emergency access?	☐	☐	☐	☒
Standard: A significant impact may occur if the proposed project results in inadequate emergency access. Reference: 18 (Thresholds L.5, L.8, and J2)				
Explanation: The project does not propose any permanent changes to the surrounding street system. Furthermore, it would not introduce incompatible vehicles to surrounding roadways. Temporary traffic control elements would be subject to review, including a safety review and approval by the Los Angeles Department of Transportation. The proposed project would not prohibit emergency access to existing facilities in the area. Therefore, no impact would occur.				

Issues	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant	No Impact
f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle facilities, or pedestrian facilities or otherwise decrease the performance or safety of such facilities?	☐	☐	☒	☐
Standard: A significant impact may occur if the proposed project conflicts with adopted policies, plans, or programs supporting alternative transportation. Reference 18 (Thresholds L.6)				
Explanation: The Southern California Regional Rail Authority's (SCRRA's) Metrolink rail line and an Amtrak rail line are located adjacent to the project site. Railroad traffic may be affected temporarily by construction activities. Once constructed, the proposed project would not result in disruptions to SCRRA services. Furthermore, the proposed project would not conflict with any adopted policies, plans, or programs. Impacts associated with construction and operation of the proposed project would be less than significant.				
17. UTILITIES AND SERVICE SYSTEMS – Would the project:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☐	☒
Standard: A significant impact may occur if the proposed project exceeds wastewater treatment requirements of the local regulatory governing agency. Reference: 18 (Thresholds M.2)				
Explanation: The proposed project would involve construction and operation of a water wheel and the appurtenant structures required to divert water from the LA River. No uses or activities that would generate wastewater or require wastewater treatment are proposed as part of the project. The proposed project would have no impact on the wastewater treatment requirements of the Los Angeles RWQCB. Therefore, no impact would occur.				
b) Require or result in the construction of new water or wastewater treatment facilities or the expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒
Standard: A significant impact may occur if the proposed project were to result in the need for new or expanded water or wastewater treatment facilities, which could result in an adverse environmental effect that could not be mitigated. Reference: 18 (Thresholds G.1, M.1 and M.2)				
Explanation: The proposed project would involve construction and operation of a water wheel and the appurtenant structures required to divert water from the LA River. No uses or activities that would generate wastewater or consume potable water are included as part of the project. Therefore, the proposed project would not require or result in the construction of new or expanded water or wastewater treatment facilities. No impact would occur.				
c) Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒
Standard: A significant impact may occur if the volume of stormwater runoff from the proposed project increases to a level exceeding the capacity of the storm drain system serving the project site. Reference: 18 (Thresholds G.1 and M.2)				
Explanation: The project site is in an urbanized area that is adequately served by the existing storm drain system. The LA River serves as storage for high water flows from the adjacent area during storm events. The design of the proposed project would maintain flood storage capacity, thereby not affecting the flood control function. The proposed project would not increase the volume of stormwater runoff. Furthermore, the project would not result in the LA River receiving any flows beyond those it currently accepts. Operation of the proposed project would not create substantial amounts of additional runoff that would require construction of new stormwater drainage facilities or the expansion of existing facilities. Therefore, no impact would occur.				

Issues	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant	No Impact
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☐	☒
Standard: A significant impact may occur if the proposed project's water demands would exceed the existing water supplies that serve the site. Reference: 18 (Thresholds M.1)				
Explanation: The Los Angeles Department of Water Power (LADWP) provides potable water to the project area and vicinity. The proposed project would involve construction and operation of a water wheel and appurtenant water diversion structures. No uses or activities resulting in the consumption of potable water would be included as part of the project. The LA River is not a source of potable water, and the water rights application required to appropriate water from the river is for non-potable, irrigation use in the adjacent State Park and other nearby uses. Enough water is currently available from the LA River to supply the irrigation needs of the proposed users, and the water rights application, if approved, would not interfere with any other user's right to draw water from the river. Therefore, implementation of the proposed project would not require new or expanded water entitlements. No impact would occur.				
e) Result in a determination by the wastewater treatment provider that serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	☒
Standard: A significant impact may occur if the proposed project would increase wastewater generation to such a degree that the capacity of facilities currently serving the project site would be exceeded.				
Explanation: Please refer to the discussion for 17(a), above. No impacts would occur.				
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☒	☐
Standard: A significant impact may occur if the proposed project were to increase solid waste generation to a degree that existing and projected landfill capacities would be unable to accommodate the additional waste. Reference: 18 (Thresholds M.3), 29 (Countywide Siting Report)				
Explanation: The proposed project would not produce any solid waste during operation. Construction activities may generate minor amounts of solid waste, but those small amounts would be recycled or disposed of in existing landfills. Adequate landfill capacity exists to accommodate any construction debris. If disposal would occur at an off-site location, it would be disposed of in accordance with City regulations. City standards for public works require demolition debris to be recycled, where feasible; therefore, impacts associated with construction debris would be less than significant. Additionally, the City's Green Building Code has provisions, and Leadership in Energy and Environmental Design (LEED) accreditation has minimum requirements for the reduction of waste. After construction, the project would not generate substantial amounts of solid waste. Therefore, through compliance with the applicable regulations, impacts related to solid waste disposal would be less than significant.				
g) Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☒	☐
Standard: A significant impact may occur if the proposed project would generate solid waste that was in excess of or not disposed of in accordance with applicable regulations. Reference: 18 (Thresholds M.3), 29 (Countywide Siting Report)				
Explanation: Disposal of all solid waste generated by the proposed project would comply with federal, state, and local statutes and regulations related to solid waste. The project would be designed, constructed, and operated to follow all applicable laws, regulations, ordinances, and formally adopted city standards. Impacts would be less than significant.				

Issues	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant	No Impact
18. MANDATORY FINDINGS OF SIGNIFICANCE --				
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of major periods of California history or prehistory?	☐	☒	☐	☐
Comment: As discussed under IV(a), the proposed project could result in impacts on nesting birds and bats if these species are present during construction. Mitigation measure BIO-1 provides avoidance and minimization measures to protect nesting birds. Mitigation measure BIO-2 provides avoidance and minimization measures for roosting and forage of bats. Therefore, impacts would be considered less than significant. As stated in 11(b), the proposed project would not affect known cultural resources but could result in significant adverse impacts due to the disturbance of unknown archaeological resources, paleontological resources, and human remains interred outside of a formal cemetery. With implementation of mitigation measures CR-1, CR-2, and CR-3, the project would not eliminate important examples of the major periods of California history or prehistory.				
b) Does the project have impacts that are individually limited but cumulatively considerable? ("cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☐	☐	☒
Comment: The proposed project would be located across the street from the Los Angeles State Historic Park. Improvements to the park associated with the Los Angeles State Historic Park Master Development Plan (LASHPMDP) were approved in April 2012, and a final environmental impact report (EIR) for the LASHPMDP was certified at that time. Development plans approved for the park would be implemented by 2035, as funding allows, and may include the following: event spaces; a welcome and operations buildings; an elevated walkway with observation deck; hardscaped walkways and/or plazas; jogging and interpretive trail loops; a children's play area and amphitheater; unstructured play, work-out, and group gathering areas; surface parking lots; a pedestrian pathway; bioswales; a constructed/demonstration wetlands or habitat area; new trees, landscaping and turf areas; fire access and service road(s); and new automated irrigation systems. According to the final EIR, the proposed project would result in significant unavoidable adverse impacts related to noise from fireworks displays during special events, only, but would not provide a cumulatively considerable contribution to any significant cumulative impacts, including noise. The proposed water wheel is fully compatible with the plan's goals to provide recreational and educational opportunities in the area and would not result in any significant impacts, including a significant source of construction or operation noise. The proposed water wheel would also provide a source of non-potable irrigation water to the park and, as a result, reduce the park's water demand, which is an environmental benefit. As a result, impacts of the project would not result in a cumulatively considerable contribution to any significant cumulative impacts identified in conjunction with LASHPMDP implementation. Any future environmental impacts associated with park improvements that were not analyzed in the LASHPMDP EIR will be analyzed in future CEQA documentation, if necessary, and mitigated as feasible. Reasonably foreseeable current and future projects within proximity to the project site include the Albion Dairy Park project located at 1772 North Spring Street—approved in 2011 and currently in the development stage; excavation permits at 1716 North Spring Street—expected to be completed in September of 2013, and seismic retrofits of bridges and viaducts along the LA River, located at North Main Street, Spring Street, Riverside Drive, and Taylor Yard to meet state seismic requirements—				

Issues	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant	No Impact
expected to be completed in 2016. None of these projects are anticipated to result in significant impacts with respect to construction or operations. Any retrofit work on historic structures would conform to the Secretary of Interior's Standards for Rehabilitation and would have a less-than-significant impact. The proposed water wheel would not have an impact on any of these structures with respect to historic resources and would therefore not result in any cumulatively considerable contribution to a cumulative impact on historic resources that may result from concurrent construction work on these structures. Although the water wheel project is expected to require a substantial amount of soil and some debris removal during excavation work, haul routes would be coordinated through and approved by the Department of Public Works to avoid unduly burdening roadways around the project area. The project would comply with the Bureau of Engineering's Master Specifications, which contain provisions related to project interface and coordination with other projects. Therefore, the proposed project would not result in a cumulatively considerable contribution to a significant cumulative impact.				
c) Does the project have the potential to achieve short-term environmental goals to the disadvantage of long-term environmental goals?	☐	☐	☐	☒
Comment: The proposed project would primarily fulfill long-term goals by enhancing pedestrian connections between the surrounding artistic community, the State Park, and the LA River and by providing a useful water source (non-potable irrigation) for future State Park and other nearby uses. The project would not result in any significant impacts on the environment and in its operation would involve minimal electric power and non-hazardous treatment of water diverted from a non-potable source. Therefore, no impacts on long-term environmental goals would occur.				
d) Does the project have environmental effects that would cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☐	☒
Comment: As noted in the preceding checklist, potential impacts related to hazards, hydrology and water quality, cultural resources, traffic, noise, and air quality would be considered less than significant. Therefore, the proposed project is not expected to result in substantial adverse effects on human beings and would have no impact.				

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Appendix B
Air Quality and Climate Change Output Sheets

EQUIPMENT TYPES AND HP REFERENCES, FOR CALEEMOD INPUT

Waterwheel Equipment Name	Caleemod/OFFROAD/EMFAC type	Equip HP	Carl Moyer LF	Hours per Day	Source
Excavator <3.5 cy	Excavators	157	0.38	8	CalEEMOd default
Hyd. Exc. 250, 55k/1.9 cy	Excavators	250	0.38	8	from applicant
Dump Truck	T7 Tractor		--	8	
100 t Crane	Cranes	300	0.29	8	http://www.bgcrane.com/pdf/Hydraulic%20Truck%20Cranes/HTC0100.Link-Belt%20HTC-11100%20(100%20ton).pdf
Hyd. Crane 40 t / 105'	Cranes	300	0.29	8	http://www.bgcrane.com/pdf/Hydraulic%20Truck%20Cranes/HTC0040.Terex%20T340-1XL%20(40%20ton).pdf
Vib. Sheet Pile Driver	Bore/Drill Rigs		0.5	8	CalEEMOd default
Forklift	Forklifts	149	0.2	8	CalEEMOd default
Welder - 400 amp	Welders	35.5	0.42	8	http://www.lincolnelectric.com/assets/en_us/Products/K2508-3/e6210.pdf
Wheel loader - Cat 950	Rubber Tired Loaders	197	0.36	8	http://www.cat.com/cda/layout?m=607357&x=7
Generator - 10kW	Generator Sets	13	0.42	8	from applicant
Concrete pump truck	T7 Tractor		--	8	
Compressor - 185 cfm	Air Compressors	49	0.42	8	http://www.cp.com/Images/CPS%20185%20PDU%20LR%20%20032812%20Brochure_tcm332-3261931.pdf
Backhoe / Loader - Cat 436	Tractors/Loaders/Backhoes	109	0.37	8	http://www.cat.com/cda/layout?x=7&m=687467
Cat 301 mini backhoe	Tractors/Loaders/Backhoes	24.3	0.37	8	http://www.cat.com/cda/layout?x=7&m=444244
42" MTBM	Other Construction Equipment	75	0.42	8	http://www.akkerman.com/documents/apg_01082013_mtbm.pdf
Generator 725 kW	Generator Sets	972	0.42	8	from applicant
Slurry Plant	none		--	8	
Grout Plant	none		--	8	
Compressor - 1200 cfm	Air Compressors	510	0.42	8	http://www.ecsone.com/wp-content/uploads/1300-1600-Air-Compressor.pdf
Vent fan - 40 hp	Other Construction Equipment	40	0.42	8	from applicant

Waterwheel Construction

Los Angeles-South Coast County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
User Defined Commercial	1	User Defined Unit

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Utility Company**	Los Angeles Department of Water & Power
Climate Zone	11	**Precipitation Freq (Days)**	33		

1.3 User Entered Comments

Project Characteristics - Construction April - October 2014. Schedule in Caleemod shifted forward a month in modeling so all phases fit within year 2014, as Caleemod does not allow phases to overlap

Land Use - user defined commerical land use. 1.64 acre project area, based on construction drawings of LAR area (26,800 ft2) plus MTA site (44,442 ft2)

Construction Phase - estimated schedule based on start date and duration from applicant

Off-road Equipment - all equipment based applicant info. See asumption references in this AQ GHG appendix.

Off-road Equipment - all equipment based applicant info. See asumption references in this AQ GHG appendix.

Off-road Equipment - all equipment based applicant info. See asumption references in this AQ GHG appendix.

Off-road Equipment - all equipment based applicant info. See asumption references in this AQ GHG appendix.

Off-road Equipment - all equipment based applicant info. See asumption references in this AQ GHG appendix.

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Off-road Equipment - all equipment based applicant info. See asumption references in this AQ GHG appendix.

Off-road Equipment - all equipment based applicant info. See asumption references in this AQ GHG appendix.

Off-road Equipment - all equipment based applicant info. See asumption references in this AQ GHG appendix.

Trips and VMT - worker trips based on Caleemod default. 1 daily vendor trip for the mobilization,install inflatable dam,install wheel,and lanscaping phases.Vendor trip vehicle types changed to HHDT. 1 trip per concrete truck. 1 trip for each muck disposal truck.

On-road Fugitive Dust - default road dust settings

Demolition - demo quantities from applicant

Grading - 1259 yd3 of dirt removal (pit size of 85'x10'x40', see PD). 1.64 acres disturbed

Architectural Coating - no coatings

Vehicle Trips - no operations

Vechicle Emission Factors - no operations

Vechicle Emission Factors - no operations

Vechicle Emission Factors - no operations

Road Dust - no operations

Energy Use - no operations

Water And Wastewater - no operations

Solid Waste - no operations

Land Use Change - no operations

Construction Off-road Equipment Mitigation - no mitigation

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2014	6.33	46.42	28.72	0.07	1.59	2.01	3.52	0.06	2.01	2.07	0.00	6,928.25	0.00	0.53	0.00	6,939.30
2015	0.00	0.00	0.00	0.00	0.05	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2014	6.33	46.42	28.72	0.07	0.36	2.01	2.18	0.06	2.01	2.07	0.00	6,928.25	0.00	0.53	0.00	6,939.30
2015	0.00	0.00	0.00	0.00	0.05	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Energy	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**		**0.00**	**0.00**	**0.00**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Energy	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**		**0.00**	**0.00**	**0.00**

3.0 Construction Detail

3.1 Mitigation Measures Construction

3.2 Mobilization - 2014

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.04	0.00	0.04	0.00	0.00	0.00						0.00
Off-Road	0.34	2.28	1.88	0.00		0.18	0.18		0.18	0.18		277.89		0.03		278.52
Total	**0.34**	**2.28**	**1.88**	**0.00**	**0.04**	**0.18**	**0.22**	**0.00**	**0.18**	**0.18**		**277.89**		**0.03**		**278.52**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	1.02	9.40	6.18	0.01	0.41	0.35	0.77	0.04	0.35	0.40		1,427.53		0.05		1,428.58
Worker	0.02	0.02	0.22	0.00	0.05	0.00	0.05	0.00	0.00	0.00		37.92		0.00		37.97
Total	**1.04**	**9.42**	**6.40**	**0.01**	**0.46**	**0.35**	**0.82**	**0.04**	**0.35**	**0.40**		**1,465.45**		**0.05**		**1,466.55**

3.2 Mobilization - 2014

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.04	0.00	0.04	0.00	0.00	0.00						0.00
Off-Road	0.34	2.28	1.88	0.00		0.18	0.18		0.18	0.18	0.00	277.89		0.03		278.52
Total	**0.34**	**2.28**	**1.88**	**0.00**	**0.04**	**0.18**	**0.22**	**0.00**	**0.18**	**0.18**	**0.00**	**277.89**		**0.03**		**278.52**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	1.02	9.40	6.18	0.01	0.04	0.35	0.40	0.04	0.35	0.40		1,427.53		0.05		1,428.58
Worker	0.02	0.02	0.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00		37.92		0.00		37.97
Total	**1.04**	**9.42**	**6.40**	**0.01**	**0.04**	**0.35**	**0.40**	**0.04**	**0.35**	**0.40**		**1,465.45**		**0.05**		**1,466.55**

3.3 Waterwheel Pit / Jacking Shaft - 2014

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.08	0.00	0.08	0.00	0.00	0.00						0.00
Off-Road	4.01	26.54	14.17	0.04		1.21	1.21		1.21	1.21		3,627.03		0.36		3,634.56
Total	**4.01**	**26.54**	**14.17**	**0.04**	**0.08**	**1.21**	**1.29**	**0.00**	**1.21**	**1.21**		**3,627.03**		**0.36**		**3,634.56**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.02	0.18	0.10	0.00	0.33	0.01	0.33	0.00	0.01	0.01		31.08		0.00		31.10
Vendor	0.90	8.30	5.46	0.01	0.37	0.31	0.68	0.04	0.31	0.35		1,261.54		0.04		1,262.47
Worker	0.12	0.12	1.44	0.00	0.31	0.01	0.32	0.01	0.01	0.02		252.82		0.01		253.12
Total	**1.04**	**8.60**	**7.00**	**0.01**	**1.01**	**0.33**	**1.33**	**0.05**	**0.33**	**0.38**		**1,545.44**		**0.05**		**1,546.69**

3.3 Waterwheel Pit / Jacking Shaft - 2014

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.08	0.00	0.08	0.00	0.00	0.00						0.00
Off-Road	4.01	26.54	14.17	0.04		1.21	1.21		1.21	1.21	0.00	3,627.03		0.36		3,634.56
Total	**4.01**	**26.54**	**14.17**	**0.04**	**0.08**	**1.21**	**1.29**	**0.00**	**1.21**	**1.21**	**0.00**	**3,627.03**		**0.36**		**3,634.56**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.02	0.18	0.10	0.00	0.00	0.01	0.01	0.00	0.01	0.01		31.08		0.00		31.10
Vendor	0.90	8.30	5.46	0.01	0.04	0.31	0.35	0.04	0.31	0.35		1,261.54		0.04		1,262.47
Worker	0.12	0.12	1.44	0.00	0.01	0.01	0.02	0.01	0.01	0.02		252.82		0.01		253.12
Total	**1.04**	**8.60**	**7.00**	**0.01**	**0.05**	**0.33**	**0.38**	**0.05**	**0.33**	**0.38**		**1,545.44**		**0.05**		**1,546.69**

3.4 Intake Shaft - 2014

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.20	0.00	0.20	0.00	0.00	0.00						0.00
Off-Road	5.11	36.44	20.45	0.05		1.63	1.63		1.63	1.63		5,118.30		0.46		5,127.87
Total	**5.11**	**36.44**	**20.45**	**0.05**	**0.20**	**1.63**	**1.83**	**0.00**	**1.63**	**1.63**		**5,118.30**		**0.46**		**5,127.87**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.05	0.46	0.27	0.00	0.70	0.02	0.72	0.00	0.02	0.02		79.08		0.00		79.13
Vendor	0.76	6.99	4.60	0.01	0.31	0.26	0.57	0.03	0.26	0.30		1,062.35		0.04		1,063.13
Worker	0.16	0.15	1.80	0.00	0.38	0.01	0.40	0.01	0.01	0.03		316.02		0.02		316.40
Total	**0.97**	**7.60**	**6.67**	**0.01**	**1.39**	**0.29**	**1.69**	**0.04**	**0.29**	**0.35**		**1,457.45**		**0.06**		**1,458.66**

3.4 Intake Shaft - 2014

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.20	0.00	0.20	0.00	0.00	0.00						0.00
Off-Road	5.11	36.44	20.45	0.05		1.63	1.63		1.63	1.63	0.00	5,118.30		0.46		5,127.87
Total	**5.11**	**36.44**	**20.45**	**0.05**	**0.20**	**1.63**	**1.83**	**0.00**	**1.63**	**1.63**	**0.00**	**5,118.30**		**0.46**		**5,127.87**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.05	0.46	0.27	0.00	0.00	0.02	0.02	0.00	0.02	0.02		79.08		0.00		79.13
Vendor	0.76	6.99	4.60	0.01	0.03	0.26	0.30	0.03	0.26	0.30		1,062.35		0.04		1,063.13
Worker	0.16	0.15	1.80	0.00	0.01	0.01	0.03	0.01	0.01	0.03		316.02		0.02		316.40
Total	**0.97**	**7.60**	**6.67**	**0.01**	**0.04**	**0.29**	**0.35**	**0.04**	**0.29**	**0.35**		**1,457.45**		**0.06**		**1,458.66**

3.5 Outlet Shaft - 2014

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.00	0.00	0.00	0.00	0.00	0.00						0.00
Off-Road	5.11	36.44	20.45	0.05		1.63	1.63		1.63	1.63		5,118.30		0.46		5,127.87
Total	**5.11**	**36.44**	**20.45**	**0.05**	**0.00**	**1.63**	**1.63**	**0.00**	**1.63**	**1.63**		**5,118.30**		**0.46**		**5,127.87**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	1.07	9.83	6.47	0.01	0.43	0.37	0.80	0.05	0.37	0.42		1,493.93		0.05		1,495.03
Worker	0.16	0.15	1.80	0.00	0.38	0.01	0.40	0.01	0.01	0.03		316.02		0.02		316.40
Total	**1.23**	**9.98**	**8.27**	**0.01**	**0.81**	**0.38**	**1.20**	**0.06**	**0.38**	**0.45**		**1,809.95**		**0.07**		**1,811.43**

3.5 Outlet Shaft - 2014

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.00	0.00	0.00	0.00	0.00	0.00						0.00
Off-Road	5.11	36.44	20.45	0.05		1.63	1.63		1.63	1.63	0.00	5,118.30		0.46		5,127.87
Total	**5.11**	**36.44**	**20.45**	**0.05**	**0.00**	**1.63**	**1.63**	**0.00**	**1.63**	**1.63**	**0.00**	**5,118.30**		**0.46**		**5,127.87**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	1.07	9.83	6.47	0.01	0.05	0.37	0.42	0.05	0.37	0.42		1,493.93		0.05		1,495.03
Worker	0.16	0.15	1.80	0.00	0.01	0.01	0.03	0.01	0.01	0.03		316.02		0.02		316.40
Total	**1.23**	**9.98**	**8.27**	**0.01**	**0.06**	**0.38**	**0.45**	**0.06**	**0.38**	**0.45**		**1,809.95**		**0.07**		**1,811.43**

3.6 MBTM Tunneling - Intake - 2014

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.35	0.00	0.35	0.00	0.00	0.00						0.00
Off-Road	3.46	30.62	12.39	0.04		1.19	1.19		1.19	1.19		4,210.04		0.31		4,216.54
Total	**3.46**	**30.62**	**12.39**	**0.04**	**0.35**	**1.19**	**1.54**	**0.00**	**1.19**	**1.19**		**4,210.04**		**0.31**		**4,216.54**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.09	0.09	1.08	0.00	0.23	0.01	0.24	0.01	0.01	0.02		189.61		0.01		189.84
Total	**0.09**	**0.09**	**1.08**	**0.00**	**0.23**	**0.01**	**0.24**	**0.01**	**0.01**	**0.02**		**189.61**		**0.01**		**189.84**

3.6 MBTM Tunneling - Intake - 2014

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.35	0.00	0.35	0.00	0.00	0.00						0.00
Off-Road	3.46	30.62	12.39	0.04		1.19	1.19		1.19	1.19	0.00	4,210.04		0.31		4,216.54
Total	**3.46**	**30.62**	**12.39**	**0.04**	**0.35**	**1.19**	**1.54**	**0.00**	**1.19**	**1.19**	**0.00**	**4,210.04**		**0.31**		**4,216.54**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.09	0.09	1.08	0.00	0.01	0.01	0.02	0.01	0.01	0.02		189.61		0.01		189.84
Total	**0.09**	**0.09**	**1.08**	**0.00**	**0.01**	**0.01**	**0.02**	**0.01**	**0.01**	**0.02**		**189.61**		**0.01**		**189.84**

3.7 install inflatable dam - 2014

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.42	12.33	4.48	0.02		0.43	0.43		0.43	0.43		1,822.53		0.13		1,825.18
Total	**1.42**	**12.33**	**4.48**	**0.02**		**0.43**	**0.43**		**0.43**	**0.43**		**1,822.53**		**0.13**		**1,825.18**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.05	0.44	0.29	0.00	0.02	0.02	0.04	0.00	0.02	0.02		66.40		0.00		66.45
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Total	**0.05**	**0.44**	**0.29**	**0.00**	**0.02**	**0.02**	**0.04**	**0.00**	**0.02**	**0.02**		**66.40**		**0.00**		**66.45**

3.7 install inflatable dam - 2014

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.42	12.33	4.48	0.02		0.43	0.43		0.43	0.43	0.00	1,822.53		0.13		1,825.18
Total	**1.42**	**12.33**	**4.48**	**0.02**		**0.43**	**0.43**		**0.43**	**0.43**	**0.00**	**1,822.53**		**0.13**		**1,825.18**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.05	0.44	0.29	0.00	0.00	0.02	0.02	0.00	0.02	0.02		66.40		0.00		66.45
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Total	**0.05**	**0.44**	**0.29**	**0.00**	**0.00**	**0.02**	**0.02**	**0.00**	**0.02**	**0.02**		**66.40**		**0.00**		**66.45**

3.8 wheel foundation and raceway - 2014

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.61	5.22	2.15	0.01		0.20	0.20		0.20	0.20		708.08		0.05		709.21
Total	**0.61**	**5.22**	**2.15**	**0.01**		**0.20**	**0.20**		**0.20**	**0.20**		**708.08**		**0.05**		**709.21**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.03	0.03	0.36	0.00	0.08	0.00	0.08	0.00	0.00	0.01		63.20		0.00		63.28
Total	**0.03**	**0.03**	**0.36**	**0.00**	**0.08**	**0.00**	**0.08**	**0.00**	**0.00**	**0.01**		**63.20**		**0.00**		**63.28**

3.8 wheel foundation and raceway - 2014

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.61	5.22	2.15	0.01		0.20	0.20		0.20	0.20	0.00	708.08		0.05		709.21
Total	**0.61**	**5.22**	**2.15**	**0.01**		**0.20**	**0.20**		**0.20**	**0.20**	**0.00**	**708.08**		**0.05**		**709.21**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.03	0.03	0.36	0.00	0.00	0.00	0.01	0.00	0.00	0.01		63.20		0.00		63.28
Total	**0.03**	**0.03**	**0.36**	**0.00**	**0.00**	**0.00**	**0.01**	**0.00**	**0.00**	**0.01**		**63.20**		**0.00**		**63.28**

3.9 MBTM Tunneling - Outlet - 2014

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.11	0.00	0.11	0.00	0.00	0.00						0.00
Off-Road	3.46	30.62	12.39	0.04		1.19	1.19		1.19	1.19		4,210.04		0.31		4,216.54
Total	**3.46**	**30.62**	**12.39**	**0.04**	**0.11**	**1.19**	**1.30**	**0.00**	**1.19**	**1.19**		**4,210.04**		**0.31**		**4,216.54**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.09	0.09	1.08	0.00	0.23	0.01	0.24	0.01	0.01	0.02		189.61		0.01		189.84
Total	**0.09**	**0.09**	**1.08**	**0.00**	**0.23**	**0.01**	**0.24**	**0.01**	**0.01**	**0.02**		**189.61**		**0.01**		**189.84**

3.9 MBTM Tunneling - Outlet - 2014

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.11	0.00	0.11	0.00	0.00	0.00						0.00
Off-Road	3.46	30.62	12.39	0.04		1.19	1.19		1.19	1.19	0.00	4,210.04		0.31		4,216.54
Total	**3.46**	**30.62**	**12.39**	**0.04**	**0.11**	**1.19**	**1.30**	**0.00**	**1.19**	**1.19**	**0.00**	**4,210.04**		**0.31**		**4,216.54**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.09	0.09	1.08	0.00	0.01	0.01	0.02	0.01	0.01	0.02		189.61		0.01		189.84
Total	**0.09**	**0.09**	**1.08**	**0.00**	**0.01**	**0.01**	**0.02**	**0.01**	**0.01**	**0.02**		**189.61**		**0.01**		**189.84**

3.10 install wheel - 2014

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.74	24.34	9.94	0.03		0.92	0.92		0.92	0.92		3,225.27		0.24		3,230.37
Total	**2.74**	**24.34**	**9.94**	**0.03**		**0.92**	**0.92**		**0.92**	**0.92**		**3,225.27**		**0.24**		**3,230.37**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.17	1.53	1.01	0.00	0.07	0.06	0.12	0.01	0.06	0.06		232.39		0.01		232.56
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Total	**0.17**	**1.53**	**1.01**	**0.00**	**0.07**	**0.06**	**0.12**	**0.01**	**0.06**	**0.06**		**232.39**		**0.01**		**232.56**

3.10 install wheel - 2014

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.74	24.34	9.94	0.03		0.92	0.92		0.92	0.92	0.00	3,225.27		0.24		3,230.37
Total	**2.74**	**24.34**	**9.94**	**0.03**		**0.92**	**0.92**		**0.92**	**0.92**	**0.00**	**3,225.27**		**0.24**		**3,230.37**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.17	1.53	1.01	0.00	0.01	0.06	0.06	0.01	0.06	0.06		232.39		0.01		232.56
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Total	**0.17**	**1.53**	**1.01**	**0.00**	**0.01**	**0.06**	**0.06**	**0.01**	**0.06**	**0.06**		**232.39**		**0.01**		**232.56**

3.11 lanscape install - 2014

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	0.00					0.00	0.00		0.00	0.00						0.00
Off-Road	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**		**0.00**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.29	2.62	1.72	0.00	0.12	0.10	0.21	0.01	0.10	0.11		398.38		0.01		398.67
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Total	**0.29**	**2.62**	**1.72**	**0.00**	**0.12**	**0.10**	**0.21**	**0.01**	**0.10**	**0.11**		**398.38**		**0.01**		**398.67**

3.11 lanscape install - 2014

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	0.00					0.00	0.00		0.00	0.00						0.00
Off-Road	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00		0.00		0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**0.00**		**0.00**		**0.00**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.29	2.62	1.72	0.00	0.01	0.10	0.11	0.01	0.10	0.11		398.38		0.01		398.67
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Total	**0.29**	**2.62**	**1.72**	**0.00**	**0.01**	**0.10**	**0.11**	**0.01**	**0.10**	**0.11**		**398.38**		**0.01**		**398.67**

3.12 Excavation Dust Only - 2014

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.05	0.00	0.05	0.00	0.00	0.00						0.00
Off-Road	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.05**	**0.00**	**0.05**	**0.00**	**0.00**	**0.00**		**0.00**		**0.00**		**0.00**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**		**0.00**		**0.00**

3.12 Excavation Dust Only - 2014

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.05	0.00	0.05	0.00	0.00	0.00						0.00
Off-Road	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00		0.00		0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.05**	**0.00**	**0.05**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**		**0.00**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**		**0.00**		**0.00**

3.12 Excavation Dust Only - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.05	0.00	0.05	0.00	0.00	0.00						0.00
Off-Road	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.05**	**0.00**	**0.05**	**0.00**	**0.00**	**0.00**		**0.00**		**0.00**		**0.00**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**		**0.00**		**0.00**

3.12 Excavation Dust Only - 2015

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.05	0.00	0.05	0.00	0.00	0.00						0.00
Off-Road	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00		0.00		0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.05**	**0.00**	**0.05**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**		**0.00**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**		**0.00**		**0.00**

4.0 Mobile Detail

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Unmitigated	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Commercial	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW
User Defined Commercial	8.90	13.30	7.40	0.00	0.00	0.00

5.0 Energy Detail

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
NaturalGas Unmitigated	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	lb/day										lb/day					
User Defined Commercial	0	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
Total		**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**	**0.00**	**0.00**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	lb/day										lb/day					
User Defined Commercial	0	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
Total		**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**	**0.00**	**0.00**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Unmitigated	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.00					0.00	0.00		0.00	0.00						0.00
Consumer Products	0.00					0.00	0.00		0.00	0.00						0.00
Landscaping	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**		**0.00**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.00					0.00	0.00		0.00	0.00						0.00
Consumer Products	0.00					0.00	0.00		0.00	0.00						0.00
Landscaping	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**		**0.00**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Vegetation

Waterwheel Construction

Los Angeles-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
User Defined Commercial	1	User Defined Unit

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Utility Company**	Los Angeles Department of Water & Power
Climate Zone	11	**Precipitation Freq (Days)**	33		

1.3 User Entered Comments

Project Characteristics - Construction April - October 2014. Schedule in Caleemod shifted forward a month in modeling so all phases fit within year 2014, as Caleemod does not allow phases to overlap

Land Use - user defined commerical land use. 1.64 acre project area, based on construction drawings of LAR area (26,800 ft2) plus MTA site (44,442 ft2)

Construction Phase - estimated schedule based on start date and duration from applicant

Off-road Equipment - all equipment based applicant info. See asumption references in this AQ GHG appendix.

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Trips and VMT - worker trips based on Caleemod default. 1 daily vendor trip for the mobilization,install inflatable dam,install wheel,and lanscaping phases.Vendor trip vehicle types changed to HHDT. 1 trip per concrete truck. 1 trip for each muck disposal truck.

On-road Fugitive Dust - default road dust settings

Demolition - demo quantities from applicant

Grading - 1259 yd3 of dirt removal (pit size of 85'x10'x40', see PD). 1.64 acres disturbed

Architectural Coating - no coatings

Vehicle Trips - no operations

Vechicle Emission Factors - no operations

Vechicle Emission Factors - no operations

Vechicle Emission Factors - no operations

Road Dust - no operations

Energy Use - no operations

Water And Wastewater - no operations

Solid Waste - no operations

Land Use Change - no operations

Construction Off-road Equipment Mitigation - no mitigation

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2014	0.42	3.12	1.91	0.00	0.07	0.13	0.21	0.01	0.13	0.14	0.00	417.72	417.72	0.03	0.00	418.38
2015	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.42**	**3.12**	**1.91**	**0.00**	**0.07**	**0.13**	**0.21**	**0.01**	**0.13**	**0.14**	**0.00**	**417.72**	**417.72**	**0.03**	**0.00**	**418.38**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2014	0.42	3.12	1.91	0.00	0.01	0.13	0.15	0.01	0.13	0.14	0.00	417.72	417.72	0.03	0.00	418.38
2015	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.42**	**3.12**	**1.91**	**0.00**	**0.01**	**0.13**	**0.15**	**0.01**	**0.13**	**0.14**	**0.00**	**417.72**	**417.72**	**0.03**	**0.00**	**418.38**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Energy	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Waste						0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water						0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Energy	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Waste						0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water						0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

3.1 Mitigation Measures Construction

3.2 Mobilization - 2014

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.01	0.05	0.04	0.00		0.00	0.00		0.00	0.00	0.00	5.42	5.42	0.00	0.00	5.43
Total	**0.01**	**0.05**	**0.04**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**5.42**	**5.42**	**0.00**	**0.00**	**5.43**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.02	0.20	0.15	0.00	0.01	0.01	0.02	0.00	0.01	0.01	0.00	27.70	27.70	0.00	0.00	27.72
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.70	0.70	0.00	0.00	0.70
Total	**0.02**	**0.20**	**0.15**	**0.00**	**0.01**	**0.01**	**0.02**	**0.00**	**0.01**	**0.01**	**0.00**	**28.40**	**28.40**	**0.00**	**0.00**	**28.42**

3.2 Mobilization - 2014

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.01	0.05	0.04	0.00		0.00	0.00		0.00	0.00	0.00	5.42	5.42	0.00	0.00	5.43
Total	**0.01**	**0.05**	**0.04**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**5.42**	**5.42**	**0.00**	**0.00**	**5.43**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.02	0.20	0.15	0.00	0.00	0.01	0.01	0.00	0.01	0.01	0.00	27.70	27.70	0.00	0.00	27.72
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.70	0.70	0.00	0.00	0.70
Total	**0.02**	**0.20**	**0.15**	**0.00**	**0.00**	**0.01**	**0.01**	**0.00**	**0.01**	**0.01**	**0.00**	**28.40**	**28.40**	**0.00**	**0.00**	**28.42**

3.3 Waterwheel Pit / Jacking Shaft - 2014

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.08	0.50	0.27	0.00		0.02	0.02		0.02	0.02	0.00	62.50	62.50	0.01	0.00	62.63
Total	**0.08**	**0.50**	**0.27**	**0.00**	**0.00**	**0.02**	**0.02**	**0.00**	**0.02**	**0.02**	**0.00**	**62.50**	**62.50**	**0.01**	**0.00**	**62.63**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.53	0.53	0.00	0.00	0.53
Vendor	0.02	0.16	0.11	0.00	0.01	0.01	0.01	0.00	0.01	0.01	0.00	21.63	21.63	0.00	0.00	21.65
Worker	0.00	0.00	0.03	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	4.13	4.13	0.00	0.00	4.14
Total	**0.02**	**0.16**	**0.14**	**0.00**	**0.03**	**0.01**	**0.03**	**0.00**	**0.01**	**0.01**	**0.00**	**26.29**	**26.29**	**0.00**	**0.00**	**26.32**

3.3 Waterwheel Pit / Jacking Shaft - 2014

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.08	0.50	0.27	0.00		0.02	0.02		0.02	0.02	0.00	62.50	62.50	0.01	0.00	62.63
Total	**0.08**	**0.50**	**0.27**	**0.00**	**0.00**	**0.02**	**0.02**	**0.00**	**0.02**	**0.02**	**0.00**	**62.50**	**62.50**	**0.01**	**0.00**	**62.63**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.53	0.53	0.00	0.00	0.53
Vendor	0.02	0.16	0.11	0.00	0.00	0.01	0.01	0.00	0.01	0.01	0.00	21.63	21.63	0.00	0.00	21.65
Worker	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.13	4.13	0.00	0.00	4.14
Total	**0.02**	**0.16**	**0.14**	**0.00**	**0.00**	**0.01**	**0.01**	**0.00**	**0.01**	**0.01**	**0.00**	**26.29**	**26.29**	**0.00**	**0.00**	**26.32**

3.4 Intake Shaft - 2014

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.08	0.58	0.33	0.00		0.03	0.03		0.03	0.03	0.00	74.27	74.27	0.01	0.00	74.41
Total	**0.08**	**0.58**	**0.33**	**0.00**	**0.00**	**0.03**	**0.03**	**0.00**	**0.03**	**0.03**	**0.00**	**74.27**	**74.27**	**0.01**	**0.00**	**74.41**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.01	0.00	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	1.15	1.15	0.00	0.00	1.15
Vendor	0.01	0.11	0.08	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	15.34	15.34	0.00	0.00	15.35
Worker	0.00	0.00	0.03	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	4.35	4.35	0.00	0.00	4.36
Total	**0.01**	**0.12**	**0.11**	**0.00**	**0.02**	**0.00**	**0.03**	**0.00**	**0.00**	**0.00**	**0.00**	**20.84**	**20.84**	**0.00**	**0.00**	**20.86**

3.4 Intake Shaft - 2014

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.08	0.58	0.33	0.00		0.03	0.03		0.03	0.03	0.00	74.27	74.27	0.01	0.00	74.41
Total	**0.08**	**0.58**	**0.33**	**0.00**	**0.00**	**0.03**	**0.03**	**0.00**	**0.03**	**0.03**	**0.00**	**74.27**	**74.27**	**0.01**	**0.00**	**74.41**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.15	1.15	0.00	0.00	1.15
Vendor	0.01	0.11	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	15.34	15.34	0.00	0.00	15.35
Worker	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.35	4.35	0.00	0.00	4.36
Total	**0.01**	**0.12**	**0.11**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**20.84**	**20.84**	**0.00**	**0.00**	**20.86**

3.5 Outlet Shaft - 2014

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.11	0.82	0.46	0.00		0.04	0.04		0.04	0.04	0.00	104.44	104.44	0.01	0.00	104.64
Total	**0.11**	**0.82**	**0.46**	**0.00**	**0.00**	**0.04**	**0.04**	**0.00**	**0.04**	**0.04**	**0.00**	**104.44**	**104.44**	**0.01**	**0.00**	**104.64**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.02	0.22	0.16	0.00	0.01	0.01	0.02	0.00	0.01	0.01	0.00	30.34	30.34	0.00	0.00	30.36
Worker	0.00	0.00	0.04	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	6.12	6.12	0.00	0.00	6.12
Total	**0.02**	**0.22**	**0.20**	**0.00**	**0.02**	**0.01**	**0.03**	**0.00**	**0.01**	**0.01**	**0.00**	**36.46**	**36.46**	**0.00**	**0.00**	**36.48**

3.5 Outlet Shaft - 2014

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.11	0.82	0.46	0.00		0.04	0.04		0.04	0.04	0.00	104.44	104.44	0.01	0.00	104.64
Total	**0.11**	**0.82**	**0.46**	**0.00**	**0.00**	**0.04**	**0.04**	**0.00**	**0.04**	**0.04**	**0.00**	**104.44**	**104.44**	**0.01**	**0.00**	**104.64**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.02	0.22	0.16	0.00	0.00	0.01	0.01	0.00	0.01	0.01	0.00	30.34	30.34	0.00	0.00	30.36
Worker	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.12	6.12	0.00	0.00	6.12
Total	**0.02**	**0.22**	**0.20**	**0.00**	**0.00**	**0.01**	**0.01**	**0.00**	**0.01**	**0.01**	**0.00**	**36.46**	**36.46**	**0.00**	**0.00**	**36.48**

3.6 MBTM Tunneling - Intake - 2014

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.01	0.08	0.03	0.00		0.00	0.00		0.00	0.00	0.00	9.55	9.55	0.00	0.00	9.56
Total	**0.01**	**0.08**	**0.03**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**9.55**	**9.55**	**0.00**	**0.00**	**9.56**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.41	0.41	0.00	0.00	0.41
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.41**	**0.41**	**0.00**	**0.00**	**0.41**

3.6 MBTM Tunneling - Intake - 2014

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.01	0.08	0.03	0.00		0.00	0.00		0.00	0.00	0.00	9.55	9.55	0.00	0.00	9.56
Total	**0.01**	**0.08**	**0.03**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**9.55**	**9.55**	**0.00**	**0.00**	**9.56**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.41	0.41	0.00	0.00	0.41
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.41**	**0.41**	**0.00**	**0.00**	**0.41**

3.7 install inflatable dam - 2014

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.00	0.01	0.00	0.00		0.00	0.00		0.00	0.00	0.00	1.65	1.65	0.00	0.00	1.66
Total	**0.00**	**0.01**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**1.65**	**1.65**	**0.00**	**0.00**	**1.66**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.06	0.00	0.00	0.06
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.06**	**0.06**	**0.00**	**0.00**	**0.06**

3.7 install inflatable dam - 2014

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.00	0.01	0.00	0.00		0.00	0.00		0.00	0.00	0.00	1.65	1.65	0.00	0.00	1.66
Total	**0.00**	**0.01**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**1.65**	**1.65**	**0.00**	**0.00**	**1.66**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.06	0.00	0.00	0.06
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.06**	**0.06**	**0.00**	**0.00**	**0.06**

3.8 wheel foundation and raceway - 2014

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.00	0.02	0.01	0.00		0.00	0.00		0.00	0.00	0.00	2.25	2.25	0.00	0.00	2.25
Total	**0.00**	**0.02**	**0.01**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**2.25**	**2.25**	**0.00**	**0.00**	**2.25**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.19	0.19	0.00	0.00	0.19
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.19**	**0.19**	**0.00**	**0.00**	**0.19**

3.8 wheel foundation and raceway - 2014

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.00	0.02	0.01	0.00		0.00	0.00		0.00	0.00	0.00	2.25	2.25	0.00	0.00	2.25
Total	**0.00**	**0.02**	**0.01**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**2.25**	**2.25**	**0.00**	**0.00**	**2.25**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.19	0.19	0.00	0.00	0.19
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.19**	**0.19**	**0.00**	**0.00**	**0.19**

3.9 MBTM Tunneling - Outlet - 2014

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.03	0.24	0.10	0.00		0.01	0.01		0.01	0.01	0.00	30.55	30.55	0.00	0.00	30.59
Total	**0.03**	**0.24**	**0.10**	**0.00**	**0.00**	**0.01**	**0.01**	**0.00**	**0.01**	**0.01**	**0.00**	**30.55**	**30.55**	**0.00**	**0.00**	**30.59**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.30	1.30	0.00	0.00	1.31
Total	**0.00**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**1.30**	**1.30**	**0.00**	**0.00**	**1.31**

3.9 MBTM Tunneling - Outlet - 2014

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.03	0.24	0.10	0.00		0.01	0.01		0.01	0.01	0.00	30.55	30.55	0.00	0.00	30.59
Total	**0.03**	**0.24**	**0.10**	**0.00**	**0.00**	**0.01**	**0.01**	**0.00**	**0.01**	**0.01**	**0.00**	**30.55**	**30.55**	**0.00**	**0.00**	**30.59**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.30	1.30	0.00	0.00	1.31
Total	**0.00**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**1.30**	**1.30**	**0.00**	**0.00**	**1.31**

3.10 install wheel - 2014

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.01	0.09	0.03	0.00		0.00	0.00		0.00	0.00	0.00	10.24	10.24	0.00	0.00	10.25
Total	**0.01**	**0.09**	**0.03**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**10.24**	**10.24**	**0.00**	**0.00**	**10.25**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.73	0.73	0.00	0.00	0.73
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.73**	**0.73**	**0.00**	**0.00**	**0.73**

3.10 install wheel - 2014

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.01	0.09	0.03	0.00		0.00	0.00		0.00	0.00	0.00	10.24	10.24	0.00	0.00	10.25
Total	**0.01**	**0.09**	**0.03**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**10.24**	**10.24**	**0.00**	**0.00**	**10.25**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.73	0.73	0.00	0.00	0.73
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.73**	**0.73**	**0.00**	**0.00**	**0.73**

3.11 lanscape install - 2014

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.16	2.16	0.00	0.00	2.16
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.00**	**0.02**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**2.16**	**2.16**	**0.00**	**0.00**	**2.16**

3.11 lanscape install - 2014

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.16	2.16	0.00	0.00	2.16
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.00**	**0.02**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**2.16**	**2.16**	**0.00**	**0.00**	**2.16**

3.12 Excavation Dust Only - 2014

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.12 Excavation Dust Only - 2014

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.12 Excavation Dust Only - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.12 Excavation Dust Only - 2015

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

4.0 Mobile Detail

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Unmitigated	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Commercial	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW
User Defined Commercial	8.90	13.30	7.40	0.00	0.00	0.00

5.0 Energy Detail

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Electricity Unmitigated						0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
NaturalGas Mitigated	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
NaturalGas Unmitigated	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	tons/yr										MT/yr					
User Defined Commercial	0	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total		**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	tons/yr										MT/yr					
User Defined Commercial	0	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total		**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	kWh	tons/yr				MT/yr			
User Defined Commercial	0					0.00	0.00	0.00	0.00
Total						**0.00**	**0.00**	**0.00**	**0.00**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	kWh	tons/yr				MT/yr			
User Defined Commercial	0					0.00	0.00	0.00	0.00
Total						**0.00**	**0.00**	**0.00**	**0.00**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Unmitigated	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscaping	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscaping	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

7.0 Water Detail

7.1 Mitigation Measures Water

	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr				MT/yr			
Mitigated					0.00	0.00	0.00	0.00
Unmitigated					0.00	0.00	0.00	0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr				MT/yr			
User Defined Commercial	0 / 0					0.00	0.00	0.00	0.00
Total						**0.00**	**0.00**	**0.00**	**0.00**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr				MT/yr			
User Defined Commercial	0 / 0					0.00	0.00	0.00	0.00
Total						**0.00**	**0.00**	**0.00**	**0.00**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
	tons/yr				MT/yr			
Mitigated					0.00	0.00	0.00	0.00
Unmitigated					0.00	0.00	0.00	0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr				MT/yr			
User Defined Commercial	0					0.00	0.00	0.00	0.00
Total						**0.00**	**0.00**	**0.00**	**0.00**

Mitigated

	Waste Disposed	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr				MT/yr			
User Defined Commercial	0					0.00	0.00	0.00	0.00
Total						**0.00**	**0.00**	**0.00**	**0.00**

9.0 Vegetation

Estimate of Water Pump Annual Energy Consumption

Estimate of Water Pump Horsepower	150
Average Utilization Rate Estimate	61%
Hours per Day in Operation Estimate	24
Days per Year in Operation Estimate	365
Annual Horsepower Hours Estimate	801,540
Watts per 1 Horsepower	745.7
Annual Kilowatt Estimate	597,708

http://www.epa.gov/cleanenergy/energy-resources/calculator.html#results
Last updated on 4/25/2013

Clean Energy

Greenhouse Gas Equivalencies Calculator

UPDATED April 2013. Assumptions for average vehicle miles traveled and average fuel economy have been updated to reflect revisions made in December 2012 to the Federal Highway Administration's statistics (the emissions factor is not affected by these updates). Also,the natural gas emissions factor has been unrounded for consistency with figures used in the Greenhouse Gas Reporting Program. See the revision history page for more details.

Did you ever wonder what reducing carbon dioxide (CO_2) emissions by 1 million metric tons means in everyday terms? The greenhouse gas equivalencies calculator can help you understand just that, translating abstract measurements into concrete terms you can understand, such as "equivalent to avoiding the carbon dioxide emissions of 183,000 cars annually."

Other Calculators

There are a number of other web-based calculators that can estimate greenhouse gas emission reductions for

- individuals and households
- waste, and
- transportation.

For basic information and details on greenhouse gas emissions, visit the Emissions section of EPA's climate change site.

This calculator may be useful in communicating your greenhouse gas reduction strategy, reduction targets, or other initiatives aimed at reducing greenhouse gas emissions.

Enter Your Data Below

There are two options for entering reduction data into this calculator.

Option 1: If You Don't Have Emissions Data

1. If you are starting with data in units of "gallons of gasoline consumed," "kilowatt-hours of electricity," "therms of natural gas," or "passenger vehicles per year" instead of a quantity of emissions of specific greenhouse gases, use this option.
2. Enter a quantity and pick the desired unit below; and
3. Click on the "Calculate Equivalent" button to convert your value to Carbon Dioxide Equivalent.
4. If you are entering kilowatt-hours of electricity, please be sure to read the caveats and explanations on the Calculations and Reference page.
5. Please note that these estimates are approximate and should not be used for emission inventory or formal carbon footprinting exercises.

600000 | kilowatt-hours of electricity | Calculate Equivalent

? Click Here for Calculations and References

Option 2: If You Already Know the Quantity of Emissions

If you have already estimated the quantity of emissions (e.g., metric tons of carbon dioxide equivalent), you can input the amount of emissions and select the appropriate units for the corresponding greenhouse gas type.

Amount	Unit	Gas
423	Metric Tons	CO_2 - Carbon Dioxide or CO_2 Equivalent*
	Metric Tons	Carbon or Carbon Equivalent
	Metric Tons	CH_4 - Methane
	Metric Tons	N_2O - Nitrous Oxide
	Metric Tons	HFC-23 - Hydrofluorocarbon gases
	Metric Tons	CF4 - Perfluorocarbon gases
	Metric Tons	SF_6 - Sulfur Hexafluoride

Calculate Equivalencies Clear Fields

*If your estimated emissions of methane, nitrous oxide, or other non-CO_2 gases are already expressed in CO_2 equivalent or carbon equivalent, please enter your figures in the row for CO_2 or carbon equivalent.

The sum of the greenhouse gas emissions you entered above is 423 Metric Tons of Carbon Dioxide Equivalent.

This is equivalent to one of the following:

Equivalency Results

Click on the question mark **?** link to read the explanation of that particular calculation. Read about all calculations.

The information you entered above is equivalent to one of the following statements:

Annual greenhouse gas emissions from 88.2 passenger vehicles **?** *(click to read more about this calculation)*

CO_2 emissions from 47,459 gallons of gasoline consumed **?**

CO_2 emissions from 984 barrels of oil consumed **?**

CO_2 emissions from 5.6 tanker trucks' worth of gasoline **?**

CO_2 emissions from the *electricity* use of 63.4 homes for one year **?**

CO_2 emissions from the *energy* use of 21.8 homes for one year **?**

Carbon sequestered by 10,855 tree seedlings grown for 10 years **?**

Carbon sequestered annually by 347 acres of U.S. forests **?**

Carbon sequestered annually by 3.3 acres of U.S. forest preserved from conversion to cropland **?**

CO_2 emissions from 17,639 propane cylinders used for home barbeques **?**

CO_2 emissions from burning 1.8 railcars' worth of coal **?**

Greenhouse gas emissions avoided by recycling 159 tons of waste instead of sending it to the landfill **?**

Annual CO_2 emissions of 0.0001 coal fired power plants **?**

Appendix C
Biological Resources and Habitat Assessment

BIOLOGICAL RESOURCES AND HABITAT ASSESSMENT

BENDING THE RIVER BACK INTO THE CITY PROJECT

LOS ANGELES COUNTY, CALIFORNIA

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Acronyms and Abbreviations

APNs	assessor's parcel numbers
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CRPR	California Rare Plant Rank
ICF	ICF International
LASHP	Los Angeles State Historic Park
MSL	mean sea level
NRCS	Natural Resources Conservation Service
project	Bending the River Back into the City Project
RWQCB	Regional Water Quality Control Board
SFP	State Fully Protected
SSC	California Species of Special Concern
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geologic Survey

Chapter 1
Introduction

This report contains the results of a biological resources and habitat assessment conducted for the Bending the River Back into the City Project (project) located in the City of Los Angeles, Los Angeles County, California.

1.1 Project Location

The proposed project is located within and immediately west of the Los Angeles River, between State Route 110 and U.S. 101. The proposed improvements would be located adjacent to the Amtrak/Metrolink railroad right-of-way and immediately south of the North Broadway Bridge (Figure 1). The project site is mapped within an unsectioned portion (Township 1 South, Range 13 West) of the Los Angeles U.S. Geological Survey (USGS) 7.5-minute topographic quadrangle map (Figure 2). The project site is identified as occurring within assessor's parcel numbers (APNs) 5409-001-900, 5409-001-901, 5414-016-903, 5414-027-904, and 5447-032-900.

1.2 Project Description

The proposed project is intended to re-establish a connection between the City of Los Angeles and the Los Angeles River. A key element of this connection is a water wheel, which would be situated on the west bank of the river, near the location of a historic water wheel that operated in the 1850s and delivered river water to the Pueblo de Los Angeles.

To provide adequate water pressure to turn the approximate 70-foot-diameter water wheel, an impoundment would be created within the adjacent river channel by installing a 6-foot-tall inflatable dam across the entire width of the channel a short distance downstream of the North Broadway Bridge. The dam would be inflated during non-storm periods (typically April to October), establishing an impoundment that would extend up to approximately 1,220 feet upstream (to just north of the rail bridge) and contain up to approximately 16 acre-feet of water. Pipelines from the water wheel pit would be extended through openings in the river channel side slopes immediately upstream and downstream of the dam to deliver impounded water to the water wheel and return flows to the river channel.

Approximately 99% of diverted flows would be returned to the river immediately upon their passage through the water wheel. Approximately 80 acre-feet per year (equivalent to approximately 0.11 cubic feet per second if averaged over the year) is proposed to be diverted for irrigation of landscaping at the nearby Los Angeles State Historic Park (LASHP) as well as for other irrigation uses. River water diverted for irrigation use would be treated by filtration and ultraviolet disinfection before use.

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Chapter 2
Methods

2.1 Terminology

Within this report, the term "project site" refers to the proposed 6.29-acre area encompassing the proposed construction limits and the maximum impoundment area upstream of the proposed dam. The term "study area" refers to the project site plus an additional 500-foot buffer area surrounding the project site (66.44 acres). Special-status species referred to in this report include those wildlife and plants listed as threatened or endangered under federal or state endangered species acts (CDFG 2011); plant species designated by the California Native Plant Society (CNPS) with a California Rare Plant Rank (CRPR) of 1A, 1B, or 2 or other plants of local concern (CNPS 2012); and wildlife that is designated as a California Species of Special Concern (SSC), as defined by the California Department of Fish and Wildlife (CDFG 2011).

2.2 Literature Review

A literature review was conducted to evaluate the environmental setting of the study area prior to the habitat assessment and identify special-status species or potentially suitable habitat for special-status species. The literature review included a review of the U.S. Fish and Wildlife Service (USFWS) Species Occurrence Database (reviewed July 6, 2012, and June 26, 2013) (USFWS 2013a) and the USFWS mapping of designated critical habitat (reviewed June 13, 2012, and June 26, 2013) (USFWS 2013b). The California Natural Diversity Database (CNDDB) (CDFW 2013a) and the CNPS Inventory of Rare and Endangered Plants (CNPS 2013) were reviewed for the Los Angeles (USGS 1966) and surrounding USGS 7.5-minute quadrangles. In addition, the U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Soil Survey Geographic database (USDA/NRCS 2013) was reviewed.

2.3 Biological Resources

ICF International (ICF) biologist Paul Schwartz and ICF regulatory specialist Daniel Cardoza, in association with Geosyntec Consultants, conducted a habitat assessment for special-status biological resources within the study area on June 18, 2012. The habitat assessment was conducted between 0800 and 1130, and temperatures ranged from 64˚ to 75˚ Fahrenheit. Winds were calm, and cloud cover was overcast but becoming clear. Visibility was good.

The study area at the time of the June 18, 2012, habitat assessment was based on an alternate scheme (which was subsequently determined infeasible) for diversion of water from the Los Angeles River. The project site now extends farther upstream. Inasmuch as the river channel is of uniform character within this added area, characterization of biological resources within the extended limits is based on field observations in the downstream areas and recent aerial photographs. Similar conditions and a similar approach are also applicable to the study area buffer adjoining the upstream extension of the project site.

During the habitat assessment, several areas of the study area were inaccessible. These areas included the Los Angeles River area and all railway lands. Inaccessible areas were viewed with binoculars. The Los Angeles River area was inspected from the North Broadway Bridge, North Spring Street Bridge, and the North Main Street Bridge. All accessible areas within the study area were traversed by walking and/or driving and inspected with binoculars.

During the habitat assessment, photos of the study area were taken (see Appendix A). All plant species observed or otherwise detected during the habitat assessment were recorded in a field notebook. Common plant species observed were identified by visual characteristics and morphology in the field. Any unusual and less-familiar plants were identified in the office using taxonomic keys and guides. Taxonomic nomenclature for plants follows *The Jepson Manual: Vascular Plants of California* (Baldwin et al. 2012). A complete list of all plant species observed during the site visit is found in Appendix B of this document.[1]

All wildlife species observed or otherwise detected during the habitat assessment were recorded in a field notebook. Wildlife species were detected by sight, calls, tracks, scat, or other sign. Field guides were used to assist with identification of species during surveys and included the *National Geographic Field Guide to the Birds of North America* (National Geographic 2002) for birds, *Western Reptiles and Amphibians* (Stebbins 2003) for reptiles, and *A Field Guide to the Mammals of North America* (Reid 2006) for mammals. A complete list of all wildlife species observed during the site visit is found in Section 3.5 of this document.

2.3.1 Vegetation/Land Use Mapping

Vegetation within the project site and study area was mapped during the habitat assessment on an aerial image of the site taken from Google Earth (scale: 1 inch = 200 feet) (Google Earth 2012 [image dated March 7, 2011]). On June 26, 2013, a Google Earth aerial image (dated September 20, 2012) was reviewed to confirm that conditions remain consistent with the original mapping. The current Google Earth image was also evaluated to confirm conditions within the extended project footprint within the river channel, and the associated 500-foot buffer. When possible, community descriptions from the *Manual of California Vegetation* (Sawyer, Keeler-Wolfe, and Evans 2009) were used to classify the vegetation within the study area. However, because of the urban nature of the study area and the substantial cover of ornamental vegetation present, the majority of the vegetation within the study area could not be classified under the *Manual of California Vegetation* (Sawyer, Keeler-Wolfe, and Evans 2009). As such, several vegetation/land use classifications were prepared specifically for this project.

[1] The floral compendium presented in Appendix B is based on 2012 fieldwork for a project site, including a more extended area within the LASHP. Because plant species with biological value occur only on buffer lands within Elysian Park (which would not be affected), this list has not been updated to reflect the more limited project site and study area boundaries within the park. Since the 2012 fieldwork, the project site has also been modified to include additional lands within the river channel associated with the dam impoundment. Because conditions within the river channel and the associated buffer in this added area are consistent with the previously surveyed area immediately downstream, this compendium remains valid for these added areas as well.

2.4 Survey Limitations

Plant and animal observations were limited because of the timing of the surveys (mid-June). As such, it is important to note that additional species, beyond those observed in this evaluation, may occur in the study area but may not have been detected. For example, some species may not be found because they were not present at the time of day or time of year that the fieldwork was conducted. Some special survey methods may be required to determine the presence or absence of some species (e.g., nighttime surveys for bats). Therefore, the plants and wildlife species observed and reported herein are not intended to be complete lists of species present within the study area; they include only those species observed during the habitat assessment.

2.5 Regulatory Constraints

All applicable local, state, and federal laws and regulations, as well as court precedents enacted to protect and/or manage biological resources, were evaluated for their relevance and potential to constrain the proposed project. The analysis of constraints provided in this report is based on a combination of direct evaluation of the site, current regulatory information, and professional judgment.

The federal and state laws listed below are only some of the laws initially considered during all constraint analyses conducted by ICF. Note that many of the regulations listed below may not be applicable to the project at hand, but the applicability of each was considered to determine potential constraints to the project under consideration. For each law, applicable amendments to the original, resulting regulations empowered therein, and relevant judicial precedent were included.

2.5.1 Federal Laws

The federal laws listed below were considered during evaluation of the biological resources in the study area. Note that this is not an exhaustive list of all federal laws that may be considered.

- Bald and Golden Eagle Protection Act
- Endangered Species Act of 1973 (including designated critical habitat for listed species)
- Environmental Quality Improvement Act of 1970
- Federal Noxious Weed Act of 1974
- Federal Water Pollution Control Act (Clean Water Act)
- Fish and Wildlife Act of 1956
- Migratory Bird Treaty Act
- National Environmental Policy Act of 1969

2.5.2 State Laws and Regulations

The state laws and regulations listed below were considered during evaluation of the biological resources in the study area. Note that this is not an exhaustive list of all state laws and regulations that may be considered.

- California Environmental Quality Act (CEQA) (Public Resources Code Sections 21000–21177, CEQA Guidelines Sections 15000–15387)
- California Fish and Game Code (including codes for the state Endangered Species Act, those similar to the federal Migratory Bird Treaty Act, those for lake or streambed alteration agreements, and those for navigation dredging permits)

Chapter 3
Existing Conditions

The following discussions address conditions and biological resources observed or potentially present in the study area. Chapter 4 and Appendix C contain specific details regarding habitat assessments conducted for special-status resources.

3.1 Environmental Setting

The project is located within an urban area of the City of Los Angeles. A mixture of urban residential and light industrial uses is located to the east, south, and west. The Los Angeles River traverses north/south through the study area. Within the study area, the Los Angeles River is completely concrete lined. It contained a small flow (approximately 10 to 12 inches in depth) within a shallow low-flow channel during the field visit. Minimal deposition or vegetation is present within the river. Both sides of the river are flanked by active railroads. The railroads and associated lands are dominated by developed lands with some bare ground and ruderal vegetation. The lands situated to the east of the river within the study area are predominately urban/developed and contain areas of ornamental vegetation. Lands within the study area west of the river contain areas of open space, consisting of portions of Elysian Park, a City of Los Angeles Park, the LASHP, as well as urban/developed lands. Elysian Park is located in the north portion of the study area. This park is situated on a hill and contains a relatively dense cover of native and ornamental shrubs and trees. The LASHP site is characterized by native plantings, turf grass, and disked fields. The very limited portion of LASHP located within the project site consists of maintenance facilities with no vegetation.

Elevations within the study area range from approximately 280 feet above mean sea level (MSL) within the Los Angeles River to approximately 405 feet above MSL within Elysian Park.

3.2 Vegetation/Land Use Types

The majority of the study area is heavily disturbed, consisting either of disturbed non-vegetated areas or vegetation communities that are dominated by non-native and/or ruderal plant species. Table 1 provides data regarding the vegetation communities, including land use types, and acreages for each community mapped within the study area. Figure 4 (in Chapter 5) depicts the location of each vegetation community within the study area. Each vegetation community is described below in detail. The Coast Live Oak/California Walnut Woodland mapped within Elysian Park would be considered a sensitive vegetation community by CDFW.

Table 1. Vegetation Communities/Land Uses

Vegetation Community/Land Use	Project Site (acre)	500-foot Buffer (acre)
Coast Live Oak/California Walnut Woodland	------	2.48
Developed Lands	3.77	45.33
Interpretive Nature Walk Area	------	1.59
Open Water	2.47	1.91
Ornamental Vegetation	------	5.07
Ruderal Vegetation	0.05	3.77
Total	**6.29**	**60.15**

3.2.1 Coast Live Oak Woodland/California Walnut Grove—*Quercus Agrifolia* Woodland Alliance/*Juglans Californica* Woodland Alliance

Approximately 2.48 acres of Coast Live Oak Woodland/California Walnut Grove were mapped within the 500-foot buffer area. This vegetation community consists of lands situated on the southern slopes of Elysian Park and contains an assorted mixture of native and ornamental vegetation but is dominated by native trees such as coast live oak (*Quercus agrifolia*) and southern California black walnut (*Juglans californica*). The understory is composed chiefly of non-native brome grasses (*bromus* sp.), oat grass (*Avena* sp.), and native forbs such as California wishbone-bush (*Mirabilis laevis*) and narrow-leaved bed straw (*Galium angustifolium*). Additional native vegetation observed within this community consists of toyon (*Heteromeles arbutifolia*), laurel sumac (*Malosma laurina*), blue elderberry (*Sambucus nigra* subsp. *caerulea*), and holly-leaved cherry (*Prunus ilicifolia*). This vegetation community also contains a substantial cover of ornamental vegetation, including gum tree (*Eucalyptus* sp.), ornamental pine (*Pinus* sp.), tree of heaven (*Ailanthus altissima*), Peruvian pepper tree (*Schinus molle*), Brazilian pepper tree (*Schinus terebinthifolius*), Mexican fan palm (*Washingtonia robusta*), Canary Island date palm (*Phoenix canariensis*), acacia (*Acacia* sp.), blue jacaranda (*Jacaranda mimosifolia*), and bottlebrush tree (*Callistemon* sp.).

3.2.2 Developed Lands

Approximately 3.77 acres of Developed Lands were mapped within the project site and an additional 45.33 acres were mapped within the 500-foot buffer area. This land use consists of paved surfaces, buildings, and railways. With the exception of small areas of ornamental vegetation, this land use is mostly void of vegetation.

3.2.3 Interpretive Nature Walk Area

Approximately 1.59 acres of lands classified as Interpretive Nature Walk Area were mapped within the buffer area. This land use area contains a variety of planted native shrubs and trees situated along pathways. A small linear feature, approximately 1 foot deep, has been created between constructed berms within this portion of the study area. Although this feature appear capable of

holding water, no sign of long-term ponding was present (e.g., cracked soils, facultative or wetter wetlands plants). This feature was deemed not to meet the criteria for a jurisdictional stream or wetland feature in the related jurisdictional delineation report (ICF 2013)

This area is irrigated and includes patches with mulch cover, bare ground, and sparse cover of grasses. Plants observed within this area all appear to be recently planted and consist of a mixture of well-spaced individuals of toyon, California sagebrush (*Artemisia californica*), black sage (*Salvia mellifera*), white sage (*Salvia apiana*), purple sage (*Salvia leucophylla*), California mugwort (*Artemisia douglasiana*), common sunflower (*Helianthus annuus*), brittlebush (*Encelia farinosa*), California encelia (*Encelia californica*), coastal goldenbush (*Isocoma menziesii*), and common yarrow (*Achillea millefolium*). Coast live oak, Fremont's cottonwood (*Populus fremontii*), bush mallow (*Malacothamnus fasciculatus*), western sycamore (*Platanus racemosa*), and alder (*Alnus sp.*) also occur.

3.2.4 Open Water

Approximately 2.47 acres of Open Water associated with the low flow of the Los Angeles River was mapped within the project site, and an additional 1.91 acres were mapped within the 500-foot buffer area. No vegetation is associated with the open water.

3.2.5 Ornamental Vegetation

Approximately 5.07 acres of Ornamental Vegetation were mapped within the 500-foot buffer area. Ornamental vegetation mapped within the study area is consistent with ornamental vegetation found throughout the Los Angeles basin. Ornamental vegetation present within the study area includes baby sun-rose (*Aptenia cordifolia*), gum tree, ornamental pine, tree of heaven, Peruvian pepper tree, Brazilian pepper tree, Mexican fan palm, Canary Island date palm, and blue jacaranda.

3.2.6 Ruderal Vegetation

Approximately 0.05 acre of Ruderal Vegetation was mapped within the project site, and an additional 3.77 acres were mapped within the 500-foot buffer area. Ruderal vegetation was mapped within the study area adjacent to the railway lands flanking the river, within an undeveloped area south of North Spring Street, and within a strip of land located between North Broadway and the LAHSP. Ruderal vegetation observed is common to the region and consists of both native and non-native species. Areas mapped as Ruderal Vegetation are a result of anthropogenic disturbances and typically contain greater than 50% bare ground. Dominant plants observed within this community include non-native brome grasses and oat grass. Additional species present include castor bean (*Ricinus communis*), tocalote (*Centaurea melitensis*), tree tobacco (*Nicotiana glauca*), mustard (*Brassica* sp.), lamb's quarters (*Chenopodium album*), smilo grass (*Stipa miliacea* var. *miliacea*), horseweed (*Erigeron canadensis*), fennel (*Foeniculum vulgare*), cheeseweed (*Malva parviflora*), ryegrass (*Festuca perennis*), and yellow sweet clover (*Melilotus indicus*).

3.3 Soils

The USDA/NRCS Soil Survey Geographic Database (USDA/NRCS 2013) has mapped the following soil types within the project site and study area:

- Altamont clay loam, and
- Hanford fine sandy loam.

Hanford fine sandy loam is mapped for entire project site and most of the study area (Figure 3). The western portion of the study area is mapped as Altamont clay loam.

3.4 Plants

With the exception of the vegetation associated with Elysian Park, the vegetation within the study area consists chiefly of native and non-native ruderal species common to urban areas in the greater Los Angeles area. One special-status species was determined to be present in Elysian Park within the 500-foot study area: southern California black walnut (*Juglans californica*). This tree is a CNPS CRPR List 4.2 species, a species of local concern in the Los Angeles region, and a City of Los Angeles protected tree.

Appendix B provides a list of all plant species observed on the project site during the habitat assessment.

No USFWS-designated critical habitat for federally threatened and/or endangered plant species is present within a 2-mile radius of the study area (USFWS 2013b). In addition, no occurrences of federally endangered or threatened plant species are mapped within a 2-mile radius of the study area (USFWS 2013a).

3.4.1 Native Trees

The Interpretive Nature Walk Area within LASHP contains several individuals of planted western sycamore and coast live oak. In addition, the northern edge of the study area within Elysian Park contains several older individuals of coast live oak and southern California black walnut. Western sycamore, coast live oak and southern California black walnut are designated as City of Los Angeles protected trees per Article 6, Sections 46.00 through 46.06 of the Los Angeles City Municipal Code: Preservation of Protected Trees.

The trees located within the LASHP and Elysian Park portions of the study area would not be affected either directly or indirectly through project implementation.

3.5 Wildlife

Wildlife species that were observed within the study area are considered common to the general project vicinity. The majority of species detected were birds. Bird species observed during the habitat assessment include mallard (*Anas platyrhynchos*), killdeer (*Charadrius vociferous*), black-necked stilt (*Himantopus mexicanus*), red tail hawk (*Buteo jamaicensis*), rock pigeon (*Columba livia*), mourning dove (*Zenaida macroura*), Anna's hummingbird (*Calypte anna*), white-throated swift (*Aeronautes saxatalis*), barn swallow (*Hirundo rustica*), cliff swallow (*Petrochelidon pyrrhonota*), northern rough-winged swallow (*Stelgidopteryx serripennis*), black phoebe (*Sayornis nigricans*), American crow (*Corvus brachyrhynchos*), common raven (*Corvus corax*), bushtit (*Psaltriparus minimus*), northern mockingbird (*Mimus polyglottos*), California towhee (*Pipilo crissalis*), European starling (*Sturnus vulgaris*), house finch (*Carpodacus mexicanus*), lesser goldfinch (*Carduelis mexicana*), and house sparrow (*Passer domesticus*).

One reptile species, western fence lizard (*Sceloporus occidentalis*), was observed in the study area (within the SHP).

Mammals observed within the project site and/or study area include desert cottontail (*Sylvilagus audubonii*) and California ground squirrel (*Spermophilus beecheyi*).

No USFWS-designated critical habitat for federally threatened and/or endangered wildlife species is present within a 2-mile radius of the study area (USFWS 2013b). In addition, no occurrences of federally endangered or threatened wildlife species are mapped within a 2-mile radius of the study area (USFWS 2013a).

3.6 Federal and State Jurisdictional Resources

The Los Angeles River is a potential jurisdictional water of the U.S. Army Corps of Engineers (USACE) and the Regional Water Quality Control Board (RWQCB) and a potential CDFW jurisdictional feature. A jurisdictional delineation was prepared for the project, the results of which are presented under separate cover. Please see the jurisdictional delineation report prepared for the proposed project titled *Jurisdictional Delineation Report, Bending the River Back into the City Project, Los Angeles County, California,* dated August 2013 (ICF 2013), for a complete analysis of the federal and state jurisdictional resources present at the project site.

Chapter 4
Results of Habitat Assessments

The following discussions address the results of habitat assessments conducted for special-status plant and wildlife species occurring or potentially occurring within the study area. Appendix C contains specific details regarding the habitat assessments conducted for special-status resources.

4.1 Special-Status Plants

Habitat assessments for all special-status plant species evaluated are presented in Appendix C. Of the 40 special-status species evaluated, one species was determined to be present within the study area: southern California black walnut (*Juglans californica*), a CNPS CRPR List 4.2 species and a species of local concern in the Los Angeles region. An additional seven species were determined to have a low potential to occur within the study area associated with the woodland habitat within Elysian Park in the northern portion of the study area: Nevins's barberry (*Berberis nevinii*; FE, SE, CRPR 1B.1), round-leaved filaree (*California macrophylla*; CRPR 1B.1), slender mariposa lily (*Calochortus clavatus* var. *gracilis*; CRPR 1B.2), Plummer's mariposa lily (*Calochortus plummerae*; CRPR 4.2), Lewis' evening primrose (*Camissoniopsis lewisii*; CRPR 3), mesa horkelia (*Horkelia cuneata* var. *puberula*; CRPR 1B.1), and Robinson's pepper-grass (*Lepidium virginicum* var. *robinsonii*; CRPR 1B.2). These species are not expected to occur outside of the woodland habitat associated with Elysian Park.

Project activity and resultant impacts will not extend into Elysian Park and will not alter conditions within the study area in a manner that could adversely affect woodland habitat within Elysian Park. Therefore, the southern California black walnut occurring within Elysian Park and the additional seven special-status species potentially present within Elysian Park are not expected to be directly or indirectly affected by project activities.

4.2 Special-Status Wildlife

Habitat assessments for all special-status wildlife species evaluated are presented in Appendix C. Of the 28 special-status species evaluated, six species were determined to have a moderate potential to occur within the study area: American peregrine falcon (*Falco peregrinus anatum*), big free-tailed bat (*Nyctinomops macrotis*, SSC), pallid bat (*Antrozous pallidus*; SSC), pocketed free-tailed bat (*Nyctinomops femorosaccus*; SSC), western mastiff bat (*Eumops perotis californicus*; SSC), and western yellow bat (*Lasiurus xanthinus*; SSC).

4.2.1 American Peregrine Falcon

American peregrine falcon is designated as a State Fully Protected (SFP) species. This species is most commonly observed nesting on high cliffs near large foraging areas such as coastal estuaries; however, the American peregrine falcon is also known to nest in urban areas on high buildings, bridges, and other structures. It was determined that the medium-sized buildings and structures within the study area provide suitable nesting and foraging habitat for the species. The proposed

physical improvements and operational aspects of the proposed project would not significantly alter conditions within the project site and study area with respect to suitability of habitat for foraging. Compliance with the established regulatory provisions under the Migratory Bird Treaty Act and California Fish and Game Code will ensure that take of a peregrine falcon nest does not occur (see Recommendations in Section 5).

4.2.2 Special-Status Bats

Five special-status bat species were determined to have a moderate potential to utilize the study area in some capacity: big free-tailed bat, pallid bat, pocketed free-tailed bat, western mastiff bat, and western yellow bat. All five of these bat species are designated as SSC. In addition, these bat species were determined to have moderate potential to utilize the study area in both a roosting and foraging capacity. In particular, the bridges that cross the Los Angeles River, the buildings and other structures with small exposed crevices, and the ornamental fan palms and date palms within the study area have the greatest potential to support roosting bats. Areas within the study area with the greatest potential to support foraging bats include the bridges crossing the Los Angeles River and Elysian Park.

4.3 Nesting Birds

All developed and undeveloped portions of the study area contain suitable nesting habitat for a variety of avian species, including, but not limited to, those species observed during the habitat assessment. Several bird species, including black phoebe, northern rough-winged swallow, barn swallow, and white throated swift, were observed nesting and foraging within the Los Angeles River area and the LASHP. Black-necked stilt was observed nesting within the Los Angeles River during the site visit.

4.4 Raptor Foraging

Portions of the study area contain suitable raptor foraging habitat. These areas include lands within the LASHP, Elysian Park, the Los Angeles River, and the urban parks/recreational fields within the study area. Considering the location, scale and nature of the proposed improvements, it was determined that the project would not present a significant impact with respect to raptor foraging within the project site or the extended study area.

Chapter 5
Impacts

5.1 Impacts on Vegetation Types and Land Uses

The project would affect approximately 6.24 acres of lands within the project site (Figure 4). Of the 6.24 acres of lands that would be affected, 3.77 acres consist of Developed Lands. Developed Lands consist of concrete and asphalt areas and existing structures and contain no direct biological value. Impacts on 3.77 acres of Developed Lands would be less than significant, and no mitigation would be required.

The remaining 2.47 acres of affected lands consist of Open Water areas associated with the Los Angeles River. Within the project site, the Los Angeles River is completely concrete lined, consisting of a trapezoidal channel that does not support any wetland or vegetated riparian habitat. The Los Angeles River within the project site does not support any habitat for special-status species; however, the area does support foraging and nesting habitat for birds such as black-necked stilt, killdeer, ducks, swallows, and swifts as well as foraging habitat for bats. Given the relatively small size of the area to be affected in relation to the remaining nesting and foraging habitat within the vicinity of the project, impacts on 2.47 acres of Open Water within the Los Angeles River would be considered less than significant, and no mitigation would be required to offset impacts on nesting bird habitat. However, the Open Water areas of the Los Angeles River are within the jurisdiction of USACE, the RWQCB and CDFW, and consultation would be required with these agencies to determine if mitigation would be required to offset impacts on jurisdictional waters.

Figure 4 depicts the project site as overlapping with 0.05 acre of Ruderal Lands located between the railroad right-of-way and the Los Angeles River; however, the project plans state that these lands will not be affected because the project would tunnel underneath this area. As such, no impact on Ruderal Lands is expected to occur.

5.2 Impacts on Special-Status Wildlife

5.2.1 Special-Status Bats

The project site contains bridges and structures that provide suitable roosting habitat for the following special-status bat species: big free-tailed bat, pallid bat, pocketed free-tailed bat, western mastiff bat, and western yellow bat. Impacts on roosting special-status bats would be considered significant. Prior to project implementation a qualified biologist should inspect potential roosting locations to determine if bats are roosting in order to avoid impacts. In addition to roosting habitat for bats, the project site also provides low-moderate quality foraging habitat for special-status bat species. The proposed physical improvements and operational aspects of the proposed project would not significantly alter conditions within the project site with respect to suitability of habitat for bat foraging. As such, impacts associated with project implementation would be considered less than significant in respect to bat foraging.

5.3 Impacts on Nesting Birds

The study area and project site support suitable habitat for nesting birds. Impacts on 6.24 acres of lands, consisting of 3.77 acres of Developed Lands and 2.47 acres of Open Water, are expected to occur from project implementation. Because of the general lack of vegetation and the concrete-lined nature of the Los Angeles River within the project site, the areas to be affected would support only nesting habitat for ground-nesting birds, such as black-necked stilt and killdeer, and birds such as rock pigeon, mourning dove, house sparrow, and house finch, which commonly nest on structures and bridges in developed areas. Impacts on nesting birds that are protected under the Migratory Bird Treaty Act are prohibited, and a nesting bird survey should be conducted during the nesting bird season and prior to any disturbance within the project site to document the presence or absence of nesting birds. A nesting bird survey and the avoidance of work within nesting bird areas will ensure that no impacts will occur and reduce potential impacts on nesting birds to a level below significant.

Chapter 6
Recommendations

The following section discusses recommendations to offset potential indirect or direct impacts on special-status species or resources. Where applicable, specific mitigation measures have been provided to ensure that impacts on special-status biological resources would be mitigated to a level considered less than significant pursuant to CEQA.

6.1 Special-Status Bats

Five special-status bat species were determined to have the potential to roost and forage within the study area. These species are big free-tailed bat, pallid bat, pocketed free-tailed bat, western mastiff bat, and western yellow bat. The following recommendations provide for inspection of potential roosting locations before work commences and identify avoidance measures to be implemented in the event that bats are determined to be present within potential impact areas.

If work is expected to occur within 100 feet of trees or other structures with bat roost potential during the maternity season (April 15 to August 15), a qualified bat biologist should conduct a one-night emergence survey during acceptable weather conditions (i.e., no rain or high winds, night temperatures above 45˚F) or, if conditions permit, physically examine the tree or structure for presence or absence of bats (such as with lift equipment) before the start of construction. If the roost is determined to be occupied at that time, the tree or structure would be avoided until after the maternity season when young are volant. If trees or structures with bat roost potential require removal during the winter months when bats are in torpor (October 31 to February 15 [dependent on specific weather conditions]), a qualified bat biologist would physically examine the tree or structure (e.g., with lift equipment) (if conditions permit) for the presence or absence of bats before the start of construction. If the tree or structure is determined to be occupied at that time, the tree or structure would be avoided until after the winter season when bats are once again active.

6.2 Nesting Birds

Migratory nongame native bird species are protected under the federal Migratory Bird Treaty Act. Additionally, Sections 3503, 3503.5, and 3513 of the California Fish and Game Code prohibit take of all birds and their active nests. To avoid impacts on nesting bird species in violation of these federal and state, it is recommended that the construction of the project be conducted outside of the recognized nesting bird season (February 15 through September 15).

If work cannot be avoided during the nesting bird season, then, prior to initiation of the project, a qualified biologist should conduct a pre-construction nesting bird survey within all areas of breeding/nesting habitat within and adjacent to the construction limits. If active nests are found, the following buffers are recommended to be used until a qualified biologist determines that nesting activities have ceased: 500 feet for raptors and any listed species and 100 feet for all other bird species unless otherwise authorized by CDFW.

6.3 Jurisdictional Waters

The Los Angeles River is a potential jurisdictional water of USACE and the RWQCB and a potential CDFW jurisdictional feature. A jurisdictional delineation was prepared for the project, the results of which are presented under separate cover. Please see the jurisdictional delineation report prepared for the proposed project titled *Jurisdictional Delineation Report, Bending the River Back into the City Project, Los Angeles, County, California,* dated August 2013 (ICF 2013), for a complete analysis of the federal and state jurisdictional resources present at the project site.

The proper permits and agreements must be obtained from USACE, the RWQCB and CDFW prior to construction in areas identified in the jurisdictional delineation report as jurisdictional waters or resources.

Chapter 7
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Appendix A

Site Photographs

Appendix A: Site Photographs
Bending the River Back into the City Project



Photograph #	1
Photo Date	06/18/12
Location	Photo taken from North Spring Street bridge
Direction	Photo looking north
Comment	Photo of habitat/lands within and immediately adjacent to the Los Angeles River between the North Spring Street and the North Broadway bridges. The Elysian Park woodlands are visible beyond the bridge in upper left



Photograph #	2
Photo Date	06/18/12
Location	Photo taken from North Broadway bridge
Direction	Photo looking north.
Comment	Photo of habitat/lands within and immediately adjacent to the Los Angeles River north of North Broadway bridge. The rail bridge crossing the river near the upstream end of the project site is visible in the midground.

Appendix A: Site Photographs
Bending the River Back into the City Project



Photograph #	3
Photo Date	06/18/12
Location	Photo taken from N. Spring Street bridge.
Direction	Photo looking south.
Comment	Photo of habitat/lands within and immediately adjacent to the Los Angeles River south of North Spring Street bridge.



Photograph #	4
Photo Date	06/18/12
Location	Photo taken from the terminus of Baker Street.
Direction	Photo looking northeast.
Comment	Photo of habitat/lands where the proposed water wheel will be constructed.

Appendix A: Site Photographs
Bending the River Back into the City Project



Photograph #	5
Photo Date	06/18/12
Location	Photo taken from N. Spring Street bridge.
Direction	Photo looking northwest.
Comment	Photo of habitat/lands where the proposed water wheel will be constructed in foreground; Elysian Park ornamental vegetation and woodland in background.



Photograph #	6
Photo Date	06/18/12
Location	Photo taken from within Los Angeles State Historical Park.
Direction	Photo looking southwest.
Comment	Nature Walk area within Los Angeles State Historical Park.

Appendix A: Site Photographs
Bending the River Back into the City Project



Photograph #	7
Photo Date	06/18/12
Location	Photo taken from within Los Angeles State Historical Park.
Direction	Photo looking northwest.
Comment	Nature Walk area within Los Angeles State Historical Park.

Appendix B

Floral Compendium

Appendix B: Floral Compendium

Scientific Name	Common Name	Special Status
GYMNOSPERMS		
Pinaceae - Pine family		
Pinus sp.	Ornamental pine	
EUDICOTS		
Adoxaceae - Muskroot family		
Sambucus nigra ssp. caerulea	Blue elderberry	
Aizoaceae - Fig-marigold family		
* *Aptenia cordifolia*	Baby sun-rose	
Anacardiaceae - Sumac Or Cashew family		
Malosma laurina	Laurel sumac	
* *Schinus molle*	Peruvian Pepper tree	
* *Schinus terebinthifolius*	Brazilian pepper tree	
Apiaceae - Carrot family		
* *Foeniculum vulgare*	Fennel	
Asteraceae - Sunflower family		
Achillea millefolium	Common yarrow	
Artemisia californica	California sagebrush	
Artemisia douglasiana	California mugwort	
Baccharis salicifolia ssp. salicifolia	Mule fat	
* *Centaurea melitensis*	Tocalote	
Encelia californica	California brittlebush	
Encelia farinosa	Brittlebush	
* *Erigeron bonariensis*	Flax-leaved horseweed	
Erigeron canadensis	Horseweed	
Helianthus annuus	Common sunflower	
* *Helminthotheca echioides*	Bristly ox-tongue	
Heterotheca grandiflora	Telegraph weed	
Isocoma menziesii	Coastal goldenbush	
* *Lactuca serriola*	Prickly lettuce	
* *Pseudognaphalium luteoalbum*	Jersey cudweed	
* *Sonchus asper ssp. asper*	Prickly sow thistle	
Stephanomeria sp.	wire-lettuce	
* *Taraxacum officinale*	Common dandelion	
Betulaceae - Birch family		
Alnus sp.	Alder	
Bignoniaceae - Bignonia family		

Scientific Name	Common Name	Special Status
* *Jacaranda mimosifolia*	Blue jacaranda	
Brassicaceae - Mustard family		
Brassica sp.	Mustard	
* *Sisymbrium irio*	London rocket	
Chenopodiaceae - Goosefoot family		
* *Chenopodium album*	Lamb's quarters	
* *Salsola tragus*	Russian thistle, tumbleweed	
Euphorbiaceae - Spurge family		
* *Chamaesyce maculata*	Spotted spurge	
* *Ricinus communis*	Castorbean	
Fabaceae - Legume family		
Acacia sp.	Acacia	
Acmispon glaber	Deerweed, California broom	
* *Medicago sativa*	Alfalfa	
* *Melilotus indicus*	Yellow sweetclover	
Fagaceae - Oak family		
Quercus agrifolia	Coast live oak, encina	
Geraniaceae - Geranium family		
* *Erodium cicutarium*	Redstem filaree	
Juglandaceae - Walnut family		
Juglans californica	Southern California black walnut	CRPR 4.2
Lamiaceae - Mint family		
Salvia apiana	White sage	
Salvia leucophylla	Purple sage	
Salvia mellifera	Black sage	
Malvaceae - Mallow family		
Malacothamnus fasciculatus	Bush mallow	
* *Malva parviflora*	Cheeseweed, little mallow	
Myrtaceae - Myrtle family		
* *Callistemon sp.*	Bottlebrush tree	
Eucalyptus sp.	Gum tree	
Nyctaginaceae - Four O'clock family		
Mirabilis laevis	California wishbone-bush	
Oleaceae - Olive family		
Fraxinus sp.	Ash	
Papaveraceae - Poppy family		
Eschscholzia californica	California poppy	
Platanaceae - Plane Tree, Sycamore family		

Scientific Name	Common Name	Special Status
Platanus racemosa	Western sycamore	
Polygonaceae - Buckwheat family		
Eriogonum fasciculatum	California buckwheat	
Persicaria lapathifolia	Willow weed	
* *Polygonum aviculare*	Knotweed, knotgrass	
Rosaceae - Rose family		
Heteromeles arbutifolia	Toyon	
Prunus ilicifolia	Holly-leaved cherry	
Rubiaceae - Madder family		
Galium angustifolium	Narrow-leaved bedstraw	
Salicaceae - Willow family		
Populus fremontii	Fremont's cottonwood	
Salix laevigata	Red willow	
Simaroubaceae - Quassia Or Simarouba family		
* *Ailanthus altissima*	Tree of heaven	
Solanaceae - Nightshade family		
Datura wrightii	Sacred thorn-apple	
* *Nicotiana glauca*	Tree tobacco	
Vitaceae - Grape family		
Vitis californica	California wild grape	
Zygophyllaceae - Caltrop family		
* *Tribulus terrestris*	Puncturevine	
MONOCOTS		
Arecaceae - Palm family		
* *Phoenix canariensis*	Canary Island date palm	
* *Washingtonia robusta*	Mexican fan palm	
Poaceae - Grass family		
Avena sp.	Oat grass	
* *Bromus catharticus*	Rescuegrass	
* *Bromus diandrus*	Ripgut grass	
* *Bromus madritensis ssp. madritensis*	Foxtail chess, madrid brome	
* *Cynodon dactylon*	Bermuda grass	
Elymus triticoides	Beardless wild rye	
* *Festuca perennis*	Rye grass	
* *Hordeum vulgare*	Barley	
* *Pennisetum setaceum*	Crimson fountain grass	
* *Stipa miliacea var. miliacea*	Smilo grass	
Stipa pulchra	Purple needle grass	

Scientific Name	Common Name	Special Status

Legend

*= Non-native or invasive species

Special Status:

Federal:
FE = Endangered
FT = Threatened

State:
SE = Endangered
ST =Threatened

CRPR – California Rare Plant Rank
1A. Presumed extinct in California
1B. Rare or Endangered in California and elsewhere
2. Rare or Endangered in California, more common elsewhere
3. Plants for which we need more information - Review list
4. Plants of limited distribution - Watch list

Threat Ranks
.1 - Seriously endangered in California
.2 – Fairly endangered in California

Appendix C

Special-Status Species Table

Appendix C
Special-Status Species Information

This appendix addresses all species with applicable special regulatory or management status whose general range includes the study area or whose habitat occurs within or near the study area and/or vicinity. Information provided includes: 1) definitions of terms to describe likelihood of occurrence, 2) a table of special-status codes and their meanings, and 3) a species information table listing the English and scientific names, current special-status, likelihood of occurrence within the project site, and specific notes relevant to likelihood of occurrence.

Conclusions provided in this report are limited to biology, and do not address regulatory or management issues. For interpretation of this information under applicable laws, regulations, and court precedent, see the relevant portion(s) of the report. Judgments regarding likelihood of occurrence are based on evaluation of available biological information regarding regional and local conditions, species biology, available evaluations of the study area and vicinity, and professional experience conducting field investigations across California over many years. Though professional, such judgments are necessarily subjective at least in part.

Specific factors substantially affect likelihood of occurrence for individual species on any particular study area. These factors are relevant at multiple scales, including regionally, locally, and within the study area. These factors include the presence or absence of other particular species (e.g., predators and prey), climate, ongoing disturbances, historical land use, and other past disturbances such as fire history, surface and subsurface hydrology, soil texture and chemistry, study area and habitat size and topology (i.e., shape and fragmentation), past population fluctuations of the species in response to random and nonrandom events, and many other factors, including many not readily visible. Note that some species, including some amphibians and many birds and bats, can occur in multiple roles. Thus, likelihood of occurrence, habitat use, and abundance may vary accordingly.

Finally, note that likelihood of occurrence for a given species refers to a time scale of a few years up to perhaps 10 years under current or assumed resources and conditions.

Terms for Likelihood of Occurrence in the Study Area

Confirmed Absent

If the likelihood of occurrence is *confirmed absent*, the species is confirmed to be absent on the study area as a formal and/or practical matter. Most often, this is a determination based on negative results of a focused survey for the species conducted in appropriate habitat at appropriate time(s) of year, using biologically sound methods and qualified personnel. In the remaining cases, it may be based on a simple study area examination, where it is easily determined that the species is absent because of the study area context. For example, a tidal marsh insect would not occur in a dry mountainside study area, or a disturbance-intolerant chaparral shrub would not occur in a long-standing, degraded grassland study area located far from chaparral. When a species is confirmed absent, the relevant fieldwork in all cases was conducted within a time frame sufficiently recent to conclude that the species remains absent, based on study area conditions and the species' known ecology. In most cases a specific, established survey protocol and/or guidelines have been followed.

Less than Reasonable

If the potential to occur is *Less than Reasonable*, the likelihood of occurrence, although remotely possible, is less than that required for any potentially applicable regulatory threshold. Further, the likelihood that the site is meaningfully valuable to any population(s) of this taxon is Less than Reasonable. The species may or may not include the study area within its current, general range. However, no appropriate, or adequately extensive, or effectively connected habitat is present. Neither the species nor any indication of its presence was detected. In some cases, based on the best available information, this likelihood may indicate that, the study area has a very high probability of being outside of the species' current range. In all of the above cases, the species may not be definitively ruled out but is strongly believed to be absent based on professional evaluation of all available evidence. In some cases, the species may occur on rare occasions and in low numbers, but with no more than brief, incidental use of the study area; that is, the site is also judged to lack any important function for the species. Certainly, there are no substantial populations directly utilizing the study area at any time of year. Further evaluation should not normally be required.

Low

If the potential to occur is *low*, occurrence of the species is reasonable but unlikely because of some combination of facts. For example, 1) the study area was the subject of unsuccessful searches conducted under relevant and reasonable circumstances, 2) potential habitat present is marginal or minimal in extent, 3) the best available information suggests the species is absent from the

study area, and/or 4) available information sheds no clear light on the species likelihood on the study area, but it is known to be rare at best in the vicinity. Neither the species nor any indication of its presence was detected. Although individuals may have been missed, it is unlikely that substantial populations are present. Further evaluation should usually not be required for individual species except, in most cases, for biologically threatened or endangered species. Note however, that where several non-listed species hold this status, a higher likelihood of occurrence for "one or more" will generally hold. This is due both to the increased number of species and the fact that an array of possibilities often correlates with greater site biodiversity and lower relevant (but not readily detected) disturbance levels.

Moderate

If the potential to occur is *moderate*, the study area is within the range of the species, and contains potentially appropriate habitat. Neither individuals nor diagnostic sign were detected. It is nevertheless reasonable that some individuals may have been overlooked. The best available information on the species with regard to the study area is either very uncertain, or may be equally weighted for and against occurrence. Depending upon local and special legal status, extent of habitat, and the nature and sensitivity of the project, focused surveys for the species may be warranted or presence may be assumed.

High

If the potential to occur is *high*, the study area is known to be within the range of the species, and contains potential habitat with a high likelihood of occupancy. Although no individuals or diagnostic sign were detected during current fieldwork by a qualified observer, the species is likely to be present to some degree given the best available information. Depending upon regulatory status, local rarity, public interest, extent of habitat on the study area, and the nature of potential project impacts, a substantial basis may exist for either conducting focused surveys for the species or for assuming presence.

Confirmed Present

If the likelihood of occurrence is *confirmed present*, a qualified biologist or other reliable source has confirmed the presence of the species and there is no specific evidence that the species has subsequently become absent. Depending on the species and other information available, it may or may not be possible to determine, without further studies, what portions of the study area are currently in use.

Sensitive Plant Species

Scientific Name	Common Name	Status	General Habitat Description	Habitat Present/ Absent	Rationale
Arctostaphylos glandulosa subsp. *gabrielensis*	San Gabriel manzanita	CRPR 1B.2	Rocky chaparral. 595-1,500 meters elevation. Blooms in March.	HA	**Less than Reasonable.** The study area does not contain suitable rocky chaparral habitat. In addition, the study area is below the known elevational range of the species.
Arenaria paludicola	marsh sandwort	FE, SE, CRPR 1B.1	Sandy openings within freshwater marshes and swamps. 3-170 meters elevation. Blooms May-August. Last southern California record is from 1899.	HA	**Less than Reasonable.** The study area does not contain freshwater swamps and marsh habitat.
Astragalus brauntonii	Braunton's milk-vetch	FE, CRPR 1B.1	Recent burned or disturbed areas within chaparral, coastal scrub and valley and foothill grasslands. Usually associated with sandstone or carbonate substrates. 4-640 meters elevation. Blooms January-August.	HA (currently)	**Less than Reasonable.** The study area lacks sandstone or carbonate substrates. This species is not expected to be currently present within the project site, however, it may occur within the seed bank along the northern edge of the study area within Elysian Park. Seeds of this species may germinate in this area if the area was to burn or undergo sufficient ground disturbance.
Astragalus tener var. *titi*	coastal dunes milk-vetch	FE, SE, CRPR 1B.1	Vernally mesic areas within sandy coastal bluff scrub, coastal dunes and mesic coastal prairie. Below 50 meters elevation. Blooms March-May.	HA	**Less than Reasonable.** The study area does not contain sandy coastal bluff scrub oastal dunes or coastal prairie habitat.

Scientific Name	Common Name	Status	General Habitat Description	Habitat Present/ Absent	Rationale
Atriplex parishii	Parish's saltscale	CRPR 1B.1	Alkaline meadows, vernal pools, chenopod scrub and playas. Usually on drying alkaline flats with fine soils. 25-1,900 meters elevation. Blooms June-October.	HA	**Less than Reasonable.** The study area does not contain alkaline meadows, vernal pools, chenopod scrub and playa habitat.
Atriplex serenana var. *davidsonii*	Davidson's saltscale	CRPR 1B.2	Alkaline areas within coastal bluff scrub and coastal scrub. 10-200 meters elevation. Blooms April-October.	HA	**Less than Reasonable.** The study area lacks coastal bluff scrub and coastal scrub habitat.
Berberis nevinii	Nevin's barberry	FE, SE, CRPR 1B.1	Gravelly wash margins in alluvial scrub or coarse soils in chaparral 274-825 meters elevation. Blooms March through June. Identifiable year-round.	HA	**Low Potential.** The northern edge of the study area contains portions of Elysian Park which does not contain habitat for this species. However, this species was frequently planted throughout Los Angeles and Elysian Park may contain planted individuals of this species.
California macrophylla	round-leaved filaree	CRPR 1B.1	Clay soils in cismontane woodland and valley and foothill grassland communities. 15-200 meters elevation. Blooms March-May.	HP	**Low Potential.** The northern edge of the study area contains portions of Elysian Park which contains marginal habitat for this species. Areas of the study area outside of Elysian Park do not have potential habitat for this species.

Scientific Name	Common Name	Status	General Habitat Description	Habitat Present/ Absent	Rationale
Calochortus clavatus var. *gracilis*	slender mariposa lily	CRPR 1B.2	Chaparral, coastal scrub and valley and foothill grasslands. 320-1000 meters elevation. Blooms March-June.	HP	**Low Potential.** The northern edge of the study area contains portions of Elysian Park which contains marginal habitat for this species. Areas of the study area outside of Elysian Park do not have potential habitat for this species.
Calochortus plummerae	Plummer's mariposa lily	CRPR 4.2	Sandy or rocky sites of granitic or alluvial material in valley and foothill grassland, coastal scrub, chaparral, cismontane woodland and lower coniferous forests. 100-1,700 meters elevation. Blooms May-July.	HP	**Low Potential.** The northern edge of the study area contains portions of Elysian Park which contains marginal habitat for this species. Areas of the study area outside of Elysian Park do not have potential habitat for this species.
Calochortus weedii var. *intermedius*	intermediate mariposa lily	CRPR 1B.2	Rocky, calcareous areas witin chaparral, coastal scrub and valley and foothill grassland. 105-855 meters elevation. Blooms May-July.	HA	**Less than Reasonable.** The study area does not contain rocky, calcareous areas within chaparral, coastal scrub and valley and foothill grassland habitat. In addition, the study area is outside of the range of this species.
Calystegia sepium subsp. *binghamiae*	Santa Barbara morning glory	CRPR 1B.1	Coastal marshes and swamps and alluvial riparian scrub. Historically known from wet/marshy places but may be present in drier situations.	HA	**Less than Reasonable.** The study area does not contain coastal marsh, coastal swamp or alluvial riparian scrub habitat.

Scientific Name	Common Name	Status	General Habitat Description	Habitat Present/ Absent	Rationale
Camissoniopsis lewesii	Lewis' evening primrose	CRPR 3	Coastal bluff scrub, cismontane woodland, coastal dunes, coastal scrub, and sandy or clay areas within valley and foothill grasslands. Below 300 meters elevation. Blooms May-June.	HP	**Low Potential.** The northern edge of the study area contains portions of Elysian Park which contains marginal habitat for this species. Areas of the study area outside of Elysian Park do not have potential habitat for this species.
Centromadia parryi subsp. *australis*	southern tarplant	CRPR 1B.1	Margins of marshes and swamps, vernally mesic valley and fooothill grassland and vernal pools. Below 425 meters elevation. Blooms May-November.	HA	**Less than Reasonable.** The study area does not contain marsh or swamps, vernally mesic valley and foothill grasslands and/or vernal pools.
Chorizanthe parryi var. *fernandina*	San Fernando Valley spineflower	FC, FE, CRPR 1B.1	Coastal scrub and valley and foothill grasslands. 150-1,220 meters elevation. Blooms April-July.	HA	**Less than Reasonable.** The study area does not contain coastal scrub and valley and foothill grassland habitat.
Chorizanthe parryi var. *parryi*	Parry's spineflower	CRPR 1B.1	Sandy or rocky openings within chaparral, cismontane woodland, coastal scrub, and valley and foothill grasslands. 275-1,220 meters elevation. Blooms April-June.	HA	**Less than Reasonable.** The study area does not contain sandy or rocky openings within chaparral, cismontane woodland, coastal scrub and valley and foothill grassland habitat.
Cladium californicum	California saw-grass	CRPR 2.2	Meadows and seeps, alkaline or freshwater marshes and swamps. 60-600 meters elevation. Blooms June-September.	HA	**Less than Reasonable.** The study area does not contain meadow and seep, or alkaline or freshwater marsh and swamp habitat.
Cuscuta obtusiflora var. *glandulosa*	Peruvian dodder	CRPR 2.2	Freshwater marshes and swamps. 15-280 meters elevation. Blooms July-October.	HA	**Less than Reasonable.** The study area does not contain freshwater marsh and swamp habitat.

Scientific Name	Common Name	Status	General Habitat Description	Habitat Present/ Absent	Rationale
Dodecahema leptoceras	slender-horned spineflower	FE, SE, CRPR 1B.1	Gravelly soils (arkose deposits) in openings of chamise chaparral in the Vail Lake area or in sandy soils in openings of alluvial late seral stage scrub on floodplain terraces and benches that receive overbank deposits every 50 to 100 years. 200-760 meters elevation. Blooms April-June.	HA	**Less than Reasonable.** The study area does not contain chamise chaparral or alluvial late seral stage scrub on floodplain terraces and benches. In addition, the study area is below the known elevational range of the species.
Dudleya multicaulis	many-stemmed dudleya	CRPR 1B.2	Often on clay soils around granitic outcrops in chaparral, coastal sage scrub and grasslands.15-790 meters elevation. Blooms April-July.	HA	**Less than Reasonable.** The study area does not contain clay soils in association with chaparral, coastal sage scrub or grassland habitat.
Galium grande	San Gabriel bedstraw	CRPR 1B.2	Broadleaf upland forest, chaparral, cismontane woodland, lower montane coniferous forest. 425-1,520 meters elevation. Blooms January-July.	HA	**Less than Reasonable.** The study area does not contain broadleaf upland forest, chaparral, cismontane woodland or lower coniferous forest habitat. In addition, the study area is located below the elevational range of the species.
Helianthus nuttallii subsp. *parishii*	Los Angeles sunflower	CRPR 1A	Saltwater and freshwater marshes and swamps. 10-1,675 meters elevation. Blooms August-October.	HA	**Less than Reasonable.** The study area does not contain saltwater and freshwater marsh and swamp habitat.
Horkelia cuneata var. *puberula*	mesa horkelia	CRPR 1B.1	Sandy or gravelly soils in chaparral or rarely in cismontane woodlands or coastal scrub. 70-810 meters elevation. Blooms February-September.	HP	**Low Potential.** The northern edge of the study area contains portions of Elysian Park which contains marginal habitat for this species.

Scientific Name	Common Name	Status	General Habitat Description	Habitat Present/ Absent	Rationale
Juglans califonica	Southern California black walnut	CRPR 4.2	Chaparral, cismontane woodlands and coastal scrub. Known from 50-900 meters elevation. Identifiable year round, blooms March-August.	HP	**Present.** This species was observed within Elysian Park along the northern edge of the study area. This species was determined to be absent from the remainder of the study area.
Lasthenia glabrata subsp. *coulteri*	Coulter's goldfields	CRPR 1B.1	Marshes, playas, vernal pools and grasslands. Usually associated with alkaline soils. Below 1,220 meters elevation. Blooms February-June.	HA	**Less than Reasonable.** The study area does not contain marsh, playa, vernal pool or suitable grassland habitat for this species.
Lepidium virginicum var. *robinsonii*	Robinson's pepper-grass	CRPR 1B.2	Dry soils in coastal sage scrub and chaparral. Below 885 meters elevation. Blooms January-July.	HP	**Low Potential.** The northern edge of the study area contains portions of Elysian Park which contains marginal habitat for this species. Areas of the study area outside of Elysian Park do not have potential habitat for this species.
Linanthus concinnus	San Gabriel linanthus	CRPR 1B.2	Rocky openings within chaparral, lower montane coniferous forest, upper montane coniferous forest. 1,520-2,800 meters elevation. Blooms April-July.	HA	**Less than Reasonable.** The study area lacks rocky openings within chaparral, lower montane coniferoud forest and upper montane coniferous forest. In addition the study area is below the known elevational range of the species.

Scientific Name	Common Name	Status	General Habitat Description	Habitat Present/ Absent	Rationale
Malacothamnus davidsonii	Davidson's bush-mallow	CRPR 1B.2	Chaparral, cismontane woodland, coastal scrub and riparian woodland. 185-855 meters elevation. Blooms June-January.	HA	**Less than Reasonable.** The study area does not contain chaparral, coastal scrub or riparian woodland habitat. The northern portion of the study area witihn Elysian Park does contain cismontane woodlands, however, this species is not expected to occur there.
Muhlenbergia californica	California muhly	CRPR 4.3	Mesic seeps and streambanks within chaparral, coastal scrub, lower montane coniferous forest and meadows. 100-2,000 feet elevation. Blooms June-September.	HA	**Less than Reasonable.** The study area does not contain mesic seeps and streambanks within chaparral, coastal sage scrub and lower montane coniferous forest habitat.
Nasturtium gambelii	Gambel's water cress	FE, ST, CRPR 1B.1	Freshwater and brackish marshes and swamps. 5-330 meters elevation. Blooms April-October.	HA	**Less than Reasonable.** The study area does not contain freshwater and brackish marsh and swamp habitat.
Navarretia fossalis	spreading navarretia	FT, CRPR 1B.1	Chenopod scrub, freshwater and saltwater marshes and swamps, playas and vernal pools. 30-655 meters elevation. Blooms April-June.	HA	**Less than Reasonable.** The study area lacks chenopod scrub, freshwater marsh and swamp, playa and vernal pool habitat.
Navarretia prostrata	Prostrate navarretia	CRPR 1B.1	Vernal pools, coastal scrub, meadows and seeps and alkaline valley and foothill grassland. 15-1,21- meters elevation. Blooms April-July.	HA	**Less than Reasonable.** The study area does not contain vernal pool, coastal scrub, meadows and seep and alkaline and foothill grassland habitat.
Orcuttia californica	California Orcutt's grass	FE, SE, CRPR 1B.1	Vernal pools that stay ponded for longer than three weeks. 15-660 meters. Blooms April-August.	HA	**Less than Reasonable.** The study area does not contain vernal pool habitat.

Scientific Name	Common Name	Status	General Habitat Description	Habitat Present/ Absent	Rationale
Phacelia stellaris	Brand's star phacelia	FC, CRPR 1B.1	Coastal scrub and coastal dunes below 400 meters elevation. Blooms March-June.	HA	**Less than Reasonable.** The study area does not contain coastal scrub and coastal dune habitat.
Pseudognaphalium leucocephalum	White rabbit tobacco	CRPR 2.2	Sandy areas within chaparral, cismontane woodland, coastal scrub, riparian woodland. Below 2,100 meters elevation. Blooms July-December.	HA	**Less than Reasonable.** The study area does not contain chaparral, coastal scrub and riparian woodland habitat. The northern portion of the study area within Elysian Park does contain cismontane woodlands, however, this species is not expected to occur there.
Ribes divaricatum var. *parishii*	Parish's gooseberry	CRPR 1A	Riparian woodland. 65-300 meters. Blooms February-April.	HA	**Less than Reasonable.** The study area does not contain riparian woodland habitat.
Scutellaria bolanderi subsp. *austromontana*	southern mountains skullcap	CRPR 1B..2	Chaparral, cismontane woodland, lower montane coniferous forest. Elevations of 425-2,000 meters. Blooms June-August.	HA	**Less than Reasonable.** The study area does not contain chaparral, or lower montane coniferous forest habitat. The northern portion of the study area within Elysian Park does contain cismontane woodlands, however, this species is not expected to occur there as the study area is below the elevational range of the species.

Scientific Name	Common Name	Status	General Habitat Description	Habitat Present/ Absent	Rationale
Symphyotrichum defoliatum	San Bernardino aster	CRPR 1B.2	Cismontane woodland, coastal scrub, coniferous forest, meadows and seeps, marshes and swamps, and mesic grassland near water. Below 2,040 meters elevation. Blooms July-November.	HA	**Less than Reasonable.** The study area does not contain coastal scrub, coniferous forest, meadows and seeps, marshes and swamps or mesic grassland habitat. The northern portion of the study area within Elysian Park does contain cismontane woodlands, however, this species is not expected to occur there due to the dry nature of the Park.
Symphyotrichum greatae	Greata's aster	CRPR 1B.3	Broadleaved upland forest, chaparral, cismontane woodland, lower cismontane coniferous forest and riparian woodland. 300-2,010 meters elevation. Blooms June-October.	HA	**Less than Reasonable.** The study area does not contain broadleaved upland forest, chaparral, lower cismontane coniferous forest or riparian forest habitat. The northern portion of the study area within Elysian Park does contain cismontane woodlands, however, this species is not expected to occur there as the study area is below the elevational range of the species.
Thelypteris puberula var. *sonorensis*	Sonoran maiden fern	CRPR 2.2	Meadows and seeps from 50-60 meters elevation. Blooms January-September.	HA	**Less than Reasonable.** The study area does not contain meadows and seeps.

Scientific Name	Common Name	Status	General Habitat Description	Habitat Present/ Absent	Rationale
U.S. Fish and Wildlife Service FE Federal Endangered FT Federal Threatened PE Proposed Endangered PT Proposed Threatened FC Federal Candidate	**California Department of Fish and Wildlife** SE State Endangered ST State Threatened SR State Rare SSC California Species of Concern		**California Native Plant Society** 1A Plants presumed extinct in California. 1B Plants rare, threatened, or endangered in California and elsewhere. 1 Seriously endangered in California 2 Plants rare, threatened, or endangered in California, but more common elsewhere. 3 Plants about which we need more information. 4 Plants of limited distribution.	**Habitat Present/Absent** CH Critical Habitat P Species is present HA Habitat absent HP Habitat is, or may be present	

Sensitive Wildlife Species

Scientific Name	Common Name	Status	General Habitat Description	Habitat Present/ Absent	Rationale
Reptiles					
Anniella pulchra pulchra	silvery legless lizard	SSC	Sandy or loose soils under sparse vegetation on beaches, within chaparral, pine-oak woodlands, sycamore and cottonwood woodland or oaks near stream terraces.	HA	**Less than Reasonable.** The study area lacks suitable upland habitats adjacent to stream terraces.
Emys marmorata	Western pond turtle	SSC	Inhabits permanent or nearly permanent waters. Requires basking sites (i.e., partially submebmerged logs, rocks or open banks).	HA	**Less than Reasonable.** The Los Angeles River within the study area contains aquatic habitat, however, it is not suitable fo rthis species as it lacks sufficient depth, pools or other features that would provide natural basking sites.
Phrynosoma blainvillii	Coast horned lizard	SSC	Sandy areas within valley and foothill hardwood and conifer woodlands, riparian areas, coastal scrub, chaparral and annual grasslands.	HA	**Less than Reasonable.** The study area does not contain sandy areas within valley and foothill hardwood and conifer woodlands, riparian areas, coastal scrub, chaparral and suitable grassland habitat for this species.
Thamnophis hammondii	Two-striped garter snake	SSC	Permanent streams with rocky beds that support riparian canopy.	HA	**Less than Reasonable.** The study area lacks suitable riparain habitat for this species.

Scientific Name	Common Name	Status	General Habitat Description	Habitat Present/ Absent	Rationale
Birds					
Athene cunicularia	Burrowing owl	SSC	Uses large rodent burrows or other burrows in grasslands, prairies and agricultural areas.	HA	**Less than Reasonable.** Areas of ruderal vegetation within LASHP were determined to have a low potential to support breeding and a moderate potential to support overwintering or migration stops for the species in evalautions for the original project concept. The revised concept involves only a limited area within the LASHP, which is more than 1,000 feet from the current project site and buffer area.
Coccyzus americanus occidentalis	Western yellow billed cuckoo	FC, SE	Breeds and nests in extensive stands of cottonwood/willow riparian forest within large rivers with broad flood prone bottoms.	HA	**Less than Reasonable.** The study area lacks suitable riparian habitat for this species.
Cypseloides niger	Black swift	SSC	Usually seen near cliffs in mountaneous regions. Nests in crevices in deep canyon cliffs near waterfalls or in sea cliffs.	HA/HP	**Less than Reasonable Potential to Nest.** The study area lacks suitable nesting habitat for this species. **Less than Reasonable Potential to Forage.** This species is not expected to use the site for foraging purposes.
Empidonax traillii extimus	Southwestern willow flycatcher	FE SE	Restricted to riparian woodlands along streams and rivers with mature, dense stands of willows, cottonwoods or smaller spring fed or boggy areas with willows or alders.	HA	**Less than Reasonable.** The study area lacks suitable riparian habitat for this species.
Falco peregrinus anatum	American peregrine falcon	SFP	Wetlands near high cliffs. Occasionally known to nest on buildings and other high structures.	HP	**Moderate Potential.** The study area contains medium sized structures that may provide suitability for this species to nest on and forage from.

Scientific Name	Common Name	Status	General Habitat Description	Habitat Present/ Absent	Rationale
Polioptila californica californica	Coastal California gnatcatcher	FT, SSC	May be found in coastal sage scrub below 2,500 ft; prefers low, coastal sage scrub in arid washes, mesas, and slopes	HA	**Less than Reasonable.** The study area lacks suitable coastal sage scrub habitat for this species.
Riparia riparia	Bank swallow	ST	Nests on vertical banks along streams and rivers.	HA	**Less than Reasonable.** Southern California is outside of the normal range of this species. A single 1894 record for this species exists in the CNDDB database.
Vireo bellii pusillus	least Bell's vireo	FE, SE	Prefers dense riparian habitats but can also be found in more open riparian habitats such as mule fat scrub.	HA	**Less than Reasonable.** The study area lacks suitable riparian habitat for this species.
Mammals					
Antrozous pallidus	Pallid bat	SSC	Arid regions with suitable roosting habitat adjacent to large bodies of water to forage over. Suitable roosting habitat consists of rocky outcrops, caves, tunnels, mines, eaves and tree hollows.	HP	**Moderate Potential.** The study area and vicinity contain bridges and structures that may provide suitable roosting habitat for this species. **Moderate Potential.** The study area contains suitable foraging habitat for this species.
Eumops perotis californicus	Western mastiff bat	SSC	Many open, semi-arid to arid habitats, including conifer and deciduous woodlands, coastal scrub, grasslands, chaparral. Roosts in crevices in cliff faces, high buildings, trees & tunnels.	HP	**Moderate Potential.** The study area and vicinity contain bridges and structures that may provide suitable roosting habitat for this species. **Moderate Potential.** The study area contains suitable foraging habitat for this species.

Scientific Name	Common Name	Status	General Habitat Description	Habitat Present/ Absent	Rationale
Lasiurus xanthinus	Western yellow bat	SSC	Inhabits palm oasis and residential areas with palm trees. Roosts primarily in trees, especially in the dead fronds of palm trees. Forages over open water and among trees.	HP	**Moderate Potential.** The study area and vicinity contain bridges and structures that may provide suitable roosting habitat for this species. **Moderate Potential.** The study area contains suitable foraging habitat for this species.
Microtus californicus stephensi	South coast marsh vole	SSC	Tidal marshes.	HA	**Less than Reasonable.** The study area lacks tidal marsh habitat.
Neotoma lepida intermedia	San Diego desert woodrat	SSC	Variety of shrub and desert habitats, typically with rock outcrops, boulders, cacti and/or areas of dense undergrowth.	HA	**Less than Reasoanble.** The study area lacks suitable shrub and desert habitat with rock outcrops, boulders, substantial cactus and or areas or dense undergrowth.
Nyctinomops femorosaccus	Pocketed free-tailed bat	SSC	Rocky desert areas with relatively high cliffs also, less frequently known to roost in buildings, caves, and under roof tiles.	HA/HP	**Moderate Potential.** The study contains no high cliff areas, however, it does contain buildings and other urban structures that may provide roosting habitat. **Moderate Potential.** The species may occur within the study area in a foraging capacity.
Nyctinomops macrotis	Big free-tailed bat	SSC	Rocky areas with high cliffs in a variety of arid areas including pine-juniper woodlands, desert scrub, palm oasis, desert wash, desert riparian. Less frequently known to use builldings, caves and tree cavities.	HA	**Moderate Potential.** The study area lacks high cliffs in association with suitable arid habitats, however, the study area does contain buildings and trees that may provide some roosting habitat. **Moderate Potential.** The study area provides suitable foraging habitat for this species.
Onychomys torridus ramona	Southern grasshopper mouse	SSC	Inhabits arid areas, especially scrub habitat (i.e., coastal scrub and mixed chaparral, with friable soils).	HA	**Less than Reasonable.** The study area does not contain coastal scrub and/or mixed chaparral habitat.

Scientific Name	Common Name	Status	General Habitat Description	Habitat Present/ Absent	Rationale
Taxidea taxus	American badger	SSC	Open plains and fields, particularly in grasslands.	HA	**Less than Reasonable.** The study area lacks open plains and fields suitable for this species.
Amphibians					
Rana muscosa	Sierra Madre yellow-legged frog	FE, SSC	Streams and small pools within ponderosa-pine, montane hardwood-conifer and montane riparain habitat types.	HA	**Less than Reasonable.** The study area lacks small streams and pools within woodland habitat.
Spea hammondii	Western spadefoot	SSC	Open habitats including low grasslands, open chaparral, and pine-oak woodlands, where soils are sandy or gravelly. Requires temporary rain pools that last at least three weeks. Pools must lack predators of eggs and tadpoles.	HA	**Less than Reasonable.** The study area lacks suitable habitat for this species.
Taricha torosa	coast range newt	SSC	Breeds in ponds, reservoirs and slow moving streams. Uses nearby upland areas including grasslands, chaparral and woodlands.	HA	**Less than Reasonable.** The LA River is concrete lined within the study area and does not provide suitable habitat for this species.
Fish					
Catostomus santaanae	Santa Ana sucker	FT, SSC	Inhabits shallow, cool, running waters. Historically known from Los Angeles, San Gabriel and the Santa Ana river systems.	HA	**Less than Reasonable.** The study area contains water flows, however, the LA River within the study area is completely concrete lined and does not provide suitable habitat for this species.
Gila orcuttii	Arroyo chub	SSC	Inhabits perennial or intermittent streams with permanent pools.	HA	**Less than Reasonable.** The project site lacks pools and other habitat requirements for this species.

Scientific Name	Common Name	Status	General Habitat Description	Habitat Present/ Absent	Rationale
Oncorhynchus mykiss irideus	Southern steelhead	FE, SSC	Permanent streams in coastal basins.	HP	**Less than Reasonable.** Southern steelhead are believed to be extripated from the Los Angeles River (Moyle, Yoshiyama, and Wikramamayake.1995)
Rhinichthys osculus ssp. *3*	Santa Ana speckled dace	SSC	Found within the headwater streams of the Santa Ana and San Gabriel rivers.	HA	**Less than Reasonable.** The project site is not a headwater stream of either the San Gabriel or the Santa Ana River.

U.S. Fish and Wildlife Service
FE Federal Endangered
FT Federal Threatened
PE Proposed Endangered
PT Proposed Threatened
FC Federal Candidate

California Department of Fish and Game
SE State Endangered
ST State Threatened
SR State Rare
SSC California Species of Special Concern
SFP State Fully Protected
WL Watch List

P Species is present
HA Habitat absent
HP Habitat is, or may be present
CH Critical Habitat

Appendix D
Jurisdictional Delineation

JURISDICTIONAL DELINEATION REPORT

BENDING THE RIVER BACK INTO THE CITY PROJECT

LOS ANGELES COUNTY, CALIFORNIA

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August 2013



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Acronyms and Abbreviations

AMSL	above mean sea level
APNs	assessor's parcel numbers
CDFW	California Department of Fish and Wildlife
CFR	Code of Federal Regulations
CWA	Clean Water Act
EPA	Environmental Protection Agency
FAC	facultative
FACW	facultative wetland
HU	Hydrologic Unit
ICF	ICF International
JD	Jurisdictional Determination
LASHP	Los Angeles State Historic Park
NHD	National Hydrography Dataset
NI	no indicator
NO	no occurrence
NRCS	Natural Resources Conservation Service
NWI	National Wetlands Inventory
OBL	status of obligate
OHWM	Ordinary High Water Mark
Porter-Cologne Act	Porter-Cologne Water Quality Control Act
project	Bending the River Back into the City Project
RGL	Regulatory Guidance Letter
RPWs	relatively permanent waters
RWQCB	Regional Water Quality Control Board
SSURGO	Soil Survey Geographic
SWANCC	Solid Waste Agency of Northern Cook County
SWRCB	State Water Resources Control Board
TNWs	traditional navigable waters
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
WoS	Waters of the State
WoUS	Waters of the United States

Chapter 1
Introduction

On June 18, 2012, ICF International (ICF), in association with Geosyntec Consultants, conducted a routine-level delineation of jurisdictional waters and wetlands within a portion of the Los Angeles River as part of the federal and state regulatory permitting process for construction of Metabolic Studio's Bending the River Back into the City Project (project). The purpose of this delineation was to identify the extent of federal and state jurisdiction within and adjacent to the project site to support the resource-agency permitting process under Sections 401 and 404 of the Clean Water Act (CWA), Section 13260 of the Porter-Cologne Water Quality Control Act (Porter-Cologne Act), and Section 1602 of the California Fish and Game Code.

Section 404 of the CWA covers waters of the United States (WoUS) as well as federal wetlands and is regulated by the U.S. Army Corps of Engineers (USACE). Under Section 401 of the CWA, the Regional Water Quality Control Board (RWQCB) and the U.S. Environmental Protection Agency (EPA) regulate at the state level all activities that are regulated at the federal level by USACE. The RWQCB and State Water Resources Control Board (SWRCB) may also regulate activities that affect non-federal waters and wetlands (e.g., isolated features) under the Porter-Cologne Act. Section 1600 of the California Fish and Game Code is regulated by the California Department of Fish and Wildlife (CDFW) and covers aquatic features, which may include lakes or streambeds with a defined bed and bank plus any adjacent riparian vegetation. If a proposed project may affect waters or wetlands, the project site must be evaluated to determine the presence of jurisdictional waters. Permits for the proposed activity must be sought from each applicable resource agency. Details regarding each of these resource agencies, including their regulatory authority, jurisdiction, permits, and regulatory processes, are provided in Chapter 2, "Regulatory Background."

The study area at the time of the June 18, 2012, jurisdictional delineation reflected an alternate scheme (which was subsequently determined infeasible) for diversion of water from the Los Angeles River. The project site now extends farther upstream. Inasmuch as the river channel is of uniform character within this added area, the July 2013 characterization of jurisdictional resources within the extended limits is based on field observations in the downstream areas and recent aerial photographs.

The information and results presented herein document the investigation, best professional judgment, and conclusions of ICF. It is correct and complete to the best of our knowledge. However, all jurisdictional determinations should be considered preliminary until reviewed and approved by the regulatory agencies.

1.1 Project Description and Site History

The proposed project is intended to re-establish a connection between the City of Los Angeles and the Los Angeles River. A key element of this connection is a water wheel, which would be situated on the west bank of the river, near the location of a historic water wheel that operated in the 1850s and delivered river water to the Pueblo de Los Angeles.

To provide adequate water pressure to turn the approximate 70-foot-diameter water wheel, an impoundment would be created within the adjacent river channel by installing a 6-foot-tall inflatable dam across the entire width of the channel a short distance downstream of the North Broadway Bridge. The dam would be inflated during non-storm periods (typically April to October), establishing an impoundment that would extend up to approximately 1,220 feet upstream (to just north of the rail bridge) and contain up to approximately 16 acre-feet of water. Pipelines from the water wheel pit would be extended through openings in the river channel side slopes immediately upstream and downstream of the dam to deliver impounded water to the water wheel and return flows to the river channel.

Approximately 99% of diverted flows would be returned to the river immediately upon their passage through the water wheel. Approximately 80 acre-feet per year (equivalent to approximately 0.11 cubic feet per second if averaged over the year) is proposed to be diverted for irrigation of landscaping at the nearby Los Angeles State Historic Park (LASHP) or for other uses. River water diverted for irrigation use would be treated by filtration and ultraviolet disinfection before use.

1.2 Project Location

The proposed project would be located within and immediately west of the Los Angeles River, between State Route 110 and U.S. 101 (Figure 1). The project site occurs at the Broadway Bridge crossing, north of the Spring Street Bridge, and extends westward into the LASHP. The project site is mapped within an unsectioned portion (Township 1 South, Range 13 West) of the Los Angeles U.S. Geological Survey (USGS) 7.5-minute topographic quadrangle map (Figure 2). The project site is identified as assessor's parcel numbers (APNs) 5409-001-900, 5409-001-901, 5414-016-903, 5414-027-904, and 5447-032-900.

Chapter 2
Regulatory Background

The following sections summarize the regulations imposed on each type of jurisdictional feature potentially present within the project area.

2.1 U.S. Army Corps of Engineers Regulated Activities

Pursuant to Section 404 of the CWA, USACE regulates the discharge (temporary or permanent) of dredged or fill material into WoUS, including wetlands. A discharge of fill material includes, but is not limited to, grading, placing riprap for erosion control, pouring concrete, laying sod, and stockpiling excavated material into WoUS. Activities that generally do not involve a regulated discharge (if performed specifically in a manner to avoid discharges) include driving pilings, performing certain drainage channel maintenance activities, constructing temporary mining and farm/forest roads, and excavating without stockpiling.

2.1.1 Waters of the United States

WoUS, as defined in Code of Federal Regulations (CFR) Title 33, Section 328.3, includes the following.

(1) All waters that are currently used or were used in the past or may be susceptible to use in interstate or foreign commerce, including all waters that are subject to the ebb and flow of the tide;

(2) All interstate waters, including interstate wetlands;

(3) All other waters, such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation, or destruction of which could affect interstate or foreign commerce, including any such waters:

  (i) That are or could be used by interstate or foreign travelers for recreational or other purposes; or

  (ii) From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or

  (iii) That are used or could be used for industrial purpose by industries in interstate commerce;

(4) All impoundments of waters otherwise defined as waters of the United States under the definition;

(5) Tributaries of waters identified in paragraphs (1) through (4) of this section;

(6) The territorial seas;

(7) Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (1) through (6) of this section; and

(8) Waters of the United States do not include prior converted cropland. Notwithstanding the determination of an area's status as prior converted cropland by any other federal agency, for the purposes of the Clean Water Act, the final authority regarding Clean Water Act jurisdiction remains with EPA.

> Waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of CWA (other than cooling ponds, as defined in 40 CFR 423.11(m), which also meet the criteria of this definition) are not waters of the United States.

The limit of USACE jurisdiction, excluding wetlands and tidal waters, is delineated using the Ordinary High Water Mark (OHWM) defined in CFR 328.3(e) as:

> …that line on the shore established by the fluctuations of water and indicated by physical characteristics such as [a] clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.

2.1.2 Wetlands

Normally, three criteria must be satisfied to classify an area as a jurisdictional wetland: (1) a predominance of plant life that is adapted to life in wet conditions (hydrophytic vegetation); (2) soils that saturate, flood, or pond long enough during the growing season to develop anaerobic conditions in the upper part (hydric soils); and (3) permanent or periodic inundation or soils saturation, at least seasonally (wetland hydrology) (Environmental Laboratory 1987).

2.1.3 *Solid Waste Agency of Northern Cook County v. United States Army Corps of Engineers*

In 1986, in an attempt to clarify the reach of its jurisdiction, USACE stated that Section 404(a) extends to intrastate waters that:

> …(a) are or would be used as habitat by birds protected by migratory bird treaties or (b) are or would be used as habitat by other migratory birds that cross state lines or (c) are or would be used as habitat for endangered species or (d) used to irrigate crops sold in interstate commerce" (51 Federal Register 41217).

As a result of the 2001 *Solid Waste Agency of Northern Cook County (SWANCC)* case, the U.S. Supreme Court held that USACE may not rely on the migratory bird rule to establish a significant nexus to interstate or foreign commerce. Although no formal guidance was issued by USACE interpreting the extent to which the *SWANCC* decision would limit jurisdictional determinations, in practice, USACE considers intrastate waters as WoUS where there is an appropriate connection to a navigable water or other clear interstate commerce connection. Therefore, WoUS, including jurisdictional wetlands, must show connectivity with (be tributary to) a navigable WoUS to be subject to USACE under Section 404 of the CWA.

2.1.4 *Rapanos v. United States* and *Carabell v. United States Army Corps of Engineers*

In 2006, the U.S. Supreme Court issued an opinion regarding the extent of USACE jurisdiction over certain waters under Section 404 of the CWA. The *Rapanos-Carabell* consolidated decisions addressed the question of jurisdiction over attenuated tributaries to WoUS as well as wetlands adjacent to those tributaries.

On June 5, 2007, USACE and EPA issued guidance related to the *Rapanos* decision. The guidance identifies those waters over which the agencies (USACE and EPA) will assert jurisdiction categorically and on a case-by-case basis. To summarize, USACE will continue to assert jurisdiction over the following features.

- Traditional navigable waters (TNWs) and their adjacent wetlands.
- Non-navigable tributaries of TNWs that are relatively permanent waters (RPWs) (e.g., tributaries that typically flow year-round or have a continuous flow at least seasonally [i.e., typically 3 months]) and wetlands that directly abut such tributaries (i.e., not separated by uplands, berm, dike, or similar feature).

For non-RPWs, the agencies will determine whether a "significant nexus" exists with a TNW using the data found in an Approved Jurisdictional Determination (JD) form. The purpose of the significant nexus evaluation is to determine whether the existing functions of a tributary affect the chemical, physical, and/or biological integrity of a downstream TNW. Tributary characteristics that are considered when evaluating whether a significant nexus exists include volume, duration, and frequency of flow; proximity to a TNW; and hydrologic and ecologic functions performed by the tributary and all of its adjacent wetlands. Based on that information, the agencies may assert jurisdiction over the following features.

- Non-navigable tributaries that do not typically flow year-round or have continuous flow at least seasonally,
- Wetlands adjacent to such tributaries, and
- Wetlands adjacent to but not directly abutting a relatively permanent non-navigable tributary.

The agencies will typically not assert jurisdiction over the following features.

- Swales or erosional features (e.g., gullies and small washes characterized by low volume and infrequent or short-duration flow), and
- Ditches (including roadside ditches) excavated wholly in uplands and draining only uplands that do not carry a relatively permanent flow of water.

2.1.4.1 Approved Jurisdictional Determinations

An Approved JD is an official USACE jurisdictional determination and valid for 5 years. It can be used and relied upon in a CWA citizen's lawsuit if its legitimacy is challenged (except under extraordinary circumstances) and can be immediately appealed (33 CFR 331). Approved JDs are documented in accordance with Regulatory Guidance Letter (RGL) No. 07-01 and require the use of the Approved JD form. Approved JDs are evaluated by USACE and EPA.

Under the *Rapanos* guidance, an Approved JD is required for determinations for all "isolated" waters or wetlands and is subject to review by USACE and EPA.

2.1.4.2 Preliminary Jurisdictional Determinations

USACE issued RGL No. 08-02 on June 26, 2008, allowing USACE to issue Preliminary JDs for a project. A Preliminary JD is a non-binding written indication that there may be WoUS, including wetlands, on a project site. In addition, it identifies the approximate location of these features. Preliminary JDs are used when a landowner, permit applicant, or other affected party elects to voluntarily waive or set aside questions regarding CWA jurisdiction over a particular site, usually in the interest of allowing the landowner to move ahead expeditiously to obtain Section 404 authorization where the party determines that it is in his or her best interest to do so. A Preliminary JD is not an official determination regarding the jurisdictional status of potentially jurisdictional features and has no bearing on Approved JDs. A Preliminary JD cannot be used to confirm the

absence of jurisdictional waters or wetlands, is advisory in nature, and cannot be appealed. It is considered "preliminary" because a recipient can later request an Approved JD if one is necessary or appropriate.

A Preliminary JD is documented using the Preliminary JD form. For purposes of impact calculations, compensatory mitigation requirements, and other resource protection measures, a permit decision made on the basis of a Preliminary JD treats all waters and wetlands that would be affected in any way, except by the permitted activity, as if they are jurisdictional. Although a Preliminary JD may be chosen by the applicant, the district engineer reserves the right to use an Approved JD where warranted.

2.1.4.3 2011 Draft Clean Water Act Guidance

On April 27, 2011, USACE and EPA issued draft guidance for determining jurisdiction under the CWA (USACE 2011). The guidance supersedes the previous guidance from 2003 regarding *SWANCC* (68 Federal Register 1991–1995) and 2007 *Rapanos* guidance. This document reiterated the guidance issued under the *Rapanos* decision, asserting that the following waters are protected by the CWA:

- TNWs,
- Interstate waters,
- Wetlands adjacent to either TNWs or interstate waters,
- Non-navigable tributaries to TNWs that are relatively permanent (meaning they contain water at least seasonally), and
- Wetlands that directly abut relatively permanent waters.

The guidance further clarifies the criteria for defining TNWs and is mostly consistent with previous guidance. In addition, a significant nexus evaluation is required for the "other waters" category of the regulations (see item 3 in Section 2.1.1, above). The guidance divides these waters into two categories—those that are physically proximate to other jurisdictional waters and those that are not—and discusses how each category should be evaluated.

Finally, the guidance reiterated that certain aquatic areas are generally not considered WoUS, as follows:

- Wet areas that are not tributaries or open waters and do not meet the agencies' regulatory definition of "wetlands";
- Waters excluded from coverage under the CWA by existing regulations;
- Waters that lack a "significant nexus" where one is required for a water to be protected by the CWA;
- Artificially irrigated areas that would revert to upland should irrigation cease;
- Artificial lakes or ponds created by excavating and/or diking dry land and used exclusively for such purposes as stock watering, irrigation, settling basins, or rice growing;
- Artificial reflecting pools or swimming pools created by excavating and/or diking dry land;
- Small ornamental waters created by excavating and/or diking dry land for primarily aesthetic reasons;

- Water-filled depressions created incidental to construction activity;
- Groundwater drained through subsurface drainage systems; and
- Erosional features (gullies and rills) and swales and ditches that are not tributaries or wetlands.

2.2 State Regulated Activities

2.2.1 Section 401 of the Clean Water Act

A federal permit or license cannot be issued that may result in a discharge to WoUS unless certification under Section 401 of the CWA is granted or waived by EPA, the state, or the tribe where the discharge would originate (EPA 2010). Within the proposed project area, the ability to grant, grant with conditions, deny, or waive certification falls to three separate parties: the RWQCB or SWRCB and EPA.

Pursuant to Section 401 of the CWA:

> …any applicant for a federal permit for activities that involve a discharge to waters of the United States shall provide the federal permitting agency a certification from the state in which the discharge is proposed that states that the discharge will comply with the applicable provisions under the federal Clean Water Act.

Therefore, before USACE will issue a Section 404 permit, applicants must apply for and receive a Section 401 water quality certification or waiver, as applicable. Under Section 401 of the CWA, all activities that are regulated at the federal level by USACE are also regulated at the state level. Therefore, state jurisdiction usually includes all waters or tributaries to waters that are determined to be WoUS and, similar to WoUS, are typically delineated at the OHWM. However, if waters are determined not to be WoUS, they may still be subject to state jurisdiction based on the Porter-Cologne Act.

2.2.2 Porter-Cologne Water Quality Control Act

The state also regulates activities that would involve "discharging waste, or proposing to discharge waste, within any region that could affect waters of the state" (California Water Code 13260[a]), pursuant to provisions of the Porter-Cologne Act. Waters of the State (WoS) are defined as "any surface water or groundwater, including saline waters, within the boundaries of the state" (California Water Code 13050 [e]). Such waters may include waters not subject to regulation under Section 404 (i.e., isolated features). These waters may include isolated vernal pools, isolated wetlands, or other aquatic habitats not normally subject to federal regulation under Section 404 of the CWA.

2.2.3 State Water Resources Control Board/Regional Water Quality Control Board

In California, the SWRCB and nine RWQCBs regulate activities within state and federal waters under Section 401 of the CWA and the Porter-Cologne Act. The SWRCB is responsible for setting statewide policy, coordinating and supporting RWQCB efforts, and reviewing petitions that contest RWQCB actions. Each semi-autonomous RWQCB sets water quality standards, issues Section 401

certifications and waste discharge requirements, and takes enforcement action for projects occurring within its boundary. However, when a project crosses multiple RWQCB jurisdictional boundaries, the SWRCB becomes the regulating agency and issues project permits.

2.3 California Department of Fish and Wildlife Regulated Activities

Pursuant to Sections 1600–1616 of the California Fish and Game Code, CDFW regulates any activity that will substantially divert or obstruct the natural flow—or substantially change or use any material from the bed, channel, or bank—of any river, stream, or lake. CDFW also regulates any activity that will deposit or dispose of debris, wastewater, or other material containing crumbled, flaked, or ground pavement that may pass into any river, stream, or lake. The applicant must notify CDFW prior to such activities and obtain a Lake or Streambed Alteration Agreement.

2.3.1 California Department of Fish and Wildlife Jurisdiction

CDFW jurisdiction includes ephemeral, intermittent, and perennial watercourses (including dry washes) and lakes characterized by the presence of (1) definable bed and banks and (2) existing fish or wildlife resources. Furthermore, CDFW jurisdiction often extends to habitats adjacent to watercourses, such as oak woodlands in canyon bottoms or willow woodlands that support hydrologic functions within the riparian system. CDFW jurisdiction typically does not include features without a discernible bed and bank, such as swales, vernal pools, or wet meadows.

2.3.2 California Fish and Game Code Section 1602

The California Fish and Game Code mandates that:

> …it is unlawful for any person to substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake designated by the department, or use any material from the streambeds, without first notifying the department of such activity.

Historical court cases have further extended CDFW jurisdiction to include watercourses that seemingly disappear but re-emerge elsewhere. Under the CDFW definition, a watercourse need not exhibit evidence of an OHWM to be claimed as jurisdictional.

Water features such as vernal pools and other seasonal swales—where the defined bed and bank are absent and the feature is not contiguous or closely adjacent to other jurisdictional features—are generally not asserted to fall within state jurisdiction under Section 1602. CDFW generally does not assert jurisdiction over human-made water bodies unless they are located where such natural features were previously located or (importantly) where they are contiguous with existing or prior natural jurisdictional areas.

Chapter 3
Methodology

3.1 Project Research

Prior to the field visit, a 200-foot-scale (1 inch = 200 feet) aerial photograph of the site was obtained and compared with USGS 7.5-minute topographic quadrangles to identify drainage features within the study area, as indicated by vegetation types, topographic changes, or visible drainage patterns. The National Hydrography Dataset (NHD) data for the study area (U.S. Geological Survey 2010) and the National Wetlands Inventory (NWI) (USFWS 2010) were referenced to identify any mapped features such as streams and wetlands. Finally, the study area was carefully reviewed in Google Earth (Google Earth 2012) in various scales, and potentially jurisdictional features were marked on field maps.

The literature review revealed an EPA determination that the Los Angeles River is considered to be a TNW for its entire length, from Arroyo Calabasas and Bell Creek to the river mouth in San Pedro Bay at the Pacific Ocean, a distance of approximately 51 river miles (EPA 2010). This determination includes the stream reach within the project site. In addition, the U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Soil Survey Geographic (SSURGO) database (USDA/NRCS 2012) was reviewed to identify the soil series that occurs in the study area.

3.2 Field Investigation

ICF biologist Paul Schwartz and regulatory specialist Daniel Cardoza conducted the jurisdictional waters and wetland delineation on June 18, 2012. The JD study area was approximately 2,733 linear feet of the Los Angeles River. The study area was surveyed on foot, and jurisdictional limits were recorded using a Trimble Yuma GPS unit with a Geneq SX Blue II receiver, providing sub-meter accuracy.

The study area at the time of the June 18, 2012, jurisdictional delineation was based on an alternate scheme (which was subsequently determined infeasible) for diversion of water from the Los Angeles River. The project site now extends farther upstream within the Los Angeles River. Inasmuch as the river channel is of uniform character within this added area, the July 2013 characterization of jurisdictional resources within the extended limits is based on field observations in the downstream areas and recent aerial photographs.

Common plant species observed were identified by visual characteristics and morphology in the field. Taxonomic nomenclature for plants follows the *Jepson Manual: Vascular Plants of California,* second edition (Baldwin et al. 2012).

3.2.1 U.S. Army Corps of Engineers Jurisdiction

Potential WoUS and wetlands were delineated using methods established in the *Wetland Delineation Manual* (Environmental Laboratory 1987), the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (USACE 2008a), *A Field Guide to the Identification of*

the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States (USACE 2008b), and 2007 and 2008 *Rapanos* Guidance (USACE 2008).[1] The delineation of non-wetland waters was based on the presence of OHWM indicators. An OHWM data sheet was recorded and is attached as Appendix B. Three criteria normally must be fulfilled to classify an area as a jurisdictional USACE wetland: (1) a predominance of hydrophytic vegetation, (2) the presence of hydric soils, and (3) the presence of wetland hydrology. Details are provided below.

- **Hydrophytic Vegetation:** The hydrophytic vegetation criterion is satisfied at a location if greater than 50% of all the dominant species present within the vegetation unit have a wetland indicator status of obligate (OBL), facultative wetland (FACW), or facultative (FAC) (Environmental Laboratory 1987). An OBL indicator status refers to plants that have a 99% probability of occurring in wetlands under natural conditions. A FACW indicator status refers to plants that usually occur in wetlands (67%–99% probability) but are occasionally found elsewhere. A FAC indicator status refers to plants that are equally likely to occur in wetlands or elsewhere (estimated probability 34%–66% for each). An NI (no indicator) status designates that insufficient information was available to determine an indicator status. An NO (no occurrence) status indicates that the species does not occur in the region. When a plant with an NO status is found within a region, it usually indicates that the plant is ornamental. The wetland indicator status used for this report follows the *National List of Plant Species that Occur in Wetlands: California* (Region 0) (USFWS 1988).
- **Hydric Soils:** The definition of a hydric soil is a soil that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (USDA/NRCS 1994). This determination is based on the various field indicators detailed in the *Arid West Supplement* and the *Field Indicators of Hydric Soils in the United States* (Version 7.0) (USDA/NRCS 2010).
- **Wetland Hydrology:** Wetland hydrology is determined using indicators of inundation or saturation (flooding, ponding, or tidally influenced) detailed in the *Wetland Delineation Manual* and the *Arid West Supplement*.

3.2.2 State Jurisdiction

The evaluation of state jurisdiction follows guidance from Section 401 of the CWA and typically follows the same jurisdictional areas as USACE.

3.2.3 California Department of Fish and Wildlife Jurisdiction

CDFW jurisdiction typically includes water features with a defined bed and bank. Evaluation of potentially jurisdictional areas followed the guidance of relevant CDFW materials and standard practices by CDFW personnel. Briefly, CDFW jurisdiction was delineated by measuring outer width and length boundaries of potentially jurisdictional areas, consisting of the greater of either the top of bank measurement or the extent of associated riparian or wetland vegetation.

[1] On June 5, 2007, USACE and EPA issued guidance related to the *Rapanos-Carabell* consolidated decisions to address the question of jurisdiction over attenuated tributaries to WoUS as well as wetlands adjacent to those tributaries. On December 2, 2008, USACE and EPA issued guidance that incorporated revisions to the June 5, 2007, memorandum. The *Rapanos-Carabell* decision is discussed in further detail in Section 2.1.4, above.

Chapter 4
Environmental Setting

This chapter describes the topography, land use, hydrology, vegetation characteristics, and soils associated with the study area.

4.1 Topography

The study area is within the Los Angeles River watershed and consists of the project site and the Los Angeles River, a named blue line stream, as depicted on the Los Angeles USGS topographic quadrangle map (USGS 1966). The project site consists of the western bank and river bottom of the Los Angeles River and the easternmost portion of the LASHP. The Los Angeles River conveys perennial flows in a north/south direction. Flows within the Los Angeles River reach the Pacific Ocean approximately 24 river miles downstream. Elevations within the study area range from 271 to 293 feet above mean sea level (AMSL).

4.2 Land Use

The study area encompasses approximately 70 acres within portions of the LASHP and the Los Angeles River. The project site is surrounded by dense residential and commercial/industrial development as well as heavy railroad use. Elysian Park is adjacent to the northwestern border of the project site.

The LASHP is a former railroad yard that was converted to a 32-acre open space (the LASHP) in 2006. A portion of the LASHP has been restored with native California vegetation, while the majority contains turf lawn, sporadic trees, and cement and earthen walkways.

4.2.1 CWA 303(d) Listed Waters

Portions of the Los Angeles River have been determined to be CWA 303(d) listed water bodies (Cal/EPA 2010); the project site falls within Reach 2 (Carson to Figueroa Street). Pollutants determined present within Reach 2 include ammonia, coliform bacteria, copper, lead, nutrients (algae), oil, and trash. Total maximum daily loads (TMDLs) are required in the Reach 2 watershed for bacteria, metals, nutrients, and trash.

4.3 Hydrology

4.3.1 Precipitation

The regional climate is characterized by hot, dry summer months with moderately cold winters. Seasonal rainfall occurs predominantly in the winter months (December–March). The precipitation data below for the downtown Los Angeles Civic Center (Weather Station 045115) were used for this analysis (Western Regional Climate Center 2012).

Table 4.1. Rainfall Data Summary for Los Angeles, CA (in inches)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Jun	Jul	**Total Oct–Jul**
Average	0.48	1.25	2.41	3.20	3.38	2.40	1.01	0.25	0.07	0.01	0.05	0.27	**14.77**

4.3.2 Hydrologic Unit

The entire study area is located within the Los Angeles–San Gabriel Hydrologic Unit (HU) of the Los Angeles River watershed. The Los Angeles–San Gabriel HU contains an approximate 2,760-linear-foot portion of the Los Angeles River within the study area and eventually drains into the Pacific Ocean.

4.4 Vegetation

The majority of the project site is heavily disturbed, consisting either of disturbed non-vegetated areas or vegetation communities that are dominated by nonnative and/or ruderal plant species. Typical plant communities near the project site include coast live oak/California walnut woodland, ornamental vegetation, and ruderal vegetation.

A portion of the LASHP contains a variety of planted native shrubs and trees situated along pathways. This area is irrigated, and, in many areas, either mulch has been laid on the ground to deter the growth of weeds or bare ground exists. There is a very sparse cover of grasses. Plants observed within this area all appear to be recently planted and consist of a mixture of well-spaced individuals of toyon, California sagebrush (*Artemisia californica*), black sage (*Salvia mellifera*), white sage (*Salvia apiana*), purple sage (*Salvia leucophylla*), California mugwort (*Artemisia douglasiana*), annual sunflower (*Helianthus annuus*), brittlebush (*Encelia farinosa*), California encelia (*Encelia californica*), goldenbush (*Isocoma menziesii*), and yarrow (*Achillea millefolium*). Coast live oak, Fremont's cottonwood (*Populus fremontii*), bush mallow (*Malacothamnus fasciculatus*), western sycamore (*Platanus racemosa*), and white alder (*Alnus rhombifolia*) also occur.

The Los Angeles River is a concrete-lined trapezoidal flood control channel that lacks significant vegetation. Vegetation within the Los Angeles River is restricted to culvert outlets where sediment is able to accumulate enough mass to support a sparse cover of forbs (*Cyperus eragrostis* and *Epilobium ciliatum*), fountain grass (*Pennisetum setaceum*), and saplings of mule fat (*Baccharis salicifolia*) and red willow (*Salix laevigata*).

4.5 Soils

The Los Angeles River is a concrete-lined trapezoidal flood control channel and contains no soils within the project boundary. The USDA/NRCS SSURGO database (USDA/NRCS 2012) has mapped the following soil types within the study area:

- Altamont clay loam, and
- Hanford fine sandy loam.

Hanford fine sandy loam is mapped for almost the entire project site and the eastern, southern, and western portions of the study area (Figure 3). The northern portion of the study area is mapped as Altamont clay loam.

Chapter 5
Jurisdictional Delineation Results

This chapter describes the delineated features and expected jurisdictional status within the study area. The report documents existing conditions within the study area. An impacts analysis is not included as a part of this report.

The information and results included herein document the investigation, best professional judgment, and conclusions of ICF. It is correct and complete to the best of our knowledge. However, all jurisdictional determinations should be considered preliminary until reviewed and approved by the regulatory agencies.

Figure 4 depicts the results of the jurisdictional delineation. Site photographs are provided in Appendix B.

5.1 Delineated Feature Descriptions

One feature (Los Angeles River) was observed and documented within the JD study area (Figure 4). All potential features within the study area were delineated with the understanding that a request for a Preliminary JD would be submitted for the project. As such, all features are considered USACE jurisdictional WoUS and subject to RWQCB jurisdiction. In addition, all features identified were determined to be subject to CDFW jurisdiction.

5.1.1 Los Angeles River

The Los Angeles River is a south-flowing blue-line tributary of the Pacific Ocean. The headwaters form in the San Fernando Valley, the Simi Hills, and the Santa Susana Mountains. The river, from its formation below headwater tributaries, terminates approximately 51 river miles to the southeast in the Pacific Ocean. A majority of the river has been transformed into a concrete-lined box or trapezoidal channel used for flood control during high-velocity storm events. The low-flow channel of the river conveys perennial flow that is composed primarily of wastewater treatment plant releases and urban dry-weather runoff. In the study area, the bed and bank are cement-lined within the project buffer, and no soils were present at the time of the study. Given the lack of soils within the channel, vegetation is restricted to small culvert outlets with marginal soil accumulation. There were no additional jurisdictional water bodies in the study area.

The literature review revealed an EPA determination that the Los Angeles River has been determined to be a TNW for its entire length, from Arroyo Calabasas and Bell Creek to the river mouth in the San Pedro Bay at the Pacific Ocean, a distance of approximately 51 river miles (EPA 2010). This determination includes the entirety of the project site.

The channel contained physical evidence of an OHWM in the form of water staining visible at the toe of each slope (Appendix B, Photo 2), averaging approximately 155 feet in width throughout the study area (width of river bottom). In addition to this physical field evidence, this delineation also takes into consideration modeled hydraulics information from the project engineer (Geosyntec Consultants 2012). Based on the hydraulic analysis of the 1.6-year bankfull discharge, an OHWM

corresponding to a 4.5-foot depth of flow has been used to define USACE WoUS in this case. With the trapezoidal channel configuration throughout the delineation limits, this corresponds to an approximate width of 175.5 feet. Jurisdictional areas associated with the Los Angeles River within the study area totaled approximately 10.22 acres (2,763 linear feet) of USACE WoUS and RWQCB WoS jurisdiction. CDFW jurisdiction totaled approximately 16.48 acres (2,763 linear feet) of unvegetated streambed. The extent of USACE, RWQCB, and CDFW jurisdiction associated with the channel is shown in Figure 4.

5.2 Delineation Results Summary

Within the entire project study area, one feature subject to the jurisdiction of the USACE, RWQCB, and CDFW was delineated (Figure 4). This feature did not meet the wetland criteria for USACE jurisdictional wetlands. All USACE jurisdictional features are subject to RWQCB jurisdiction.

Within the entire project study area, one feature subject to CDFW jurisdiction was delineated but did not support riparian habitat (Figure4).

Table 5-1. Jurisdictional Delineation Summary

Feature	U.S. and State Non-Wetland Waters (acres)	U.S. and State Wetland Waters (acres)	U.S. and State Linear Feet	CDFW Streambed (acres)	CDFW Riparian (acres)	CDFW Linear Feet
Los Angeles River	10.22	0	2,763	16.48	0	2,763

5.3 Impacts on Jurisdictional Areas

Within the entire project area one feature, the Los Angeles River, was determined to be subject to USACE and RWQCB jurisdiction (Figure 5a). Within the project area, no portion of the Los Angeles River met the wetland criteria for USACE jurisdictional wetlands. All USACE jurisdictional features are subject to RWQCB jurisdiction. The table below provides data regarding the acreage and linear feet of USACE and RWQCB jurisdictional areas that would be affected by the project.

Within the entire project study area, one feature, the Los Angeles River, was determined to be subject to CDFW jurisdiction (Figure 5b). Within the project area, no portion of the Los Angeles River was found to support vegetated riparian habitat. The table below provides data regarding the acreage and linear feet of CDFW jurisdictional areas that would be affected by the project.

Table 5-2. Jurisdictional Delineation Impact Summary

Feature	Impacts on U.S. and State Non-Wetland Waters (acres)	Impacts on U.S. and State Wetland Waters (acres)	Impacts on U.S. and State Linear Feet	Impacts on CDFW Streambed (acres)	Impacts on CDFW Riparian (acres)	Impacts on CDFW Linear Feet
Los Angeles River	4.68	0	1,573	5.12	0	1,573

Chapter 6
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6.1 List of Delineators and Report Preparers/Reviewer

R. C. Brody, Senior Regulatory Specialist—Report Preparer/Reviewer

Paul Schwartz, Biologist—Delineator/Report Preparer/Reviewer

Daniel Cardoza, Regulatory Specialist—Delineator/Report Preparer

Appendix A

Ordinary High Water Mark Data Sheets

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: GEOSYNTEC WATER WHEEL PROJECT
Project Number:
Stream: LA RIVER
Investigator(s): P. SCHWARTZ, D. CARDOZA

Date: 6/18/2012 **Time:** 12:00 PM
Town: LOS ANGELES **State:** CA
Photo begin file#: **Photo end file#:**

Y ☑ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☑ Is the site significantly disturbed?

Location Details: LA RIVER AT BROADWAY BRIDGE CROSSING

Projection: Simple Cylindrical **Datum:** WGS84
Coordinates: 34.072085°N, -118.224811°W

Potential anthropogenic influences on the channel system:
CEMENT-LINED FLOOD CONTROL CHANNEL WITH URBAN RUNOFF AS PRIMARY WATER SOURCE DURING DRY SEASON.

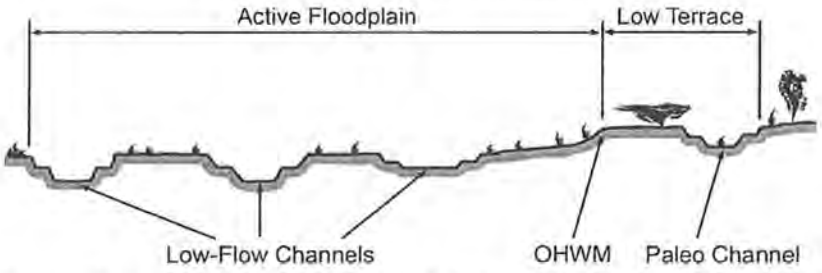
Brief site description:
TYPICAL CROSS-SECTION OF CHANNELIZED, CEMENT-LINED PORTION OF LA RIVER, SURROUNDED BY DENSE URBAN DEVELOPMENT.

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☒ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies

- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

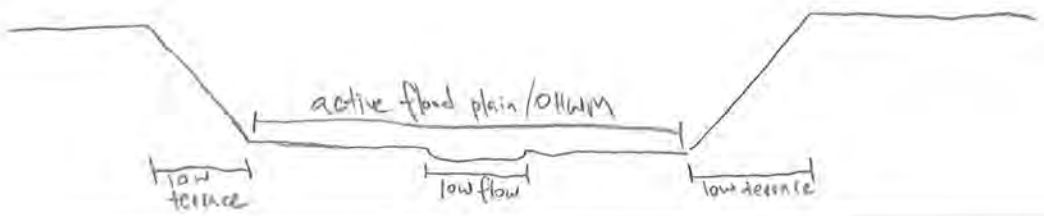


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ☒ GPS
   - ☐ Digitized on computer
   - ☐ Other:

Project ID: **Cross section ID:** **Date:** 6/18/2012 **Time:** 12:00pm

Cross section drawing:



OHWM

GPS point: OHWM 1

Indicators:

- ☐ Change in average sediment texture
- ☐ Change in vegetation species
- ☐ Change in vegetation cover
- ☒ Break in bank slope
- ☐ Other: _____
- ☐ Other: _____

Comments:

NO VEGETATION, NO SOILS, OHWM DETERMINED BY BREAK IN BANK SLOPE AND WATER STAINING

Floodplain unit:

☒ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: OHWM 1

Characteristics of the floodplain unit:

Average sediment texture: N/A

Total veg cover: 0 % Tree: 0 % Shrub: 0 % Herb: 0 %

Community successional stage:

- ☒ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☒ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

CONSTRUCTED CEMENT-LINED LOW FLOW CHANNEL WITH WATER PRESENT AT TIME OF SITE VISIT.

Project ID: **Cross section ID:** **Date:** 6/18/2012 **Time:** 12:00 PM

Floodplain unit: ☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: OHWM 1

Characteristics of the floodplain unit:

Average sediment texture: N/A

Total veg cover: Ø % Tree: Ø % Shrub: Ø % Herb: Ø %

Community successional stage:

- ☒ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☒ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

CONSTRUCTED CEMENT-LINED ACTIVE FLOODPLAIN ABOVE ELEVATION OF LOW FLOW CHANNEL.

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☒ Low Terrace

GPS point: OHWM 1

Characteristics of the floodplain unit:

Average sediment texture: N/A

Total veg cover: Ø % Tree: Ø % Shrub: Ø % Herb: Ø %

Community successional stage:

- ☒ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☒ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

CONSTRUCTED CEMENT-LINED LOW TERRACE ABOVE ELEVATION OF ACTIVE FLOODPLAIN. EXTENDS TO TOP OF BANK.

Appendix B

Site Photographs

Appendix B: Site Photographs
Los Angeles River Water Wheel Project



Photograph #	1
Photo Date	06/18/12
Location	Photo taken from North Spring Street bridge
Direction	Photo looking north
Comment	Channelized Los Angeles River between the North Spring Street and the North Broadway bridges.



Photograph #	2
Photo Date	06/18/12
Location	Photo taken from North Spring Street bridge
Direction	Photo looking east.
Comment	Eastern levee of Los Angeles River showing culvert outlet and sparse cover of forbs and saplings along smaller outlets.



Photograph #	3
Photo Date	06/18/12
Location	Photo taken from N. Spring Street bridge.
Direction	Photo looking north.
Comment	Los Angeles River between North Spring Street bridge and North Broadway Bridge. Note bridge footings above OHWM.

Appendix B: Site Photographs
Los Angeles River Water Wheel Project



Photograph #	4
Photo Date	06/18/12
Location	Photo taken from North Broadway Bridge.
Direction	Photo looking northeast.
Comment	Los Angeles River north of Broadway Bridge.



Photograph #	5
Photo Date	06/18/12
Location	Photo taken from the North Main Street bridge.
Direction	Photo looking south.
Comment	Los Angeles River south of North Main Street bridge. Water becomes more confined to low flow channel at this point.



Photograph #	6
Photo Date	06/18/12
Location	Photo taken from within Los Angeles State Historic Park.
Direction	Photo looking west.
Comment	Restored upland habitat in the eastern portion of Los Angeles State Historical Park.

Appendix B: Site Photographs
Los Angeles River Water Wheel Project



Photograph #	7
Photo Date	06/18/12
Location	Photo taken from within Los Angeles State Historic Park.
Direction	Photo looking northeast.
Comment	Non-jurisdictional berm feature within Los Angeles State Historic Park.

Appendix E
Geotechnical Investigation Report

Prepared for:

Metabolic Studio
1745 N. Spring St., Unit 4
Los Angeles, California 90012

FOCUSED GEOTECHNICAL INVESTIGATION REPORT

LA MADRE:
THE LOS ANGELES RIVER WATER WHEEL PROJECT
LOS ANGELES, CALIFORNIA

Prepared by:

Geosyntec consultants

engineers | scientists | innovators

2100 Main Street, Suite 150
Huntington Beach, CA 92648

Project Number: LA0257-03

18 April 2013

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1. INTRODUCTION

1.1 General

This Report was prepared for Metabolic Studio (Metabolic) by Geosyntec Consultants, Inc. (Geosyntec) in support of design for the proposed Siempre Agua and LA Noria: The Los Angeles River Water Wheel Project (Water Wheel) at 1800 Baker Street in Los Angeles, California (Site). The Site is situated in the City of Los Angeles, California, at the approximate location shown in Figure 1. The proposed project extends across and/or affects several properties, including: (i) a parcel currently owned by the Los Angeles County Metropolitan Transportation Authority (MTA) and which serves as a part of the MTA Gold Line Division 21 yard and (ii) United States Army Corps of Engineers (USACE) property within the Los Angeles River Channel.

1.2 Project Description

The Water Wheel project is currently in its planning stage, with conceptual design on-going. Current concepts call for the construction of a Water Wheel with a diameter of approximately 60 ft. The width of the proposed Water Wheel has not yet been established.

The conceptual plans call for a Water Wheel to be supported by an axle (oriented horizontally) that is set near the existing ground surface elevation within the MTA property. Thus, the height of the Water Wheel above-ground and depth below-ground will be approximately 30 ft each. In order to provide the opening for the below-ground portion of the Water Wheel, a four-sided earth retaining structure (box structure) will be required around the perimeter of the Water Wheel. This retaining structure may also serve as a foundation for the wheel itself as well as a channel for water being conveyed through the area to provide for operation of the wheel. For the purposes of this evaluation, the dimensions of this box structure were assumed to be approximately 70 ft long by 15 ft wide with an un-braced depth below grade of approximately 35 ft. The base of the foundation for this retaining structure is assumed to be approximately 40 ft below the existing grade. Figure 2 shows the approximate location of the proposed Water Wheel on the Site.

The Water Wheel system will be fed by a diversion from the Los Angeles River Channel through a system of two tunnels (one inlet and one outlet) as shown in Figure 2. Current concepts call for an approximate diameter of 6 ft for the tunnels. The inlet tunnel is planned to extend from approximate Station 1252+85 of the Los Angeles River Channel to the northerly end of the Water Wheel excavation. The outlet tunnel is planned to extend from the southerly end of the Water Wheel excavation to approximate Station 1245+35 of the Los Angeles River Channel. As such, the tunnels

will exit the MTA parcel, cross under the Metrolink tracks to the east and enter USACE property within the Los Angeles River Channel. Where the tunnels enter the river envelope, reinforced concrete inlet and outlet structures are planned. The details of the inlet and outlet structures are still under development.

1.3 Scope of Services

The scope of services is centered around a focused geotechnical investigation to assess subsurface conditions across the proposed project location and to develop general geotechnical design recommendations. Specific scope items included:

- Prepare a subsurface investigation program (i.e., work plan);
- Perform a geotechnical field investigation consisting of Cone Penetration Test (CPT) soundings, direct push (Geoprobe™) corings, a mud rotary boring, and hollow-stem auger borings (collectively referred to as *test holes*);
- Conduct geotechnical laboratory testing of representative soil samples recovered from the locations of the test holes;
- Establish seismic site class and develop Site-specific seismic hazard parameters;
- Assess Site hydrogeologic conditions, including historic high groundwater elevation;
- Perform geotechnical engineering evaluations; and
- Prepare this Report outlining investigation and testing performed, relevant findings, assessed Site conditions, and recommendations.

2. GEOTECHNICAL INVESTIGATION

2.1 Field Investigation

The field investigation consisted of hand augering, advancement of four Cone Penetration Test (CPT) soundings (CPTu-1, SCPTu-2, CPTu-3, and CPTu-4), three Geoprobe™ holes (GP-1, GP-3, and GP-4), one mud rotary borehole (B-2), and four hollow-stem auger boreholes (B-1, B-3, B-4, and B-5). In addition, Hydropunch™ holes were advanced near two of the Geoprobe™ holes in order to recover groundwater environmental samples and to estimate the groundwater elevation at these locations. (Additional information regarding this portion of the investigation can be found in Geosyntec [2012].) Figure 2 shows the layout of the Site, including the locations of the test holes. CPT logs and their interpretation in engineering terms are included in Appendix A. Borehole and Geoprobe™ logs are included in Appendix B.

Disturbed (bulk) soil samples were recovered during hand augering at each of the test hole locations at depths ranging from 0 to 5 ft below ground surface (bgs). Disturbed samples were recovered from the Geoprobe™ holes at various depths from 5 ft bgs to total depth. Disturbed split-spoon (i.e., both Standard Penetration Test, SPT, and California Modified Sampler, CalMod) samples were recovered from the mud rotary and hollow-stem auger borings. Locations of samples recovered from the borings and Geoprobe™ holes are noted on the logs in Appendix B.

After the test holes were completed, the holes were backfilled with cement-bentonite grout. Investigation-derived waste soil (cuttings) was drummed and left on Site for pick-up.

2.2 Laboratory Testing

Representative samples from the locations shown in Figure 2 were sent to a geotechnical laboratory for index testing. The results of this testing were used to aid in soil classification and evaluate the engineering properties of the soils.

The geotechnical laboratory testing program included tests for *in-situ* moisture content, particle size analysis, percent fines, modified Proctor compaction, and Caltrans corrosion (i.e., chloride concentration, sulfate concentration, and pH). Laboratory testing procedures and results are summarized in Appendix C. Results of particle size analysis and modified Proctor compaction testing are summarized in Figures 3 and 4, respectively.

3. SITE CONDITIONS

3.1 Geologic Setting

Based on Dibblee's geologic map [1989] reproduced in Figure 5, the upland portion of the Site is located within an area of Quaternary alluvium (Qa) containing floodplain deposits consisting primarily of silt, sand, and gravel. The portion of the project to the east of the Site within the Los Angeles River Channel appears to be stream channel deposits (Qg) characterized by gravels. To the north of the Site, the Tertiary rocks of the Monterey Formation (Tmss) are considered as a rock outcrop. Dibblee indicates that this formation consists of "tan to light gray semi-friable arkosic sandstone; includes some interbedded silty shale."

Monterey Formation Bedrock was not encountered in investigations conducted, but may be present at relatively shallow depths to the north of the Site along the project alignment.

3.2 Surface Conditions and Nearby Infrastructure

Existing Site features can be identified in feature in Figure 2. The site of the Water Wheel is generally bounded by:

- Fenceline and MTA property to the north;
- Fenceline and Southern California Regional Rail Authority (SCRRA or Metrolink) right-of-way to the east witth the Los Angeles River beyond;
- Fenceline and existing buildings to the south; and
- Fenceline and City of Los Angeles right-of-way (Baker St.) to the west.

The ground surface elevation in the area of the MTA parcel is approximately 313 ft MSL.

The tunnels that will convey water to and from the Water Wheel are proposed to underlie the above outlined features. They are approximately aligned with soil profile A-A' shown in Figure 2 and will extend into the Los Angeles River Channel. Approximate locations of these tunnels are indicated in profile in Figure 6.

The Water Wheel site contains an additional City of Los Angeles right-of-way, the N. Broadway Bridge that spans over the Los Angeles River which, in turn, crosses the Site's northerly end as an overpass. Foundation design information regarding the N. Broadway Bridge is contained in Appendix D. This information indicates that the

foundations for the bridge are approximately 100 ft x 70 ft in maximum plan dimension and are surrounded by 5 ft-diameter Cast in Drilled Hole (CIDH) piers.

The Solano Drain, an approximately 66-inch diameter reinforced concrete pipe storm drain, operated by the Los Angeles County Department of Public Works crosses above the proposed tunnel alignment north of the Site (see Section 3.3 for additional information).

The presence of the N. Broadway Bridge, the existing buildings, the Metrolink rail lines, and utilities and around the Site are anticipated to be a significant design considerations for the Water Wheel and its inlet and outlet tunnels. Basic recommendations regarding existing infrastructure are outlined below. However, it is recognized that significant engineering evaluation in addition to that presented herein will be necessary to mitigate potential conflicts with existing infrastructure.

3.3 Previous Geotechnical Investigations

Boring logs associated with the retrofit of the N. Broadway Bridge to the north of the Site are available and are included in Appendix E.

Boring logs from construction of the Solano Drain are reproduced in Appendix F.

Boring logs from foundation investigations prepared for the reach of the Los Angeles River adjacent to the Site in 1941 are included as Appendix G. Of particular interest in these investigations with regard to tunneling conditions is the escarpment in "hard rock" present just to the north of the N. Broadway Bridge (Station 1251+35 and north). These rock contours indicate a rock "outcrop" at the top of the channel lining and an approximately 50-ft high slope in the "rock." This "outcrop" has a surface elevation of approximately 295 ft above mean sea level (ft MSL). The approximate projected location of this "outcrop" is shown in Figure 6. This location is adjacent to the proposed inlet tunnel, and this elevation is above the invert of the proposed tunnel.

3.4 Surface and Subsurface Soil Conditions

The Site soils encountered during the field investigation are documented in the soil profile shown in Figure 6 and the logs included in Appendices A and B. The surface of the MTA property consists of several inches of clean gravel fill. Below this clean gravel fill is an approximately 4 to 7-½ ft-thick layer of fill consisting of silty sand with gravel (Unified Soil Classification System, USCS, designation SM). This layer is distinguished from the underlying material by its relatively darker color and relatively larger gravel (and fine cobble) particle size. Below this fill layer is generally silty sand (SM) with gravel content by weight ranging from 0 to approximately 40% and

containing occasional silty to sandy low-plasticity clay layers on the order of approximately 1 ft thick. Based on the uncorrected blow counts shown on the boring logs in Appendix A, the subsurface materials may generally be characterized as "dense" to "very dense," although isolated strata of "medium dense" materials were also encountered.

Within the Los Angeles River Channel, the ground surface is covered with reinforced concrete approximately 16 in.-thick. Below this reinforced concrete is a drainage layer approximately 1-2 ft-thick consisting of gravel particles up to approximately 2-3 in. in diameter. Below the gravel drainage layer is a layer of mixed gravel and sand fill to a depth of approximately 5 ft below existing ground surface. The material underlying this fill is similar to the material encountered below the MTA property (i.e., generally "dense" to "very dense" silty sand with varying gravel content and interbedded with low-plasticity clay layers).

There is some evidence that localized pockets of large particles (i.e., cobbles to boulders) may be present in the subsurface soils. For example, CPTu-4 was terminated on refusal at approximately 24 ft below ground surface (bgs). This suggests that the probe contacted a relatively hard material, likely a strata composed of relatively large particles (i.e., gravel to cobbles). The boring log for nearby B-3 shows silty sand with approximately 20% to 30% gravel content by weight at a similar depth. Additionally, SPT sounding B-3-5 and CalMod sounding B-3-6 at 25 ft and 27 ft, respectively, show sampler refusal and partial to no recovery. Sampler refusal and low recovery are potentially consistent with the presence of gravelly soils. Based on these observations, it appears likely that relatively large-diameter particles were encountered but were unable to be sampled during the field investigation.

At the location of CPTu-1 at the north end of the Site, refusal was also encountered, potentially indicating the presence of a gravelly zone at 30.5 ft below ground surface.

Three representative soil samples (B-1-4, B-1-7, and B-5-1) were tested for chloride concentration, sulfate concentration, and pH. These values ranges from 42 to 343 parts per million (ppm) for sulfate concentration, from 31 to 117 ppm for chloride concentration, and from 8.0 to 8.7 for pH. Based on Caltrans [2003] guidelines, a soil is classified as corrosive if it has: (i) chloride concentration 500 ppm or greater, (ii) sulfate concentration 2000 ppm or greater, or (iii) pH 5.5 or less. As the laboratory results do not meet any of these criteria for corrosive soils, the Site soils are assumed to be non-corrosive per the Caltrans [2003] guidelines.

During the investigations at the B-3 location, photoionization detector (PID) readings indicated the potential of volatile organic compounds in soil samples recovered during drilling. Elevated PID readings were not encountered at other investigation locations.

3.5 Groundwater Conditions

As shown in Figure 6, groundwater was encountered in six of the test holes. Within the MTA property, the sounded depth to groundwater ranged from approximately 36-½ ft bgs (276 ft MSL) in Boring B-3 to approximately 45 ft bgs (268 ft MSL) in Boring B-1 (although saturated soil was encountered at approximately 40 ft bgs). Within the Los Angeles River Channel, groundwater was encountered at approximately 1 ft bgs. For conceptual design purposes, the elevation of the current groundwater table is conservatively assumed to be approximately 276 ft MSL.

This conservatively assumed groundwater elevation agrees reasonably well with September 2009 measurements reported by ARCADIS [2010] for groundwater monitoring well BMW-3 near the northeasterly end of the Former Cornfield Yard at 1245 N. Spring St. (across Baker St. from the Site). Recent groundwater elevations recorded at this location are included in Appendix H. Additionally, for the period from August 2000 through September 2009, ARCADIS [2010] reports that the groundwater elevation measured at well BMW-3 varied by approximately 2.6 ft. Based on this variation at the nearby monitoring well, it might be reasonable to assume that a similar variation may occur at the Site (i.e., that the groundwater elevation may regularly reach approximately 279 ft MSL or 3 feet above what is currently measured).

Historic high groundwater table elevation, which may be an appropriate assumption for liquefaction assessments and as inputs to the design of some geotechnical components of the project, is assumed to be approximately 20 ft below the existing ground surface of the MTA property (i.e., approximate elevation 293.5 ft MSL), as indicated in Appendix I.

3.6 Seismic Considerations

3.6.1 Seismic Hazard Parameters

The approximate geometric center of the Site is located at latitude 34.071571° and longitude -118.225799°. Based on the results of Site-specific measurements and interpretations shown in Figure 7 and the 2010 edition of the California Building Code (2010 CBC), the Site is classified as Site Class D (stiff soil). Seismic hazard parameters for the Site based on the 2010 CBC and the USGS [2011] earthquake ground motion tool are summarized in Table 1 below:

Table 1. Seismic Design Parameters

2010 CBC Earthquake Design Parameter	Value
Mapped Spectral Response Acceleration, S_s	2.200
Mapped Spectral Response Acceleration, S_1	0.796
Site Class	D
Spectral Response Accelerations, S_{ds}	1.466
Spectral Response Accelerations, S_{d1}	0.796
Seismic Design Category	D
PGA (2% in 50 years)	0.94 g
Magnitude M_w (fault: Raymond)	6.6

Note: These seismic design parameters have been developed using a representative shear wave velocity (Vs) of 915 ft / s (Site Class D)

Results of the probabilistic seismic hazard assessment are included in Appendix J. It is incumbent upon the Structural Engineer retained for this project to verify the above-listed seismic parameters.

3.6.2 Surface Fault Rupture

As shown in Appendix K, the Site is not contained with an Alquist Priolo Earthquake Fault Zone. As such, the potential for surface fault rupture at this Site is considered low.

3.6.3 Soil Liquefaction

As indicated in the Seismic Hazard Zones map included in Appendix E, the Site is located in an area which may potentially be affected by soil liquefaction. Because the Site is potentially susceptible to liquefaction, it was necessary to perform a Site-specific analysis to evaluate the likelihood that liquefaction may occur.

A preliminary liquefaction triggering analysis was performed using the latest iteration of the Simplified Procedure, as proposed by Idriss and Boulanger [2008]. The evaluations were performed for the soil profiles encountered at locations of B-1, B-3, B-5, B-6, CPTu-1, SCPTu-2 CPTu-3, and CPTu-4. The relevant spreadsheets are enclosed as Appendix L. The peak ground acceleration and design earthquake Moment Magnitude for the Site were assumed as 0.94 g and M_w 6.6, respectively. A historic

high groundwater elevation of approximately 20 ft below existing ground surface in the MTA property (i.e., approximate elevation 293.5 ft MSL) was assumed for soil liquefaction evaluations. Within the Los Angeles River, the historic high groundwater elevation was assumed to correspond to the existing ground surface.

The results of the soil liquefaction triggering potential assessment suggest that pockets of soil which may potentially experience liquefaction in the design seismic event are present with the soil profile at locations within the proposed water wheel excavation area (B-1, SCPTu-2, CPTu-3) and at the proposed inlet structure at the northern end of the project (B-5). Locations of these potentially liquefiable soil zones are identified by orange shading in Figure 6. Detailed triggering calculations are included in Appendix L.

In each case the portions of the subsurface identified as potentially liquefiable consisted of scattered discontinuous pockets. These pockets were isolated and ranged from less than 1 ft in thickness up to approximately 10 ft thick. The variability in the subsurface over short vertical distances is illustrated vividly by Figure 1 in Appendix L. This figure shows that potentially liquefiable materials exist over very short intervals separated by more resistant materials. Additionally these deposits were not found to be continuous laterally over large distances as illustrated by Figure 6.

At potentially liquefiable locations, estimates of liquefaction induced settlement were made using the methods proposed by Idriss and Boulanger [2008]. Table 2 provides the results of these evaluations. Detailed calculations are included in Appendix L.

Table 2. Estimated Liquefaction Induced Settlement

Boring/Sounding	Location	Estimated Total Liquefaction-Induced Settlement
B-1	Water Wheel	~ 3 inches
B-5	Upstream Inlet	~1 inch
SCPTu-2	Water Wheel	~3 inches
CPTu-3	Water Wheel	~ 2 inches

4. RECOMMENDATIONS

4.1 Tunneling Considerations

As Geosyntec has retained Jacobs Associates (Jacobs) as a specialist in the interpretation of ground conditions and design for tunneling, it is not the intention of the report to provide specific conclusions regarding the feasibility of tunneling at this location or the suitability of various tunneling methods at this time. It is our understanding that, by using the information contained this report as background, Jacobs will provide input regarding these matters.

Metrolink's criteria for conduits underneath their right-of-way are likely to control the design of the final tunnel system. Metrolink's Engineering Standard 50001 included as attachment M provides information regarding design standards for tunnels of the type proposed. This guidance document which addresses the acceptable design of casing and carrier pipe should be consulted during the conceptual design process.

4.2 Liquefaction

As described in Section 3, liquefaction may potentially occur at isolated locations in the soil profile under the design seismic loading. As described below, the impacts of this liquefaction potential are anticipated to be minimal and can be mitigated as part of the structural design of the proposed facilities.

4.2.1 Liquefaction-Induced Settlement

Based on the results of engineering evaluations documented herein, it is anticipated that soil liquefaction-induced settlements will not exceed 3 inches. While lenses and pockets of potentially liquefiable material make the amount of differential settlement difficult to estimate, a differential settlement on the order of one-half the total settlement estimated over a 40-ft span is a good approximation for structural design purposes.

Per CGS [2008], settlements less than 4 inches are considered a tolerable level of liquefaction-induced ground movement for structures if appropriate structural mitigation in the form of properly engineered foundation is provided. As such it is not anticipated that mitigation by ground modification will be required. CGS [2008] notes that heavily reinforced mats and piles have performed well as foundation systems in similar conditions in recent earthquakes. As discussed below both of these options should be considered during the type selection phase for the wheel excavation retaining wall and the inlet and outlet structures.

Liquefiable soils and related differential settlements have the potential to impact the proposed tunnels. Tunnel designers should be aware of the liquefaction-induced settlement hazard and prepare tunnel designs accordingly.

4.2.2 Liquefaction-Induced Lateral Spreading

Given the observed lateral heterogeneity of the subsurface at the Site it appears that liquefaction induced lateral spreading is not a significant hazard at the Site. No continuous liquefiable layer extending to a free face was identified during this investigation. The discontinuous pockets of potentially liquefiable soil present will likely be restrained by the surrounding more resistant pockets.

4.3 Other Geologic Hazards

In general, with the exception of strong ground shaking, it does not appear that other Geologic Hazards are likely to control design of the proposed structure.

4.4 Groundwater Elevations

It is recognized that the groundwater elevation reported herein may fluctuate with time. Because the magnitude of the potential fluctuation is undetermined at this time, it should be conservatively assumed in design that all or a portion of the soil retained by the selected earth retaining system is saturated and therefore exerts greater lateral earth pressure than under unsaturated conditions. Furthermore, the design should incorporate measures to mitigate potential detrimental effects associated with seepage of groundwater into the excavation (e.g., piping of fines, etc.).

For design of permanent features, a groundwater elevation at the "Historic High" groundwater elevation shown in Figure 6 (293.5 ft MSL) should be assumed.

4.5 Environmental Site Impacts

Environmental site impacts are described in Geosyntec [2012] and are not the subject of this report.

4.6 Soil Corrosivity

Based on the results of laboratory testing for soil corrosivity, the Site soils are considered to be non-corrosive per Caltrans [2003]. This finding suggests that extraordinary corrosion mitigation measures are not required for the Site.

4.7 Protection of Existing Infrastructure

Underground, overhead, and surficial utilities were observed to be present at the Site. Some of these utilities may need to be relocated for the construction to proceed. Other of these utilities may not be able to be relocated, requiring protection using appropriate construction methods and shoring as applicable. It is recommended to locate utilities present on the Site and to develop plans for relocating or protecting utilities as necessary. The scope of this locating study should include the entirety of the proposed tunnel alignment in addition to the MTA property.

As part of this Site survey and utility locating effort, the location of the foundations at Pier of the N. Broadway Bridge should be evaluated to confirm as-built information as the location of these foundations may control project alignment.

The proposed inlet and outlet tunnels are planned to pass below the Metrolink rail lines, which have strict settlement tolerances as dictated by [SCRRA, 2009]. These tolerances are ½ inch of movement in the horizontal and vertical directions. Because settlement tolerances for the Metrolink lines are small, methods for limiting (to the extent practicable) ground loss during tunneling should be investigated during the design stage. Metrolink's design settlement criteria are contained in Section 9.0 of SCRRA [2009].

Once a conceptual design for the Water Wheel is completed (e.g., structure is sized, preliminary retaining system is selected, etc.), approaches for the protection of existing infrastructure and related implications for proposed construction should be addressed.

In order to reduce the risk to nearby infrastructure created by the Water Wheel construction, a geotechnical instrumentation and monitoring program in conformance with SCRRA [2009] and other relevant guidance should be developed in conjunction with the Water Wheel design. Instrumentation described in this plan may include a combination of piezometers (to assess groundwater conditions), inclinometers (to assess lateral ground deformation), and settlement monuments (to assess vertical ground deformation).

4.8 Candidate Foundations Systems

Given the current design concepts, it is assumed that the water wheel itself will share its foundation with the associated retaining/box structure. As part of the foundation type selection process, the following foundation systems should be evaluated for the water wheel and associated box structure.

- Reinforced concrete structural mat system;
- Cased in drilled hole piers supporting a reinforced concrete slab; and
- Driven piles supporting a reinforced concrete slab.

4.9 Potential Retaining Structure System

As described above, the final retaining structure surrounding the water wheel is likely to serve as the foundation system for the water wheel itself. The following retaining system should be considered as part of the foundation type selection process.

- Cast in place reinforced concrete wall potentially including counterforts;
- Diaphragm Walls;
- Secant Pile Walls; and
- Cast in place reinforced concrete wall with tie backs (as a hybrid with other methods).

Metrolink representatives have indicated to Geosyntec that while temporary tiebacks are acceptable as part of retaining wall system as long as they are a minimum of 10-15 ft below the grade of the existing rail lines, tiebacks within the Metrolink right-of-way are not acceptable in the final condition [Patel, 2012]. This restriction relates to the possibility of future construction within the right-of-way. As such, if tiebacks are proposed in the final configuration, it would need to be as part of a hybrid approach with other retaining systems.

While diaphragm walls and secant pile walls are other options, they are viewed as not as economical as the cast-in-place options.

4.10 Lateral Earth Pressures

Table 3 below provides a set of equivalent fluid pressure (EFP) values for the Site. The EFP concept is commonly used in the estimation of the static lateral earth pressure which a retaining wall or shoring system will be required to resist. EFP is expressed as the unit weight of an ideal fluid which would generate a hydrostatic pressure equal to the anticipated static lateral earth pressure at a given depth.

Table 3. Equivalent Fluid Pressures

	Equivalent Fluid Pressure	
	Above Groundwater Table	Below Groundwater Table
Active Condition	41.7 pcf	84.9 pcf
At-Rest Condition	62.5 pcf	96.2 pcf
Passive Condition	375.0 pcf	265.2 pcf

Table 3 lists EFPs corresponding to two saturation conditions. The "Above Groundwater Table" and "Below Groundwater Table" columns indicate that the EFP increases when the soil is saturated. The "Below Groundwater Table" condition accounts for the hydrostatic water pressure, in addition to the static lateral earth pressure.

Table 3 also lists EFPs corresponding to three displacement conditions. The appropriate condition depends on the type of wall or shoring system selected, as well as on the installation method. For example:

- A flexible sheet pile wall system might experience "Active" conditions;
- A cast-in-place diaphragm wall system might experience "At-Rest" conditions; and
- A tensioned tieback wall system might experience "Passive" conditions.

The EFP values provided in Table 3 are recommended to be used for screening or preliminary development of retaining or shoring options for the Site. The EFP values listed in Table 3 account for static ground conditions and hydrostatic water pressure only. These values do not account for the effects of surcharge loading, groundwater seepage forces, seismic loading, or other possible loading conditions. The EFP values in Table 3 do not include a Factor of Safety and do not account for deformation or serviceability criteria. The geotechnical engineer for the proposed improvements should develop appropriate loading parameters for temporary and permanent conditions during the detailed design phase.

4.11 Additional Groundwater Investigation

To allow for additional information regarding the seasonal fluctuation of groundwater at the Site, a piezometer should be established at a location near the location of the proposed excavation. This piezometer should be monitored using a level logger capable of recording groundwater elevations over time. This piezometer may continue to be monitored until and during construction.

5. CONCLUSIONS

Based on the results of this focused geotechnical investigation, with respect to geotechnical considerations, the proposed project appears to be buildable.

Based on the results of focused geotechnical investigations, the tunneling designer should evaluate the ground conditions along the proposed tunnel alignment and make comment regarding the feasibility of the proposed tunnel construction. Final decisions regarding tunneling methods and alignments should be made in conjunction with a tunneling contractor selected to assist in the design process.

Selection of the foundation and retaining wall systems should occur as part of a "type selection" process where the geotechnical engineer, structural engineer, and tunneling engineer review potential foundation/retaining wall system combinations together and provide conclusions regarding each system. The results of this process should be a type selection memorandum documenting the selected system and design basis.

After the "type selection" process is complete, a detailed foundation design report should be prepared to provide input required by the structural engineer and the tunneling engineer for detailed design.

6. LIMITATIONS

The work documented in this Report focuses on the evaluation of geotechnical characteristics of subgrade soils at the Site. The recommendations presented in this Report are based on the understanding of the proposed project, as outlined in Section 1 of this Report. Geosyntec should be notified of any significant changes so that we may either confirm or modify our recommendations.

The Report, exploration logs, and other materials resulting from Geosyntec's efforts were prepared exclusively for use by Metabolic Studio and its consultants in planning the proposed construction. The Report is not intended to be suitable for reuse on extensions or modifications of the project or for use on any project other than the currently proposed project as it may not contain sufficient or appropriate information for such uses. If this Report or portions of this Report are provided to contractors or included in specifications, it should be understood that they are provided for information only.

Soil deposits may vary in type, strength, and many other important properties between points of exploration due to non-uniformity of the geologic formations or to man-made cut and fill operations. While we cannot evaluate the consistency of the properties of materials in areas not explored, the conclusions drawn in this Report are based on the assumption that the data obtained in the field and laboratory are reasonably representative of field conditions and are conducive to interpolation and extrapolation.

Our investigation and evaluations were performed using generally accepted engineering approaches and principles available at this time and the degree of care and skill ordinarily exercised under similar circumstances by reputable Geotechnical Engineers practicing in this area. No other representation, either expressed or implied, is included or intended in our Report.

7. CLOSURE

We appreciate the opportunity to extend our service to Metabolic Studio. If you have any questions about this letter report or require additional explanation of the information presented in this report, please do not hesitate to call the undersigned at (714) 969-0800.

Sincerely,

Alan F. Witthoeft, P.E.
Engineer



Christopher S. Conkle, P.E., G.E.
Project Engineer

8. REFERENCES

ARCADIS [2010] "Addendum to the Summary of Site Conditions and Request for Closure Report," dated January 2010, *Technical Report*, ARCADIS, Fullerton, California.

Caltrans [2003] "Corrosion Guidelines," Version 1.0, dated September 2003, Corrosion Technology Branch, Materials Engineering and Testing Services, Division of Engineering Services, California Department of Transportation, Sacramento, California.

CGS [2008] "Special Publication 117A - Guidelines for Evaluating and Mitigation Seismic Hazards in California" California Geological Survey, Sacramento, California.

Dibblee and Ehrenspeck [1989], Geologic Map of Los Angeles Quadrangle, Geologic Map, Dibblee Geological Foundation, Santa Barbara, California.

Geosyntec [2012] "Focused Assessment of Soil and Groundwater at 1800 Baker Street, Los Angeles, California," dated 3 August 2012, *Technical Memorandum*, Geosyntec Consultants, Huntington Beach, California.

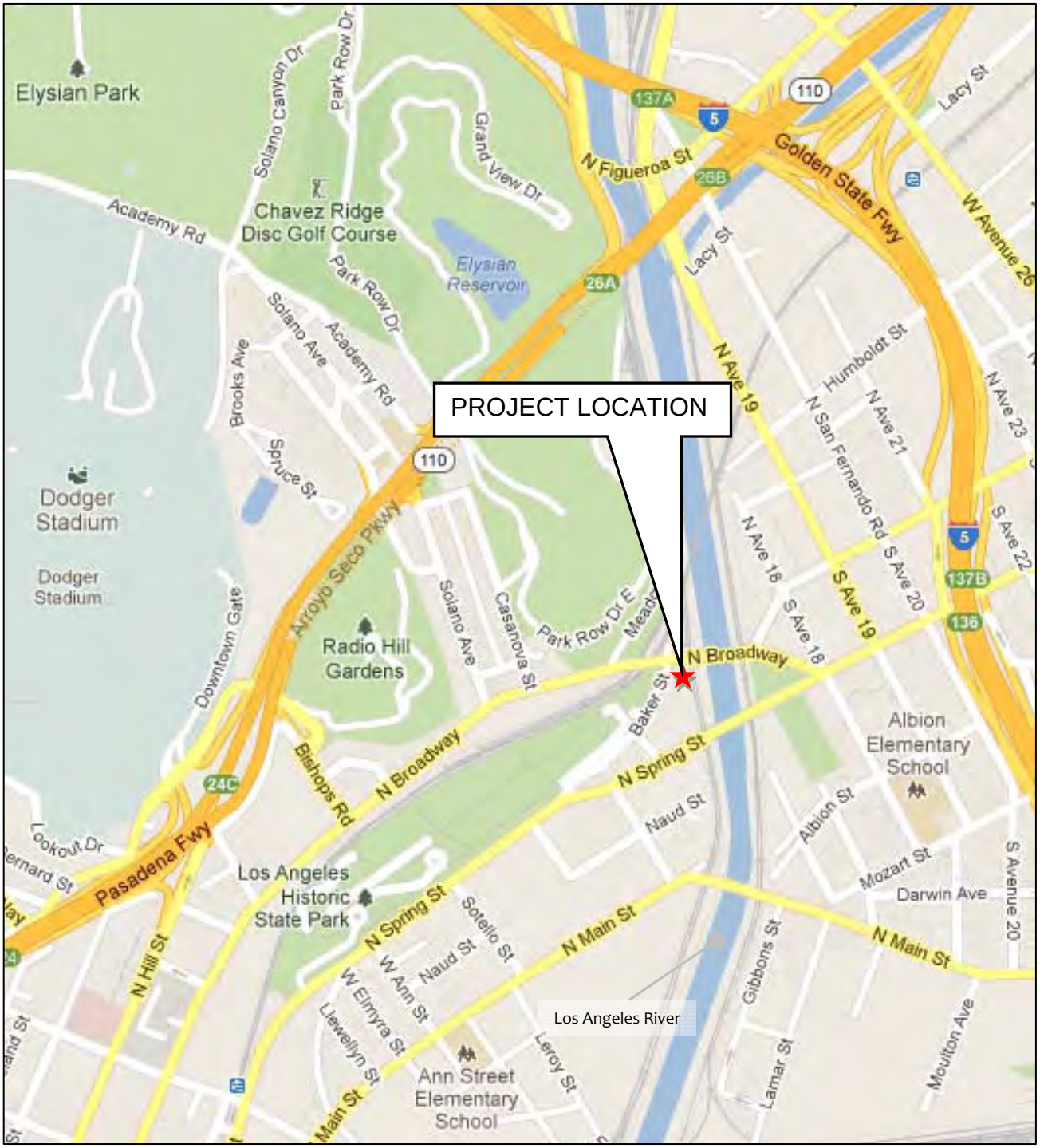
Idriss and Boulanger [2008] "Soil Liquefaction During Earthquakes," *Monograph*, Earthquake Engineering Research Institute, Berkeley, California.

Patel [2012] Personal communication with Naresh Patel, Assistant Director, Standards and Design, SCRRA on September 20, 2012.

SCRRA [2009], "SCRRA Excavation Support Guidelines," Technical Manual, Dated July 2009.

USGS [2011], "Earthquake ground motion tool, Beta Version," The United States Geological Survey Web Page.

FIGURES



NORTH

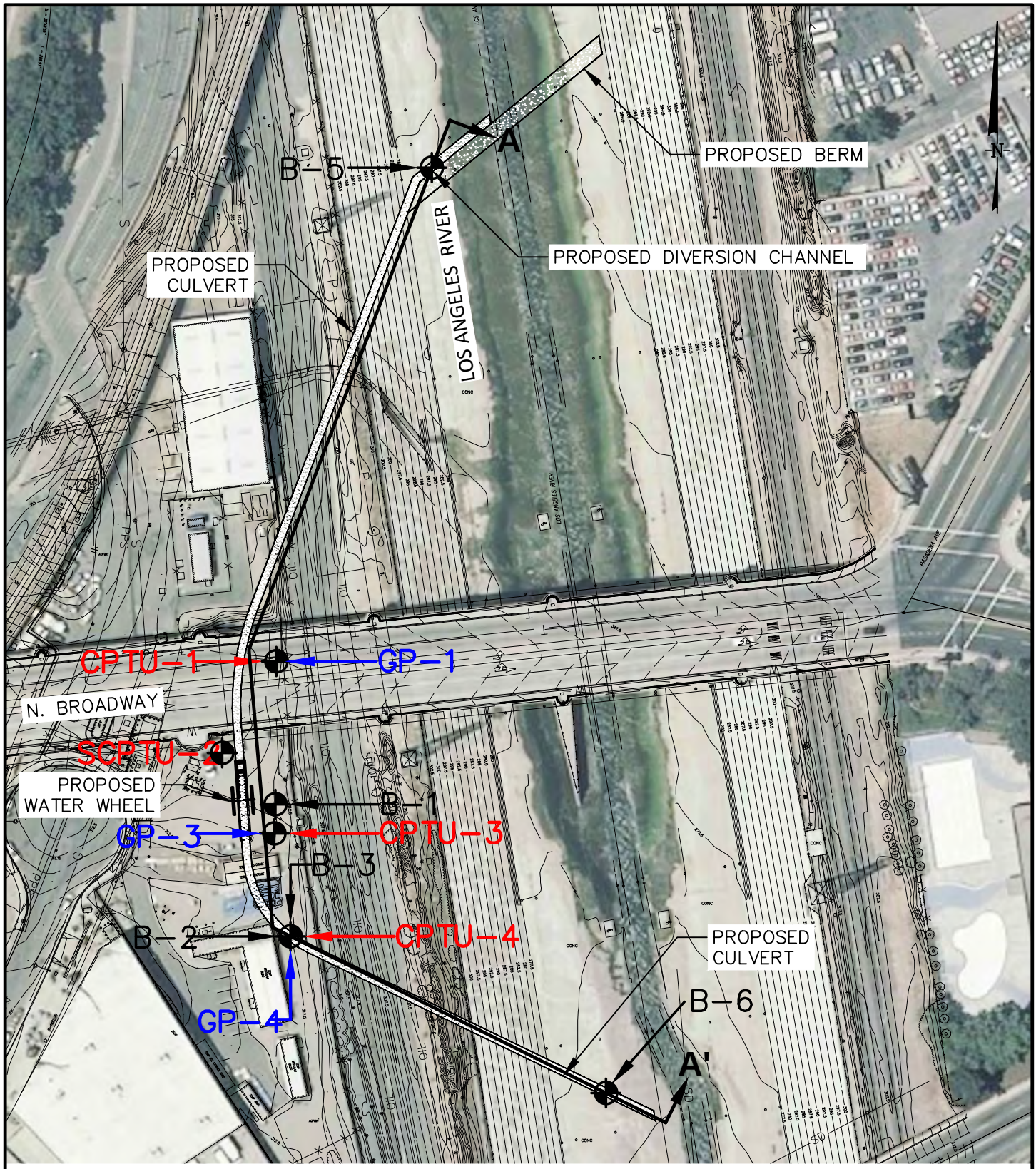
NOT TO SCALE

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SITE VICINITY MAP
SIEMPRE AGUA AND LA NORIA: THE LOS ANGELES RIVER WATER WHEEL PROJECT
LOS ANGELES, CALIFORNIA

DATE:	**APRIL 2013**	**FILE NO.**	**PC**
PROJECT NO.	**LA0257-03**	**FIGURE NO.**	**1**

Figure 1 - Site Vicinity.doc



LEGEND

B–1	BORING LOCATION
CPTU–1	CPT LOCATION
GP–1	DIRECT PUSH LOCATION
A A'	SOIL PROFILE
	ELEVATION CONTOUR

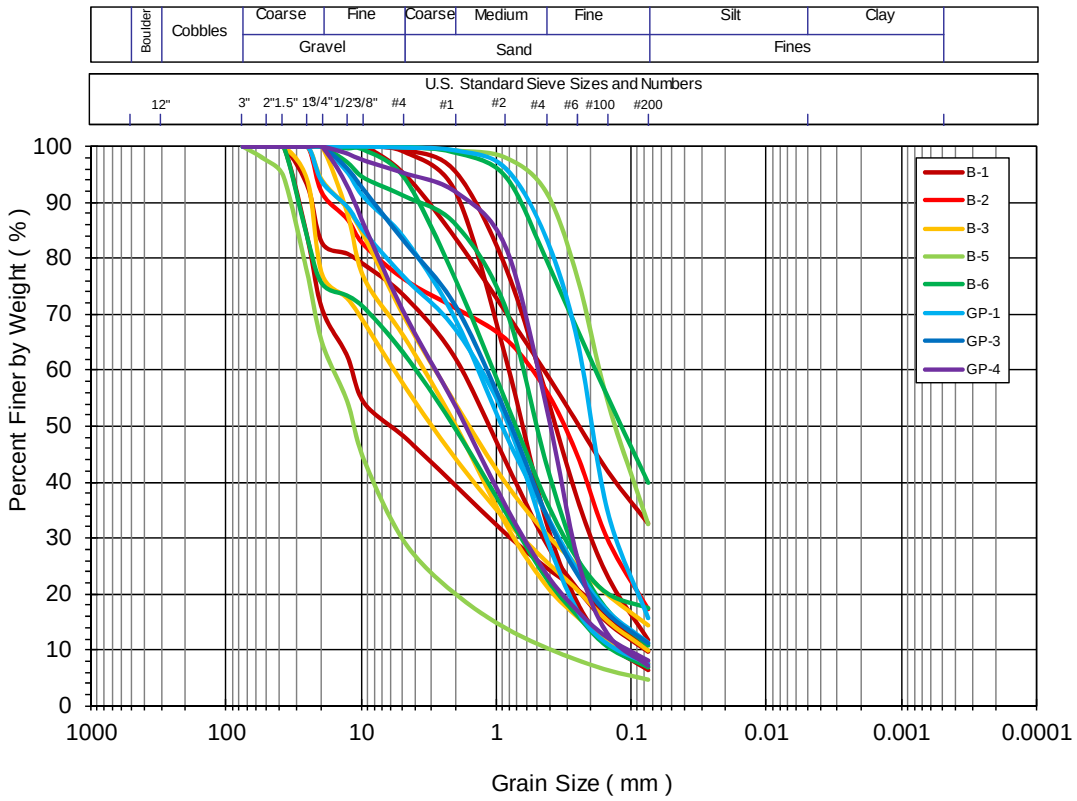
Geosyntec consultants

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GEOTECHNICAL INVESTIGATION LOCATIONS
LA RIVER WATER WHEEL
LOS ANGELES, CALIFORNIA

DATE:	FEBRUARY 2013	FILE NO.	0257F005
PROJECT NO.	LA0257–03	FIGURE NO.	2

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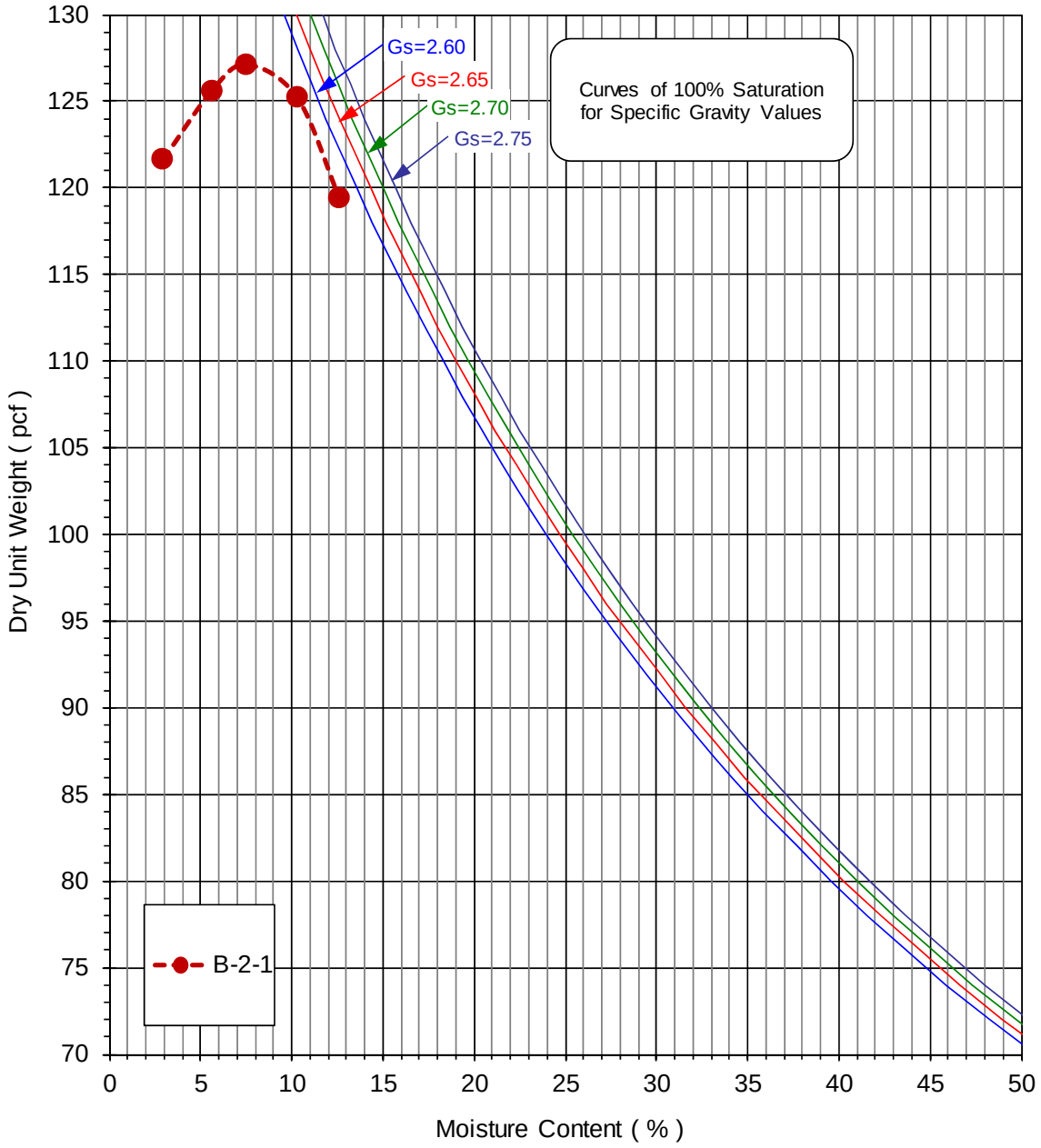
Sample	Elevation (ft MSL)	% Fines	Soil type
B-1-5	293	9.8	GP-GM
B-1-8A	278	32.6	SM
B-1-9	272	9.7	SM
B-1-12	257	6.4	SM
B-1-13	252	11.8	SM
B-2-1	311	17.3	SM
B-3-4	292	9.9	SM
B-3-7	284	14.4	SM
B-3-8	282	7.7	SM
B-5-3	272	4.7	GP
B-5-7	259	32.5	SM
B-6-3	261	6.9	SP-SM
B-6-5	251	17.5	SM
B-6-7	241	39.9	SM
B-6-9	231	10.8	SW-SM
GP-1-8	295	7.5	SW-SM
GP-1-16	281	15.7	SM
GP-1-19	271	11.3	SW-SM
GP-3-4	300	11.2	SW-SM
GP-4-5	302	7.2	SP-SM
GP-4-7	297	8.1	SW-SM

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INDEX TESTING RESULTS FOR ON-SITE SOILS
SIEMPRE AGUA AND LA NORIA: THE LOS ANGELES RIVER WATER WHEEL PROJECT
LOS ANGELES, CALIFORNIA

DATE:	**APRIL 2013**	**FILE NO.**	**AFW**
PROJECT NO.	**LA0257-03**	**FIGURE NO.**	**3**

ASTM D 1557 **COMPACTION MOISTURE-DENSITY RELATIONSHIP** Modified - Method B

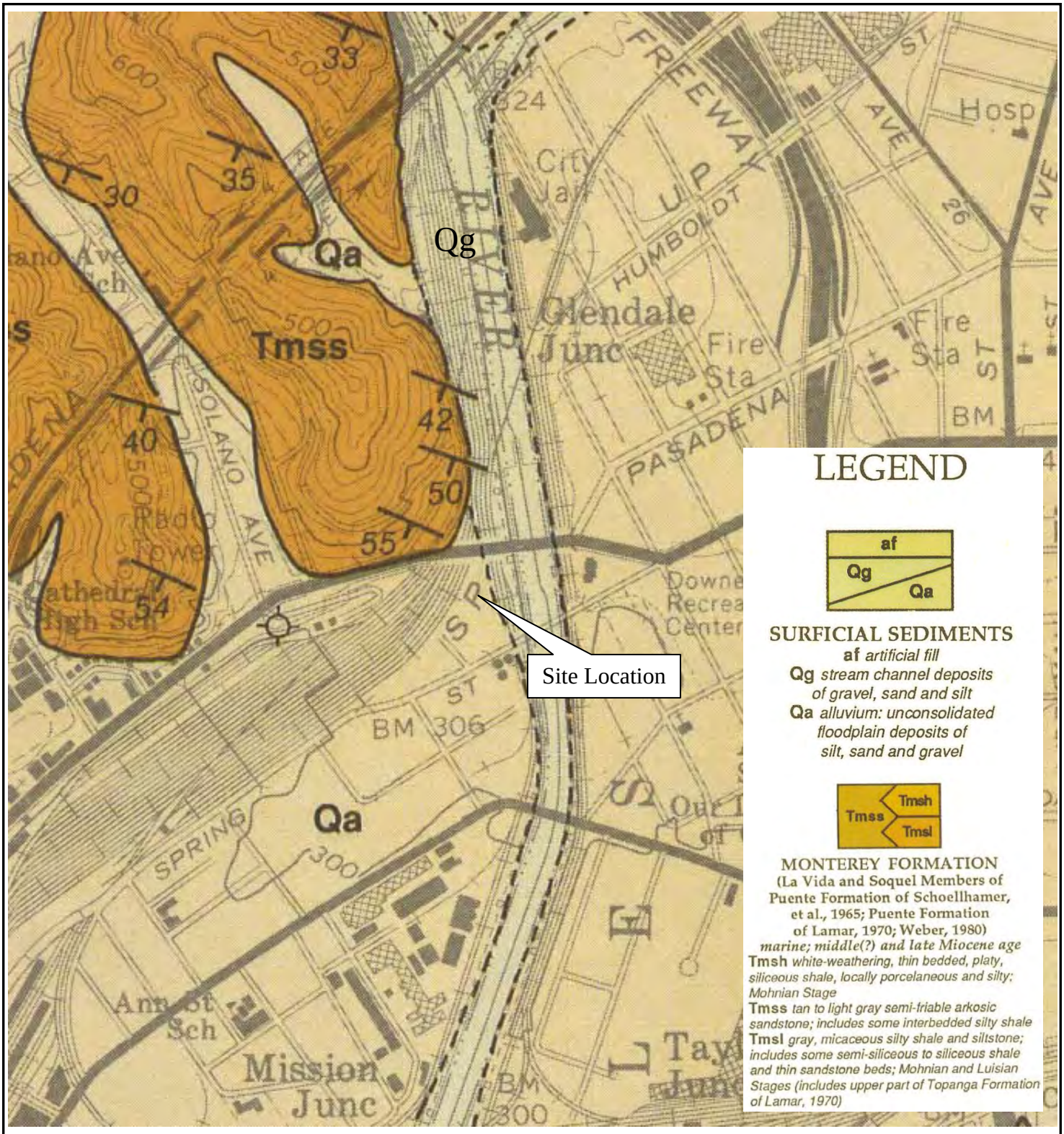


Sample ID	Lab Sample No:	Maximum Dry Unit Weight (pcf)	Optimum Moisture Content (%)	Remarks
B-2-1		127.0	7.4	SM

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COMPACTION PROPERTIES OF REPRESENTATIVE SOIL SAMPLE
SIEMPRE AGUA AND LA NORIA: THE LOS ANGELES RIVER WATER WHEEL PROJECT
LOS ANGELES, CALIFORNIA

DATE:	**APRIL 2013**	**FILE NO.**	**AFW**
PROJECT NO.	**LA0257-03**	**FIGURE NO.**	**4**

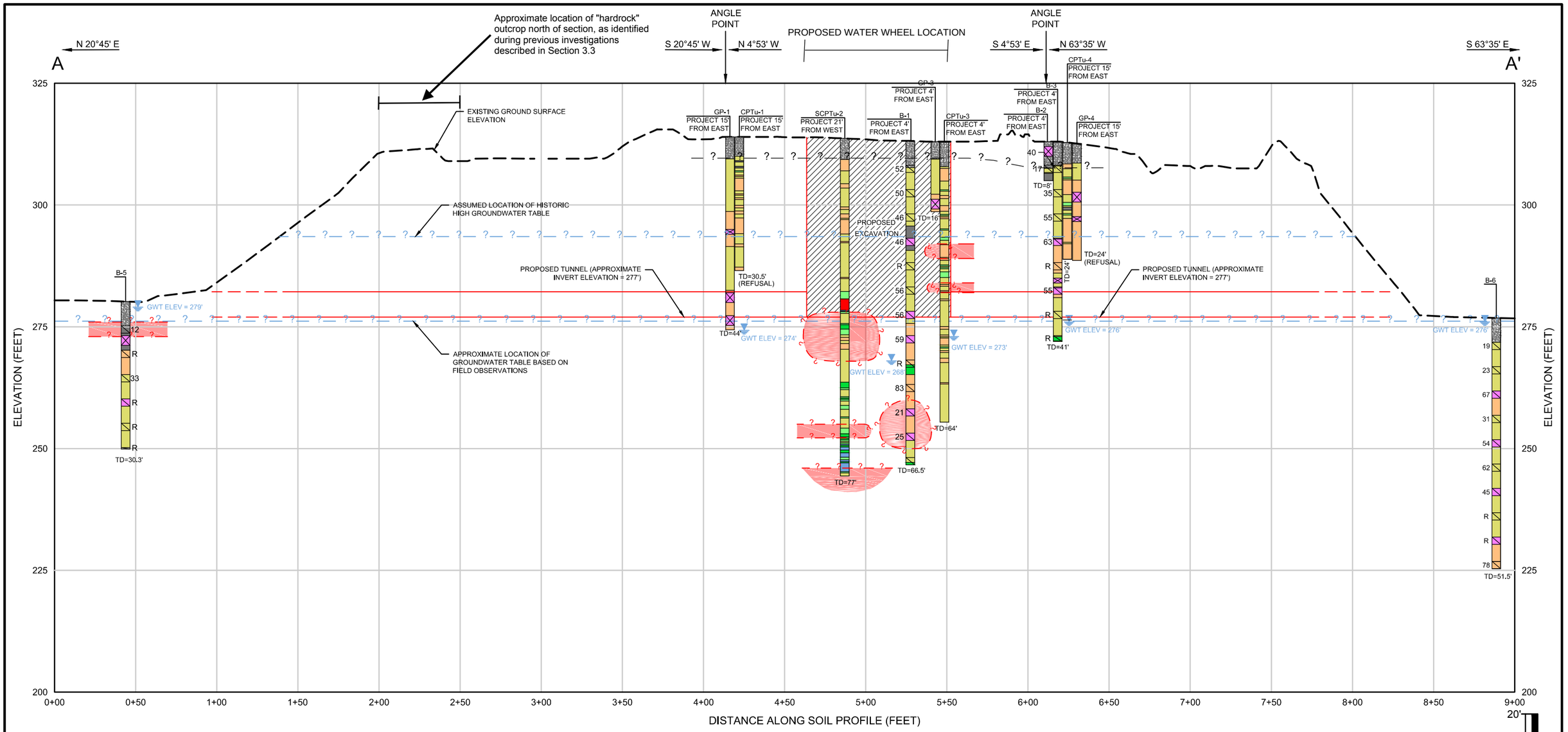


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SITE GEOLOGIC MAP
SIEMPRE AGUA AND LA NORIA: THE LOS ANGELES RIVER WATER WHEEL PROJECT
LOS ANGELES, CALIFORNIA

DATE:	**APRIL 2013**	**FILE NO.**	
PROJECT No.	**LA0257-03**	**FIGURE NO.**	**5**



SOIL BEHAVIOR TYPE

- SENSITIVE FINE GRAINED
- ORGANIC SOIL
- CLAY
- CLAY AND SILTY CLAY
- SILTY SAND AND SANDY SILT
- SAND AND SILTY SAND
- SAND
- VERY DENSE/STIFF SOIL
- VERY DENSE/STIFF SOIL

LEGEND

- GROUNDWATER OBSERVED IN BORING
- FILL
- REPRESENTATIVE SOIL SAMPLE RECOVERED
- ESTIMATED GROUNDWATER TABLE ELEVATION
- EXISTING GROUND SURFACE ELEVATION
- 52 STANDARD PENETRATION TEST AND BLOW COUNT
- BULK SOIL SAMPLE
- POTENTIALLY LIQUEFIABLE SOIL PER SIMPLIFIED METHOD

TD	TOTAL DEPTH
GWT	GROUNDWATER TABLE
ELEV	ELEVATION
B	HOLLOW-STEM AUGER OR MUD ROTARY BORING
GP	GEOPROBE
CPTu	CONE PENETRATION TEST WITH PORE PRESSURE MEASUREMENT
SCPTu	CPTu WITH SHEAR WAVE VELOCITY MEASUREMENT
R	SAMPLER REFUSAL

NOTE:

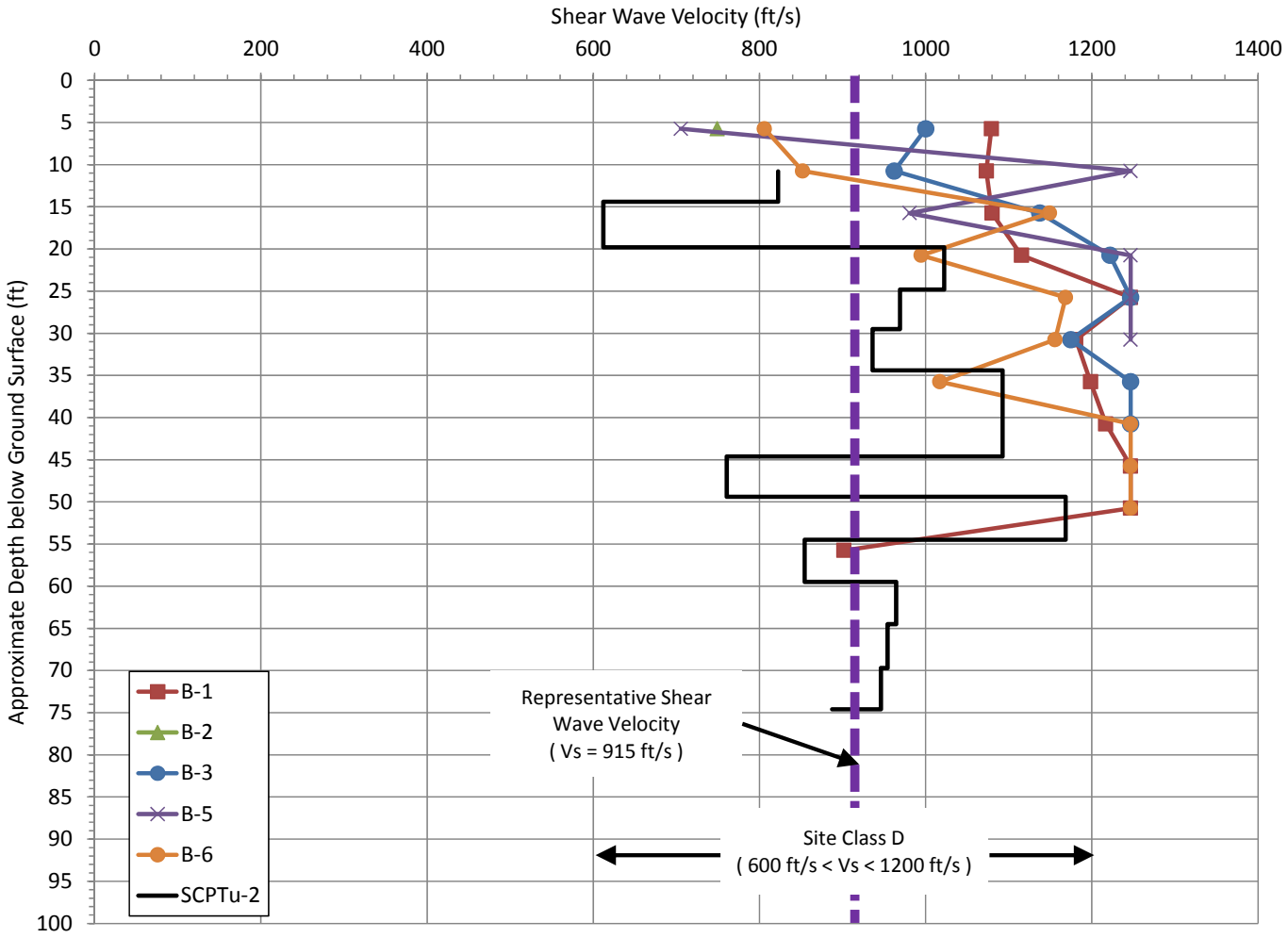
1. EXISTING GROUND SURFACE ELEVATION SHOWN BASED ON SURVEY BY CABRINHA, HEARN & ASSOCIATES DATED OCTOBER 2012.

Geosyntec consultants

SOIL PROFILE A-A'
LOS ANGELES WATER WHEEL
LOS ANGELES, CALIFORNIA

DATE:	APRIL 2013	FILE NO.	0257F006
PROJECT NO.	LA0257-03	FIGURE NO.	6

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Notes:

1. Shear wave velocity for SCPTu-2 location measured directly using seismic CPT method.
2. Shear wave velocity for B-1, B-2, B-3, B-5, and B-6 locations estimated based on SPT blow count using Caltrans [2009] correlation.
3. Site Class D limits shown based on 2009 IBC.

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SHEAR WAVE VELOCITY AND SITE CLASSIFICATION
SIEMPRE AGUA AND LA NORIA: THE LOS ANGELES RIVER WATER WHEEL PROJECT
LOS ANGELES, CALIFORNIA

DATE:	APRIL 2013	FILE NO.	AFW
PROJECT NO.	LA0257-03	FIGURE NO.	7

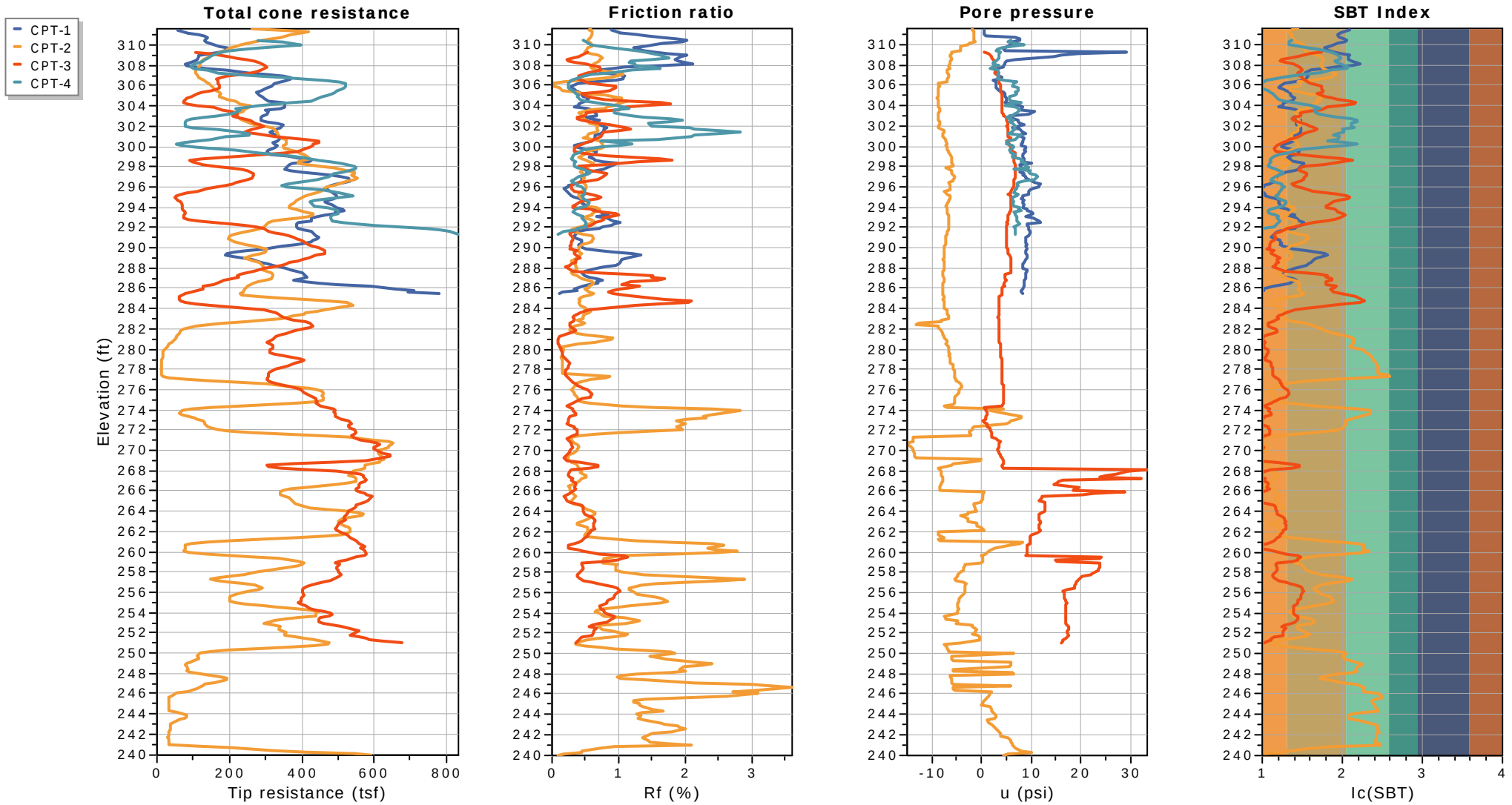
APPENDIX A

CPT SOUNDING LOGS AND INTERPRETATION

Geosyntec consultants
Geosyntec Consultants
2100 Main St., Ste. 150
Huntington Beach, CA
www.geosyntec.com

Project: **LA Water Wheel**
Location: **1800 Baker St., Los Angeles, CA**

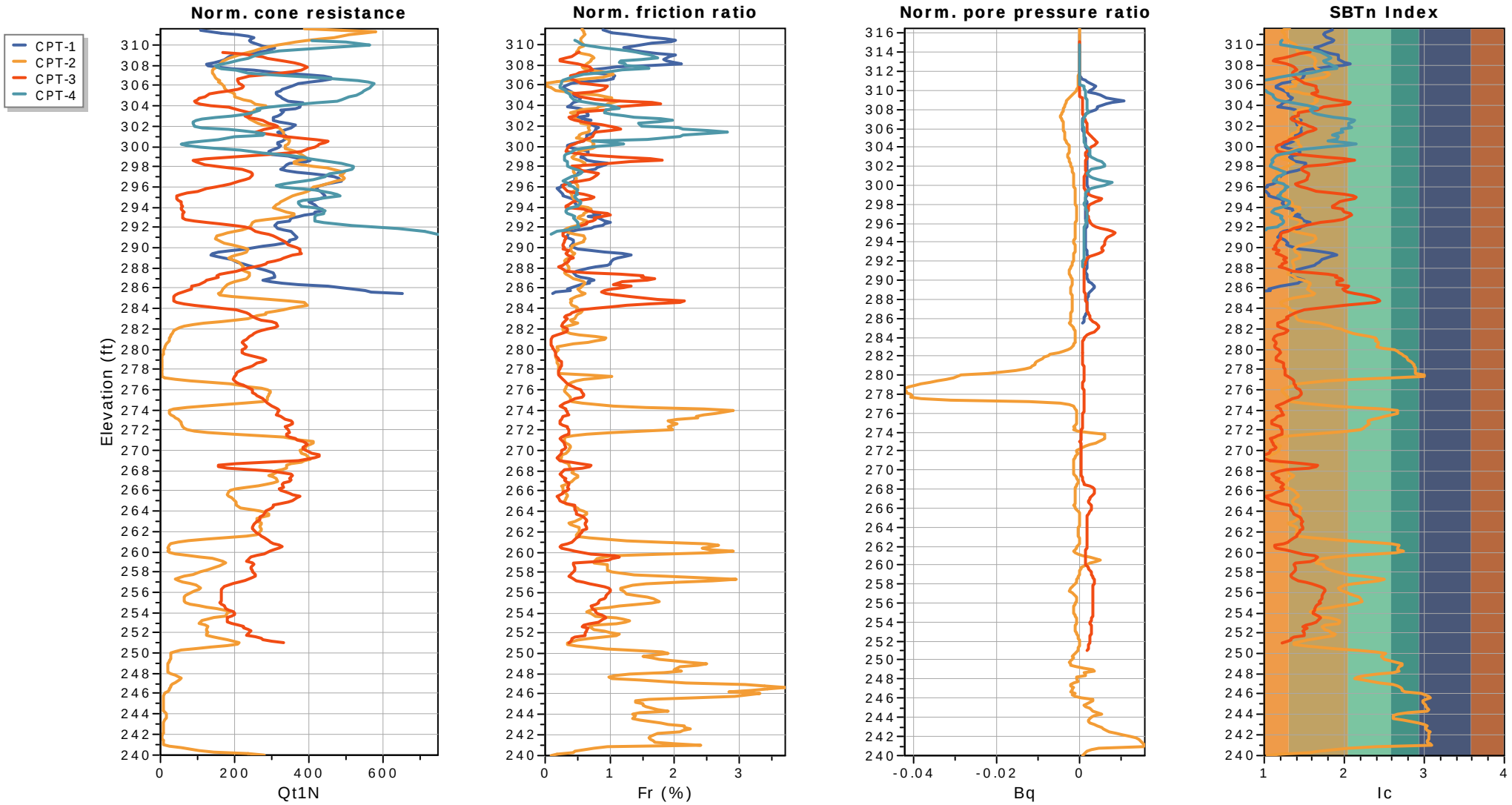
Overlay basic interpretation plots



Geosyntec consultants
Geosyntec Consultants
2100 Main St., Ste. 150
Huntington Beach, CA
www.geosyntec.com

Project: **LA Water Wheel**
Location: **1800 Baker St., Los Angeles, CA**

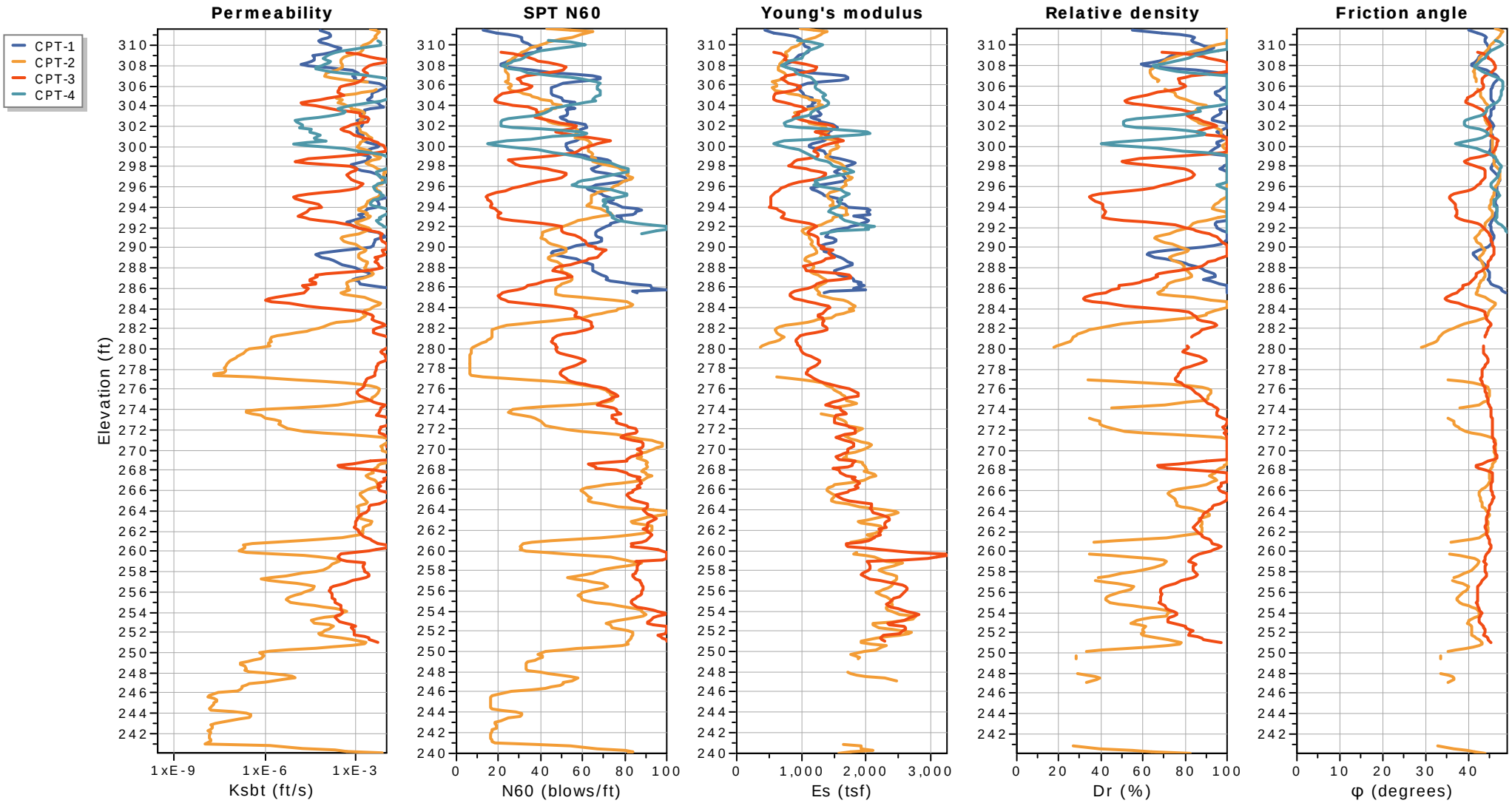
Normalized basic plots



Geosyntec Consultants
2100 Main St., Ste. 150
Huntington Beach, CA
www.geosyntec.com

Project: LA Water Wheel
Location: 1800 Baker St., Los Angeles, CA

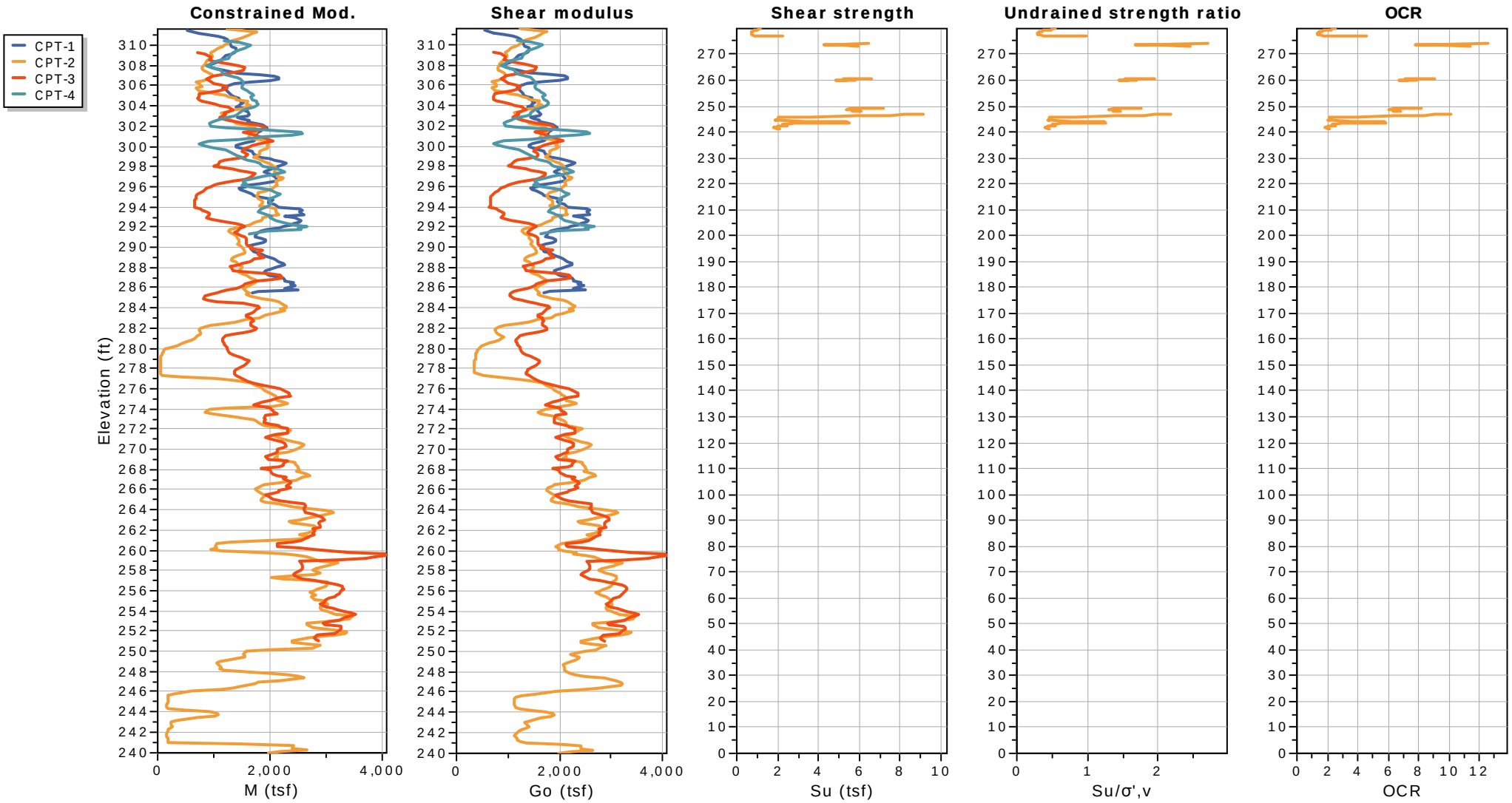
Overlay estimation plots (1)



Geosyntec Consultants
2100 Main St., Ste. 150
Huntington Beach, CA
www.geosyntec.com

Project: LA Water Wheel
Location: 1800 Baker St., Los Angeles, CA

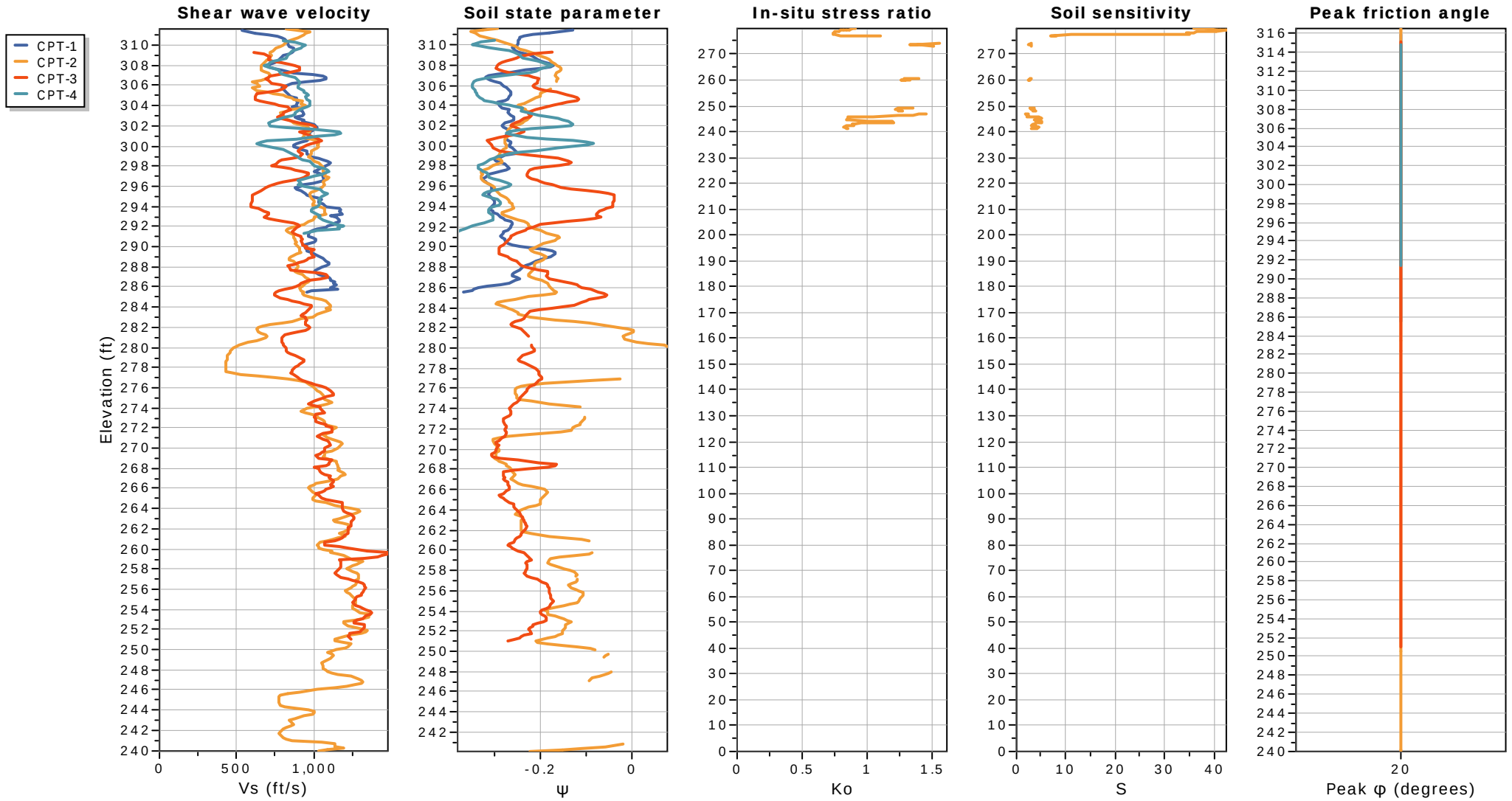
Overlay estimation plots (2)



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Project: LA Water Wheel
Location: 1800 Baker St., Los Angeles, CA

Overlay estimation plots (3)



Geosyntec consultants

APPENDIX B

BOREHOLE AND GEOPROBE™ LOGS

Geosyntec consultants
2100 Main St
Suite 150
Huntington Beach, CA 92648
Tel: (714) 969-0800
Fax: (714) 969-0820

GS FORM: GEOTECH2 01/04

BOREHOLE LOG

BORING B-1 **SHEET** 1 OF 3
START DRILL DATE Jul 20, 12 **ELEVATION DATA:**
FINISH DRILL DATE Jul 20, 12 **GROUND SURF. (Ft)** 313
LOCATION Los Angeles, CA **TOP OF CASING (Ft)**
PROJECT LA Water Wheel **DATUM** MSL (NAVD88)
NUMBER LA0257

DESCRIPTION: 1) Soil Name (USCS) 2) Color 3) Moisture 4) Grain Size 5) Percentage 6) Plasticity 7) Density/Consistency 8) Other (Mineral Content, Discoloration, Odor, etc.)

COMMENTS: 1) Rig Behavior 2) Air Monitoring 3) Pocket Pen 4) Tor Vane

DEPTH (ft-bgs)	ELEVATION (ft)	DESCRIPTION	GRAPHIC LOG	SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PID READING (ppm)	TIME (00:00)	COMMENTS	DRY DENSITY (pcf)	MAX. DRY DENSITY (pcf)	PERCENT FINES (%)	PERCENT GRAVEL (%)	MOIST. CONTENT (%)	OPT. MOIST. CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX
0	312	FILL - SM - Silty sand with gravel, dark brown, dry to moist, medium to coarse gravel, fine to medium sand, (15,60,25), non-plastic		B-1-1					0.0		Rocks at 1 ft bgs Metal fragment at 3ft bgs									
	311																			
	310																			
	309																			
5	308			B-1-2		26 27 25	52	Full	0.0											
	307	SM - Silty sand with gravel, grayish brown, dry to moist, fine to medium gravel, fine to coarse sand, (30,40,30), non-plastic																		
	306																			
	305	SM - Silty gravelly sand, gray, dry, fine sand, fine to coarse gravel, (30,50,20), non-plastic																		
	304																			
10	303			B-1-3		23 24 26	50	1/3												
	302																			
	301																			
	300																			
	299																			
15	298			B-1-4		14 18 28	46	Full	0.0											
	297	SM - Silty sand with gravel, gray, dry to moist, fine to coarse sand, fine to medium gravel, (40,40,20), non-plastic																		
	296																			
	295	GP-GM - Poorly graded gravel with silt and sand, fine to coarse sand, fine to medium gravel, (52,38,10), non-plastic																		
	294																			
20	293			B-1-5		15 13 33	46	2/3	0.0					9.8		2.8		NP	NP	NP
	292																			
	291																			
	290	SM - Silty sand with gravel, brown, fine gravel, (15,65,20)																		
	289																			
25	288			B-1-6		41 33 50-5"	R	Full	0.0											
	287																			
	286																			
	285	SM - Silty sand, brown, moist, fine sand, (0,70,30), non-plastic																		
	284																			
30	283																			

CONTRACTOR ABC Liovin **NORTHING**
EQUIPMENT CME 75 **EASTING**
DRILL MTHD Hollow-stem auger **COORDINATE SYSTEM:**
DIAMETER 7" O.D. Local (ft)
LOGGER AFW **REVIEWER** CSC

NOTES: 140 lb. autohammer; MiniRAE 3000 PID with 11.7 eV lamp; saturated soil at 40 ft; water level sounded at 45 ft; "R" denotes sampler refusal

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

Geosyntec consultants
2100 Main St
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Huntington Beach, CA 92648
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Fax: (714) 969-0820

GS FORM: GEOTECH2 01/04

BOREHOLE LOG

BORING B-1 **SHEET** 2 OF 3
START DRILL DATE Jul 20, 12 **ELEVATION DATA:**
FINISH DRILL DATE Jul 20, 12 **GROUND SURF. (Ft)** 313
LOCATION Los Angeles, CA **TOP OF CASING (Ft)**
PROJECT LA Water Wheel **DATUM** MSL (NAVD88)
NUMBER LA0257

DESCRIPTION
1) Soil Name (USCS) 6) Plasticity
2) Color 7) Density/Consistency
3) Moisture 8) Other (Mineral Content, Discoloration, Odor, etc.)
4) Grain Size
5) Percentage

COMMENTS
1) Rig Behavior
2) Air Monitoring
3) Pocket Pen
4) Tor Vane

DEPTH (ft-bgs)	ELEVATION (ft)	DESCRIPTION	GRAPHIC LOG	SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PID READING (ppm)	TIME (00:00)	COMMENTS	LABORATORY RESULTS: DRY DENSITY (pcf)	MAX. DRY DENSITY (pcf)	PERCENT FINES (%)	PERCENT GRAVEL (%)	MOIST. CONTENT (%)	OPT. MOIST. CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX
	282			B-1-7		12 13 43	56	Full	0.0											
	281																			
	280																			
	279																			
35	278	@35' dark brown, (5,62,33)		B-1-8A		28 27	56	Full	0.0					32.6		4.0				
	277	SM - Well-graded silty sand, orange to brown, moist, fine to coarse sand, (0,80,20), non-plastic		B-1-8B		29														
	276																			
	275	SM - Silty sand with gravel, gray, saturated, fine to coarse sand, (27,63,10), non-plastic																		
	274																			
40	273			B-1-9		22 32 27	59	Full	0.0					9.7		7.8		NP	NP	NP
	272																			
	271																			
	270																			
	269																			
45	268			B-1-10		25 50-4"	R		0.0											
	267	CL - Silty sandy clay, gray, wet, fine sand, (0,45,55), low plasticity																		
	266																			
	265	SM - Silty sand, gray, saturated, well graded, (1,93,6), non-plastic																		
	264																			
50	263			B-1-11		9 33 50	83	Full	0.0											
	262																			
	261																			
	260																			
	259																			
55	258			B-1-12		6 8 13	21	Full	0.0					6.4		16.2		NP	NP	NP
	257																			
	256																			
	255																			
	254																			
60	253																			

CONTRACTOR ABC Liovin **NORTHING**
EQUIPMENT CME 75 **EASTING**
DRILL MTHD Hollow-stem auger **COORDINATE SYSTEM:**
DIAMETER 7" O.D. Local (ft)
LOGGER AFW **REVIEWER** CSC

NOTES: 140 lb. autohammer; MiniRAE 3000 PID with 11.7 eV lamp; saturated soil at 40 ft; water level sounded at 45 ft; "R" denotes sampler refusal

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

Geosyntec consultants
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Suite 150
Huntington Beach, CA 92648
Tel: (714) 969-0800
Fax: (714) 969-0820

GS FORM: GEOTECH2 01/04

BOREHOLE LOG

BORING B-1 **SHEET** 3 OF 3
START DRILL DATE Jul 20, 12 **ELEVATION DATA:**
FINISH DRILL DATE Jul 20, 12 **GROUND SURF. (Ft)** 313
LOCATION Los Angeles, CA **TOP OF CASING (Ft)**
PROJECT LA Water Wheel **DATUM** MSL (NAVD88)
NUMBER LA0257

DESCRIPTION: 1) Soil Name (USCS) 2) Color 3) Moisture 4) Grain Size 5) Percentage 6) Plasticity 7) Density/Consistency 8) Other (Mineral Content, Discoloration, Odor, etc.)

COMMENTS: 1) Rig Behavior 2) Air Monitoring 3) Pocket Pen 4) Tor Vane

DEPTH (ft-bgs)	ELEVATION (ft)	DESCRIPTION	GRAPHIC LOG	SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PID READING (ppm)	TIME (00:00)	DRY DENSITY (pcf)	MAX. DRY DENSITY (pcf)	PERCENT FINES (%)	PERCENT GRAVEL (%)	MOIST. CONTENT (%)	OPT. MOIST. CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX
	252	SM - Silty sand, gray, saturated, well graded, (1,87,12), non-plastic		B-1-13		4 14 11	25	Full	0.0				11.8		16.8				
	251																		
	250																		
	249																		
65	248			B-1-14		8 21 41	62		0.0										
	247	CL - Silty sandy clay, dark gray, wet, (0,15,85), low to high plasticity, firm to hard																	
	246	End boring at 66.5 ft																	
	245																		
	244																		
70	243																		
	242																		
	241																		
	240																		
	239																		
75	238																		
	237																		
	236																		
	235																		
	234																		
80	233																		
	232																		
	231																		
	230																		
	229																		
85	228																		
	227																		
	226																		
	225																		
	224																		
90	223																		

CONTRACTOR ABC Liovin
EQUIPMENT CME 75
DRILL MTHD Hollow-stem auger
DIAMETER 7" O.D.
LOGGER AFW
REVIEWER CSC
NORTHING
EASTING
COORDINATE SYSTEM: Local (ft)

NOTES: 140 lb. autohammer; MiniRAE 3000 PID with 11.7 eV lamp; saturated soil at 40 ft; water level sounded at 45 ft; "R" denotes sampler refusal

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

Geosyntec consultants
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Fax: (714) 969-0820

GS FORM: GEOTECH2 01/04

BOREHOLE LOG

BORING B-2 **SHEET** 1 OF 1
START DRILL DATE Jul 6, 12
FINISH DRILL DATE Jul 6, 12
LOCATION Los Angeles, CA
PROJECT LA Water Wheel
NUMBER LA0257
ELEVATION DATA:
GROUND SURF. (Ft) 313
TOP OF CASING (Ft)
DATUM MSL (NAVD88)

DEPTH (ft-bgs)	ELEVATION (ft)	DESCRIPTION (1) Soil Name (USCS) (2) Color (3) Moisture (4) Grain Size (5) Percentage (6) Plasticity (7) Density/Consistency (8) Other (Mineral Content, Discoloration, Odor, etc.)	GRAPHIC LOG	SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PID READING (ppm)	TIME (00:00)	COMMENTS (1) Rig Behavior (2) Air Monitoring (3) Pocket Pen (4) Tor Vane	DRY DENSITY (pcf)	MAX. DRY DENSITY (pcf)	PERCENT FINES (%)	PERCENT GRAVEL (%)	MOIST. CONTENT (%)	OPT. MOIST. CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX
0	312	Fill - Silty sand, tan to brown, dry to moist, medium gravel, fine sand, (24,59,17), non-plastic		B-2-1									128.0	17.3		2.8	8.3			
	311																			
	310																			
	309																			
5	308			B-2-2		15 9 8	17													
	307	GW-GM - Well-graded gravel with silt and sand, gray, medium gravel, fine to coarse sand, (70,20,10), non-plastic									Color change to gray at 5-1/2 ft									
	306																			
	305	End boring at 8 ft																		
	304																			
10	303																			
	302																			
	301																			
	300																			
	299																			
15	298																			
	297																			
	296																			
	295																			
	294																			
20	293																			
	292																			
	291																			
	290																			
	289																			
25	288																			
	287																			
	286																			
	285																			
	284																			
30	283																			

CONTRACTOR Gregg Drilling
EQUIPMENT
DRILL MTHD Mud Rotary
DIAMETER 3-3/4 in. O.D.
LOGGER AFW
REVIEWER CSC
NORTHING
EASTING
COORDINATE SYSTEM: Local (ft)

NOTES: Loss of drilling mud circulation; boring terminated at 8 ft; automatic 140 lb hammer

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

03-GEOTECH2 LA0257.GPJ GEOSNTEC.GDT 1/7/13

Geosyntec consultants
2100 Main St
Suite 150
Huntington Beach, CA 92648
Tel: (714) 969-0800
Fax: (714) 969-0820

GS FORM: GEOTECH2 01/04

BOREHOLE LOG

BORING B-3 **SHEET** 1 OF 2
START DRILL DATE Jul 20, 12 **ELEVATION DATA:**
FINISH DRILL DATE Jul 20, 12 **GROUND SURF. (Ft)** 313
LOCATION Los Angeles, CA **TOP OF CASING (Ft)**
PROJECT LA Water Wheel **DATUM** MSL (NAVD88)
NUMBER LA0257

DEPTH (ft-bgs)	ELEVATION (ft)	DESCRIPTION (1) Soil Name (USCS) (2) Color (3) Moisture (4) Grain Size (5) Percentage (6) Plasticity (7) Density/Consistency (8) Other (Mineral Content, Discoloration, Odor, etc.)	GRAPHIC LOG	SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PID READING (ppm)	TIME (00:00)	COMMENTS (1) Rig Behavior (2) Air Monitoring (3) Pocket Pen (4) Tor Vane	DRY DENSITY (pcf)	MAX. DRY DENSITY (pcf)	PERCENT FINES (%)	PERCENT GRAVEL (%)	MOIST. CONTENT (%)	OPT. MOIST. CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX
	312	FILL - SM - Silty sand with gravel, dark brown, dry to moist, fine to medium sand, fine to coarse gravel, (30,40,30), non-plastic																		
	311										Large rock at 1.5 ft									
	310																			
	309																			
5	308																			
	307	SM - Silty sand with gravel, grayish brown to brown, dry, fine to medium gravel, (15,60,25), non-plastic to low plasticity		B-3-1		14 22 18	40	Full	0.0		Possible fill									
	306																			
	305																			
	304																			
10	303																			
	302	@10' fine sand, (40,40,20), non-plastic, apparent cemented sand (gray) in shoe		B-3-2		15 19 16	35	1/2	0.0											
	301																			
	300																			
	299																			
15	298																			
	297	@15' brown		B-3-3		32 28 27	55	3/4	2.8											
	296	SM - Silty sand, cemented sand, medium gravel, fine to medium sand, (15,55,30), non-plastic																		
	295																			
	294																			
20	293																			
	292	SM - Silty sand with gravel, grayish brown, dry to moist, medium gravel, fine to medium sand, (43,47,10), non-plastic		B-3-4		25 23 40	63	Full	5.7				9.9		2.9				
	291																			
	290																			
	289																			
25	288			B-3-5		24 50-5"	R													
	287																			
	286																			
	285	@27' moist to wet, med to coarse gravel and sand, (31,55,14), non-plastic to low plasticity, brown sandy clay in shoe		B-3-6		50-5"	R	None												
	284			B-3-7		26 41 50	91	Full	0.5				14.4		2.3		NP	NP	NP
30	283																			

CONTRACTOR ABC Liovin **NORTHING**
EQUIPMENT CME 75 **EASTING**
DRILL MTHD Hollow-stem auger **COORDINATE SYSTEM:**
DIAMETER 7" O.D. Local (ft)
LOGGER AFW **REVIEWER** CSC

NOTES: No bulk sample, 140 lb. automatic hammer; MiniRAE 3000 PID with 11.7 eV lamp; groundwater level sounded at 36.3 ft bgs; "R" denotes sampler refusal

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

Geosyntec consultants
2100 Main St
Suite 150
Huntington Beach, CA 92648
Tel: (714) 969-0800
Fax: (714) 969-0820

GS FORM: GEOTECH2 01/04

BOREHOLE LOG

BORING B-3 **SHEET** 2 OF 2
START DRILL DATE Jul 20, 12
FINISH DRILL DATE Jul 20, 12
LOCATION Los Angeles, CA
PROJECT LA Water Wheel
NUMBER LA0257
ELEVATION DATA:
GROUND SURF. (Ft) 313
TOP OF CASING (Ft)
DATUM MSL (NAVD88)

DEPTH (ft-bgs)	ELEVATION (ft)	DESCRIPTION (1) Soil Name (USCS) 2) Color 3) Moisture 4) Grain Size 5) Percentage 6) Plasticity 7) Density/Consistency 8) Other (Mineral Content, Discoloration, Odor, etc.)	GRAPHIC LOG	SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PID READING (ppm)	TIME (00:00)	COMMENTS (1) Rig Behavior 2) Air Monitoring 3) Pocket Pen 4) Tor Vane	DRY DENSITY (pcf)	MAX. DRY DENSITY (pcf)	PERCENT FINES (%)	PERCENT GRAVEL (%)	MOIST. CONTENT (%)	OPT. MOIST. CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX
		@30' (34,58,8)		B-3-8		32 30 25	55	Full	0.7					7.7		2.9		NP	NP	NP
	282																			
	281																			
	280	@32' dry to moist, fine to medium sand and gravel, (25,50,25)																		
	279																			
35	278																			
	277	@35' moist to wet, saturated, fine to coarse sand, fine to medium gravel (20,40,40)		B-3-9		29 40 50-5"	R		0.0		▽									
	276																			
	275																			
	274										Saturated at 39 ft									
40	273																			
	272	CL - Silty clay, brown, fine sand, (0,20,80), low plasticity		B-3-10		26 50-6"	R													
	271	SM - Silty sand, dark gray (in shoe), fine to medium sand, fine gravel, (5,70,25)																		
	270	End boring at 41 ft																		
	269																			
45	268																			
	267																			
	266																			
	265																			
	264																			
50	263																			
	262																			
	261																			
	260																			
	259																			
55	258																			
	257																			
	256																			
	255																			
	254																			
60	253																			

CONTRACTOR ABC Liovin
EQUIPMENT CME 75
DRILL MTHD Hollow-stem auger
DIAMETER 7" O.D.
LOGGER AFW
REVIEWER CSC
NORTHING
EASTING
COORDINATE SYSTEM: Local (ft)

NOTES: No bulk sample, 140 lb. automatic hammer; MiniRAE 3000 PID with 11.7 eV lamp; groundwater level sounded at 36.3 ft bgs; "R" denotes sampler refusal

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

Geosyntec consultants
2100 Main St
Suite 150
Huntington Beach, CA 92648
Tel: (714) 969-0800
Fax: (714) 969-0820

GS FORM: GEOTECH2 01/04

BOREHOLE LOG

BORING B-5 **SHEET** 1 OF 2
START DRILL DATE Oct 4, 12 **ELEVATION DATA:**
FINISH DRILL DATE Oct 4, 12 **GROUND SURF. (Ft)** 280
LOCATION Los Angeles, CA **TOP OF CASING (Ft)**
PROJECT LA Water Wheel **DATUM** MSL (NAVD88)
NUMBER LA0257

DESCRIPTION
1) Soil Name (USCS) 6) Plasticity
2) Color 7) Density/Consistency
3) Moisture 8) Other (Mineral Content, Discoloration, Odor, etc.)
4) Grain Size
5) Percentage

COMMENTS
1) Rig Behavior
2) Air Monitoring
3) Pocket Pen
4) Tor Vane

DEPTH (ft-bgs)	ELEVATION (ft)	DESCRIPTION	GRAPHIC LOG	SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PID READING (ppm)	TIME (00:00)	COMMENTS	DRY DENSITY (pcf)	MAX. DRY DENSITY (pcf)	PERCENT FINES (%)	PERCENT GRAVEL (%)	MOIST. CONTENT (%)	OPT. MOIST. CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX
	279	Concrete pavement, approximately 16 in.-thick, rebar approximately 3/4 in.-thick oriented in two directions																		
	278	FILL - Sand and gravel, brown, gravel particle diameter up to approximately 2 in., medium sand, non-plastic, angular particles		B-5-1																
	277																			
	276																			
5	275																			
	274	GP - Poorly graded gravel with sand, gray, (71,24,5)		B-5-2		2 5 7	12													
	273			B-5-3										4.7		9.4		NP	NP	NP
	272										Sample B-5-3 collected from auger cuttings									
	271																			
10	270																			
	269	SM - Silty sand with gravel, gray, fine to medium gravel, medium sand, (15,75,10), non-plastic		B-5-4		19 44 51-4"	R													
	268																			
	267																			
	266																			
15	265																			
	264	SM - Silty sand with gravel, gray, fine to medium gravel, medium sand, (15,70,15), non-plastic		B-5-5		12 18 15	33													
	263			B-5-6																
	262	SM - Silty sand, dark brown, fine to medium gravel, fine sand, (0,67,33), non-plastic									Sample B-5-6 collected from auger cuttings									
	261																			
20	260																			
	259			B-5-7		14 48 50-4"	R							32.5		19.5		NP	NP	NP
	258																			
	257																			
	256																			
25	255																			
	254			B-5-8		50-3"	R													
	253																			
	252	SM - Silty sand, olive, fine gravel, fine sand, (5,70,25), non-plastic																		
	251																			
30	250																			

CONTRACTOR ABC Liovin **NORTHING**
EQUIPMENT CME **EASTING**
DRILL MTHD Hollow-stem auger **COORDINATE SYSTEM:**
DIAMETER 8" O.D. Local (ft)
LOGGER YBZ **REVIEWER** AFW

NOTES: 140 lb. autohammer; groundwater encountered at approximately 1 ft bgs; "R" denotes sampler refusal

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

03-GEOTECH2 LA0257.GPJ GEOSNTEC.GDT 1/7/13

Geosyntec consultants
2100 Main St
Suite 150
Huntington Beach, CA 92648
Tel: (714) 969-0800
Fax: (714) 969-0820

GS FORM: GEOTECH2 01/04

BOREHOLE LOG

BORING B-5 **SHEET** 2 OF 2
START DRILL DATE Oct 4, 12
FINISH DRILL DATE Oct 4, 12
LOCATION Los Angeles, CA
PROJECT LA Water Wheel
NUMBER LA0257

ELEVATION DATA:
GROUND SURF. (Ft) 280
TOP OF CASING (Ft)
DATUM MSL (NAVD88)

DEPTH (ft-bgs)	ELEVATION (ft)	DESCRIPTION	GRAPHIC LOG	SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PID READING (ppm)	TIME (00:00)	COMMENTS	DRY DENSITY (pcf)	MAX. DRY DENSITY (pcf)	PERCENT FINES (%)	PERCENT GRAVEL (%)	MOIST. CONTENT (%)	OPT. MOIST. CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX
		End boring at 30.3 ft		B-5-9		50-4"	R				Sampler refusal at approximately 30.3 ft									
	249																			
	248																			
	247																			
	246																			
35	245																			
	244																			
	243																			
	242																			
	241																			
40	240																			
	239																			
	238																			
	237																			
	236																			
45	235																			
	234																			
	233																			
	232																			
	231																			
50	230																			
	229																			
	228																			
	227																			
	226																			
55	225																			
	224																			
	223																			
	222																			
	221																			
60	220																			

CONTRACTOR ABC Liovin
EQUIPMENT CME
DRILL MTHD Hollow-stem auger
DIAMETER 8" O.D.
LOGGER YBZ
REVIEWER AFW
NORTHING
EASTING
COORDINATE SYSTEM: Local (ft)

NOTES: 140 lb. autohammer; groundwater encountered at approximately 1 ft bgs; "R" denotes sampler refusal

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

03-GEOTECH2 LA0257.GPJ GEOSNTEC.GDT 1/7/13

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GS FORM: GEOTECH2 01/04

BOREHOLE LOG

BORING B-6 **SHEET** 1 OF 2
START DRILL DATE Oct 4, 12 **ELEVATION DATA:**
FINISH DRILL DATE Oct 4, 12 **GROUND SURF. (Ft)** 277
LOCATION Los Angeles, CA **TOP OF CASING (Ft)**
PROJECT LA Water Wheel **DATUM** MSL (NAVD88)
NUMBER LA0257

DESCRIPTION
1) Soil Name (USCS) 6) Plasticity
2) Color 7) Density/Consistency
3) Moisture 8) Other (Mineral Content, Discoloration, Odor, etc.)
4) Grain Size
5) Percentage

COMMENTS
1) Rig Behavior
2) Air Monitoring
3) Pocket Pen
4) Tor Vane

DEPTH (ft-bgs)	ELEVATION (ft)	DESCRIPTION	GRAPHIC LOG	SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PID READING (ppm)	TIME (00:00)	COMMENTS	DRY DENSITY (pcf)	MAX. DRY DENSITY (pcf)	PERCENT FINES (%)	PERCENT GRAVEL (%)	MOIST. CONTENT (%)	OPT. MOIST. CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX
	276	Concrete pavement, approximately 16 in.-thick																		
	275	FILL - sand and gravel, angular, particle diameter up to approximately 2 in.																		
5	272	SM - Silty sand with gravel, grayish brown, saturated, fine to medium gravel, medium to coarse sand, (30,50,20), non-plastic		B-6-1		8 9 10	19													
10	267	SM - Silty sand with gravel, grayish brown, fine to medium gravel, medium to coarse sand, (20,60,20), non-plastic		B-6-2		10 11 12	23													
15	262	SP-SM - Poorly graded sand with silt and gravel, grayish brown, fine to medium gravel, medium to coarse sand, (37,57,6), non-plastic		B-6-3		14 29 38	67							6.0		8.9		NP	NP	NP
20	257	SM - Silty sand, grayish brown, fine to medium gravel, medium to coarse sand, (10,70,20), non-plastic		B-6-4		13 13 18	31													
25	252	SM - Silty sand, grayish brown, fine gravel, medium to coarse sand, (6,77,17), non-plastic		B-6-5		16 32 22	54							17.5		11.3		NP	NP	NP
	249	SM - Silty sand, grayish brown, medium sand, (0,80,20), non-plastic																		
30	247																			

CONTRACTOR ABC Liovin **NORTHING**
EQUIPMENT CME **EASTING**
DRILL MTHD Hollow-stem auger **COORDINATE SYSTEM:**
DIAMETER 8" O.D. Local (ft)
LOGGER YBZ **REVIEWER** AFW

NOTES: 140 lb. autohammer; groundwater encountered at approximately 1 ft bgs; "R" denotes sampler refusal

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

03-GEOTECH2 LA0257.GPJ GEOSNTEC.GDT 1/7/13

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Fax: (714) 969-0820

GS FORM: GEOTECH2 01/04

BOREHOLE LOG

BORING B-6 **SHEET** 2 OF 2
START DRILL DATE Oct 4, 12 **ELEVATION DATA:**
FINISH DRILL DATE Oct 4, 12 **GROUND SURF. (Ft)** 277
LOCATION Los Angeles, CA **TOP OF CASING (Ft)**
PROJECT LA Water Wheel **DATUM** MSL (NAVD88)
NUMBER LA0257

DESCRIPTION
1) Soil Name (USCS) 6) Plasticity
2) Color 7) Density/Consistency
3) Moisture 8) Other (Mineral Content, Discoloration, Odor, etc.)
4) Grain Size
5) Percentage

COMMENTS
1) Rig Behavior
2) Air Monitoring
3) Pocket Pen
4) Tor Vane

DEPTH (ft-bgs)	ELEVATION (ft)	DESCRIPTION	GRAPHIC LOG	SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PID READING (ppm)	TIME (00:00)	COMMENTS	DRY DENSITY (pcf)	MAX. DRY DENSITY (pcf)	PERCENT FINES (%)	PERCENT GRAVEL (%)	MOIST. CONTENT (%)	OPT. MOIST. CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX
	246			B-6-6		18 21 41	62													
	245																			
	244	SM - Silty sand, brown, fine sand, (0,60,40), non-plastic to low plasticity																		
	243																			
35	242			B-6-7		7 17 28	45							39.9		23		NP	NP	NP
	241																			
	240																			
	239	SM - Silty sand, dark olive, fine to medium sand, (5,80,15), non-plastic																		
	238																			
40	237			B-6-8		27 50-5"	R													
	236																			
	235																			
	234																			
	233																			
45	232																			
	231	SW-SM - Well graded sand with silt, dark olive, fine to medium gravel, fine to medium sand, (9,80,11), non-plastic		B-6-9		42 50-4"	R							10.8		11.7		NP	NP	NP
	230																			
	229																			
	228																			
50	227																			
	226	SM - Silty sand, dark olive, fine to medium sand, (10,80,10), non-plastic		B-6-10		10 45 33	78													
	225	End boring at 51.5 ft																		
	224																			
	223																			
55	222																			
	221																			
	220																			
	219																			
	218																			
60	217																			

CONTRACTOR ABC Liovin
EQUIPMENT CME
DRILL MTHD Hollow-stem auger
DIAMETER 8" O.D.
LOGGER YBZ
REVIEWER AFW
NORTHING
EASTING
COORDINATE SYSTEM: Local (ft)

NOTES: 140 lb. autohammer; groundwater encountered at approximately 1 ft bgs; "R" denotes sampler refusal

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

03-GEOTECH2 LA0257.GPJ GEOSNTEC.GDT 1/7/13

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Fax: (714) 969-0820

GS FORM: GEOTECH2 01/04

BOREHOLE LOG

BORING GP-1 | **SHEET** 1 OF 2
START DRILL DATE Jul 5, 12 | **ELEVATION DATA:**
FINISH DRILL DATE Jul 5, 12 | **GROUND SURF. (Ft)** 314
LOCATION Los Angeles, CA | **TOP OF CASING (Ft)**
PROJECT LA Water Wheel | **DATUM** MSL (NAVD88)
NUMBER LA0257

DESCRIPTION
1) Soil Name (USCS) 2) Color 3) Moisture 4) Grain Size 5) Percentage 6) Plasticity 7) Density/Consistency 8) Other (Mineral Content, Discoloration, Odor, etc.)

COMMENTS
1) Rig Behavior 2) Air Monitoring 3) Pocket Pen 4) Tor Vane

DEPTH (ft-bgs)	ELEVATION (ft)	DESCRIPTION	GRAPHIC LOG	SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PID READING (ppm)	TIME (00:00)	COMMENTS	DRY DENSITY (pcf)	MAX. DRY DENSITY (pcf)	PERCENT FINES (%)	PERCENT GRAVEL (%)	MOIST. CONTENT (%)	OPT. MOIST. CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX
0	313	FILL - Silty sand with gravel, dark brown, dry, fine to coarse gravel, fine to coarse sand, (20,50,30), non-plastic		GP-1-1																
	312																			
	311																			
	310																			
				GP-1-2					0.0		Lighter brown color after 5 ft									
5	309	SM - Silty sand with gravel, brown, dry, fine to medium gravel, fine to coarse sand, (30,40,30), non-plastic		GP-1-3					0.0		Gravel piece apparently broken to sampler inner diameter									
	308			GP-1-4																
	307																			
	306																			
	305																			
10	304																			
	303																			
	302																			
		Same as above, dry to moist, fine to coarse gravel		GP-1-5					0.0		Gravel piece apparently broken to sampler inner diameter									
	301			GP-1-6																
	300																			
15	299																			
	298																			
	297																			
	296	SM - Silty sand, brown, dry to moist, fine to medium gravel, fine to medium sand, (23,69,8), non-plastic																		
				GP-1-7							Transition to sandier material at 18 ft									
	295			GP-1-8					0.0					7.5		3.7				
20	294			GP-1-9																
	293			GP-1-10																
	292			GP-1-11					0.0											
	291																			
	290																			
25	289																			
	288	Same as above, moist, (10,70, 20)		GP-1-12																
	287			GP-1-13																
	286																			
				GP-1-14					0.0											
	285																			
30	284																			

CONTRACTOR Interphase Environmental
EQUIPMENT Geoprobe 6600
DRILL MTHD Geoprobe
DIAMETER 2-1/4 in. O.D.
LOGGER AFW
REVIEWER CSC
NORTHING
EASTING
COORDINATE SYSTEM: Local (ft)

NOTES: MiniRAE 3000 PID with 11.7 eV lamp; groundwater encountered at approximately 39 ft bgs

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

03-GEOTECH2 LA0257.GPJ GEOSNTEC.GDT 1/7/13

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GS FORM: GEOTECH2 01/04

BOREHOLE LOG

BORING GP-1 **SHEET** 2 OF 2
START DRILL DATE Jul 5, 12
FINISH DRILL DATE Jul 5, 12
LOCATION Los Angeles, CA
PROJECT LA Water Wheel
NUMBER LA0257
ELEVATION DATA:
GROUND SURF. (Ft) 314
TOP OF CASING (Ft)
DATUM MSL (NAVD88)

DEPTH (ft-bgs)	ELEVATION (ft)	DESCRIPTION (1) Soil Name (USCS) (2) Color (3) Moisture (4) Grain Size (5) Percentage (6) Plasticity (7) Density/Consistency (8) Other (Mineral Content, Discoloration, Odor, etc.)	GRAPHIC LOG	SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PID READING (ppm)	TIME (00:00)	COMMENTS (1) Rig Behavior (2) Air Monitoring (3) Pocket Pen (4) Tor Vane	DRY DENSITY (pcf)	MAX. DRY DENSITY (pcf)	PERCENT FINES (%)	PERCENT GRAVEL (%)	MOIST. CONTENT (%)	OPT. MOIST. CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX
	283	SM - Silty sand, brown to tan, moist, fine sand, (0,84,16), non-plastic		GP-1-15					0.0											
	282			GP-1-16										15.7		5.5				
	281																			
	280																			
35	279																			
	278	SM - Silty sand with gravel, dark gray, moist, fine to medium gravel, fine to medium sand, (17,72,11), non-plastic		GP-1-17					0.0											
	277			GP-1-18																
	276																			
	275			GP-1-19										11.3		10.2				
40	274																			
	273																			
	272																			
	271																			
	270																			
		End boring at 44 ft																		
45	269																			
	268																			
	267																			
	266																			
	265																			
50	264																			
	263																			
	262																			
	261																			
	260																			
55	259																			
	258																			
	257																			
	256																			
	255																			
60	254																			

CONTRACTOR Interphase Environmental
EQUIPMENT Geoprobe 6600
DRILL MTHD Geoprobe
DIAMETER 2-1/4 in. O.D.
LOGGER AFW
REVIEWER CSC
NORTHING
EASTING
COORDINATE SYSTEM: Local (ft)

NOTES: MiniRAE 3000 PID with 11.7 eV lamp; groundwater encountered at approximately 39 ft bgs

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

03-GEOTECH2 LA0257.GPJ GEOSNTEC.GDT 1/7/13

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2100 Main St
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Huntington Beach, CA 92648
Tel: (714) 969-0800
Fax: (714) 969-0820

GS FORM: GEOTECH2 01/04

BOREHOLE LOG

BORING GP-3 **SHEET** 1 OF 1
START DRILL DATE Jul 5, 12 **ELEVATION DATA:**
FINISH DRILL DATE Jul 5, 12 **GROUND SURF. (Ft)** 313
LOCATION Los Angeles, CA **TOP OF CASING (Ft)**
PROJECT LA Water Wheel **DATUM** MSL (NAVD88)
NUMBER LA0257

DEPTH (ft-bgs)	ELEVATION (ft)	DESCRIPTION (1) Soil Name (USCS) (2) Color (3) Moisture (4) Grain Size (5) Percentage (6) Plasticity (7) Density/Consistency (8) Other (Mineral Content, Discoloration, Odor, etc.)	GRAPHIC LOG	SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PID READING (ppm)	TIME (00:00)	COMMENTS (1) Rig Behavior (2) Air Monitoring (3) Pocket Pen (4) Tor Vane	DRY DENSITY (pcf)	MAX. DRY DENSITY (pcf)	PERCENT FINES (%)	PERCENT GRAVEL (%)	MOIST. CONTENT (%)	OPT. MOIST. CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX
	312	FILL - Silty sand, dark brown, dry, fine gravel, fine to medium sand, (10,60,30), non-plastic		GP-3-1					0.0											
	311																			
	310																			
	309																			
5	308	SM - Silty sand with gravel, brown, dry, fine to medium gravel, fine to medium sand, (20,65,15), non-plastic		GP-3-2					0.0		Lighter brown color and coarser particles around 4 ft									
	307			GP-3-3							Higher fines content (20,50,30) after 6 ft									
	306																			
	305																			
	304																			
10	303										No recovery from 8 ft to 12 ft									
	302																			
	301	Same as above, (17,72,11)		GP-3-4										11.2		4.6				
	300																			
	299			GP-3-5					0.0		Transition to sandier material (10,75,15) around 14 ft									
15	298																			
	297	End boring at 16 ft									Refusal at 16 ft									
	296																			
	295																			
	294																			
20	293																			
	292																			
	291																			
	290																			
	289																			
25	288																			
	287																			
	286																			
	285																			
	284																			
30	283																			

CONTRACTOR Interphase Environmental **NORTHING**
EQUIPMENT Geoprobe 6600 **EASTING**
DRILL MTHD Geoprobe **COORDINATE SYSTEM:**
DIAMETER 2-1/4 in. O.D. Local (ft)
LOGGER AFW **REVIEWER** CSC

NOTES: MiniRAE 3000 PID with 11.7 eV lamp; adjacent hydropunch to 46 ft bgs encountered groundwater at approximately 39 ft bgs

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

03-GEOTECH2 LA0257.GPJ GEOSNTEC.GDT 1/7/13

Geosyntec consultants
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Tel: (714) 969-0800
Fax: (714) 969-0820

GS FORM: GEOTECH2 01/04

BOREHOLE LOG

BORING GP-4 **SHEET** 1 OF 1
START DRILL DATE Jul 5, 12 **ELEVATION DATA:**
FINISH DRILL DATE Jul 5, 12 **GROUND SURF. (Ft)** 313
LOCATION Los Angeles, CA **TOP OF CASING (Ft)**
PROJECT LA Water Wheel **DATUM** MSL (NAVD88)
NUMBER LA0257

DESCRIPTION
1) Soil Name (USCS) 6) Plasticity
2) Color 7) Density/Consistency
3) Moisture 8) Other (Mineral Content, Discoloration, Odor, etc.)
4) Grain Size
5) Percentage

COMMENTS
1) Rig Behavior
2) Air Monitoring
3) Pocket Pen
4) Tor Vane

DEPTH (ft-bgs)	ELEVATION (ft)	DESCRIPTION	GRAPHIC LOG	SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PID READING (ppm)	TIME (00:00)	COMMENTS	DRY DENSITY (pcf)	MAX. DRY DENSITY (pcf)	PERCENT FINES (%)	PERCENT GRAVEL (%)	MOIST. CONTENT (%)	OPT. MOIST. CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX
0	312	FILL - Silty sand with gravel, dark brown, dry, (25,30,45), fine to medium gravel, fine sand, non-plastic		GP-4-1					0.0											
	311																			
	310																			
	309																			
5	308	SM - Silty sand with gravel, brown, dry, fine to medium gravel, fine to medium sand, (15,55,30), non-plastic		GP-4-2							Lighter brown color, coarser sand around 5 ft									
	307			GP-4-3					0.0											
	306																			
	305	SM - Silty sand, brown, moist, fine to medium sand, (5,88,7), non-plastic		GP-4-4					0.0											
	304																			
10	303			GP-4-5										7.2		4.9				
	302																			
	301																			
	300																			
	299	Silty sand with gravel, brown, moist, fine to medium gravel, fine to coarse sand, (30,62,8), non-plastic		GP-4-6					0.0											
15	298			GP-4-7										8.1		3.5				
	297																			
	296																			
	295			GP-4-8					0.0											
20	293										No recovery from 20 ft to 24 ft									
	292																			
	291																			
	290																			
	289	End boring at 24 ft									Refusal at 24 ft									
25	288																			
	287																			
	286																			
	285																			
	284																			
30	283																			

CONTRACTOR Interphase Environmental **NORTHING**
EQUIPMENT Geoprobe 6600 **EASTING**
DRILL MTHD Geoprobe **COORDINATE SYSTEM:**
DIAMETER 2-1/4 in. O.D. Local (ft)
LOGGER AFW **REVIEWER** CSC

NOTES: MiniRAE 3000 PID with 11.7 eV lamp; no groundwater encountered

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

03-GEOTECH2 LA0257.GPJ GEOSNTEC.GDT 1/7/13

Geosyntec consultants

APPENDIX C

GEOTECHNICAL LABORATORY TESTING RESULTS

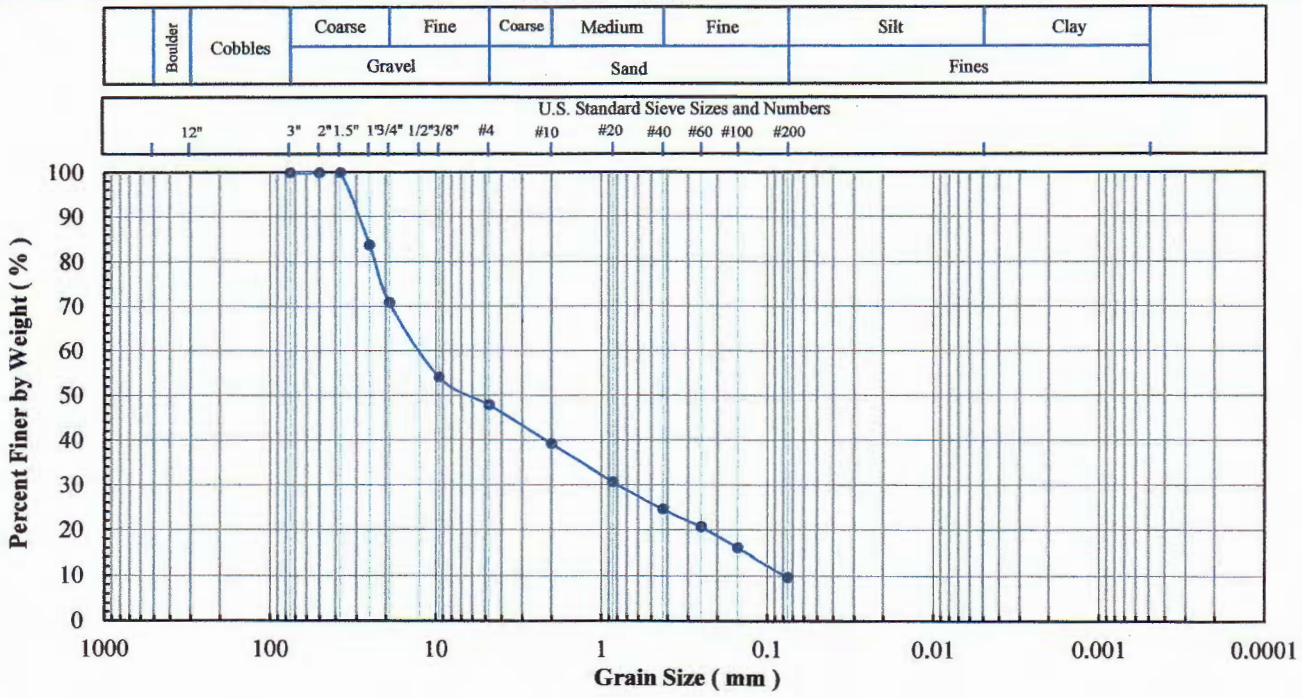
Excel Geotechnical Testing, Inc.
"Excellence in Testing"
953 Forrest Street, Roswell, Georgia 30075
Tel: (770) 910 7537 Fax: (770) 910 7538

Project Name:	LA Water Wheel Project
Project No:	559
Client Sample ID:	B-1-5
Lab Sample No:	12H093

ASTM C 136, D 422, D 854, D 1140, D2216, D 2487, D4318

SOIL INDEX PROPERTIES

Grain Size, Spec. Gravity, Moist. Content, Eng. Classification, Atterberg Limits



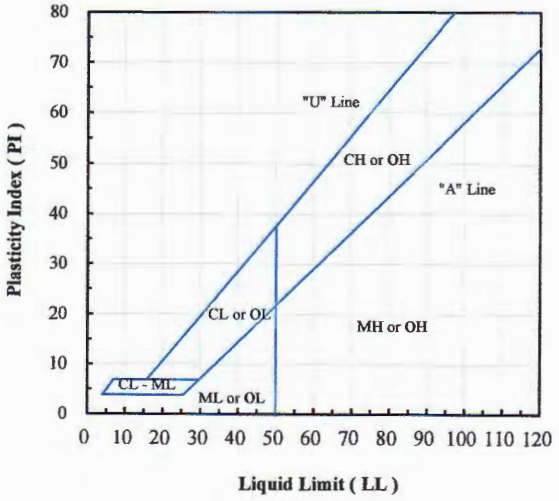
Sieve No.	Size (mm)	% Finer
3"	75	100.0
2"	50	100.0
1.5"	37.5	100.0
1"	25	83.8
3/4"	19	71.0
3/8"	9.5	54.2
#4	4.75	48.0
#10	2.00	39.4
#20	0.850	30.8
#40	0.425	24.7
#60	0.250	20.8
#100	0.150	16.2
#200	0.075	9.8

Specific Gravity (-):	

Hydrometer Particle Diameter (mm)	% Finer

Gravel (%):	52.0
Sand (%):	38.2
Fines (%):	9.8
Silt (%):	
Clay (%):	

Coeff. Unif. (Cu):	
Coeff. Curv. (Cc):	



Client Sample ID.	Lab Sample No:	Moisture Content (%)	Fines Content < No. 200 (%)	Atterberg Limits LL (-)	PL (-)	PI (-)	Engineering Classification
B-1-5	12H093	2.8	9.8	NP	NP	NP	

Note(s):

9/4-12 NSR

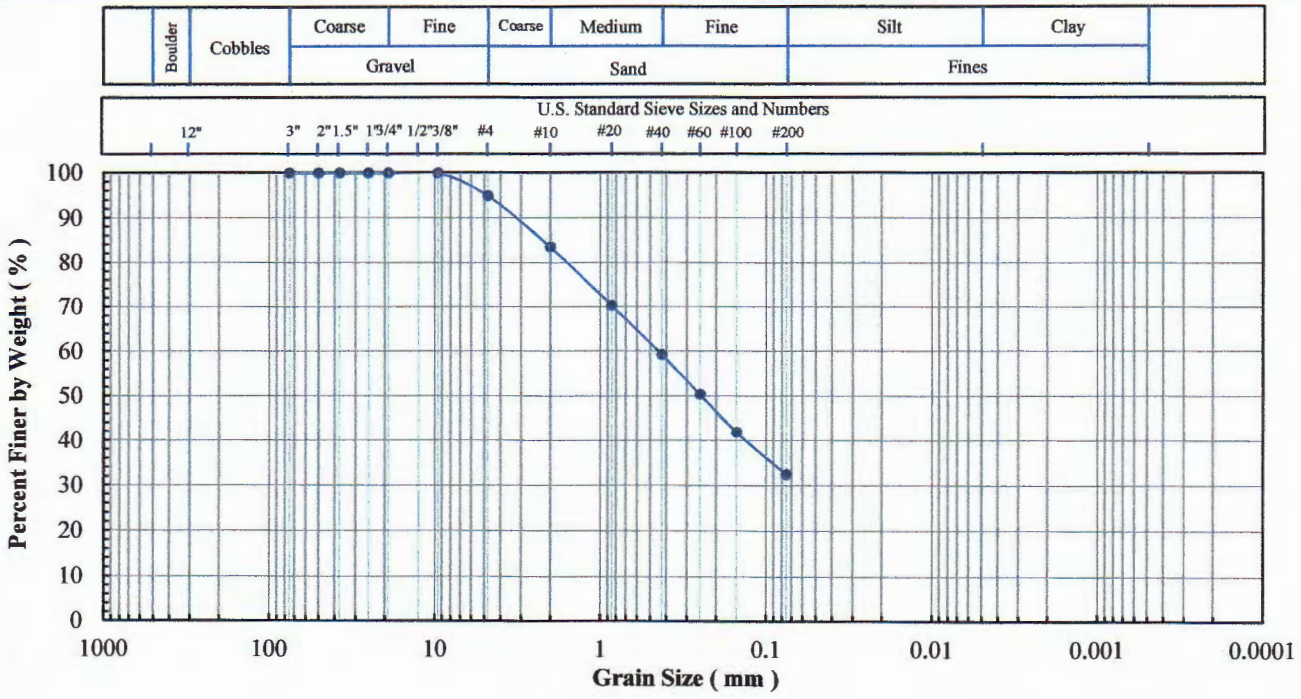
Excel Geotechnical Testing, Inc.
"Excellence in Testing"
953 Forrest Street, Roswell, Georgia 30075
Tel: (770) 910 7537 Fax: (770) 910 7538

Project Name:	LA Water Wheel Project
Project No:	559
Client Sample ID:	B-1-8A
Lab Sample No:	12H094

ASTM C 136, D 422, D 854, D 1140, D2216, D 2487, D4318

SOIL INDEX PROPERTIES

Grain Size, Spec. Gravity, Moist. Content, Eng. Classification, Atterberg Limits



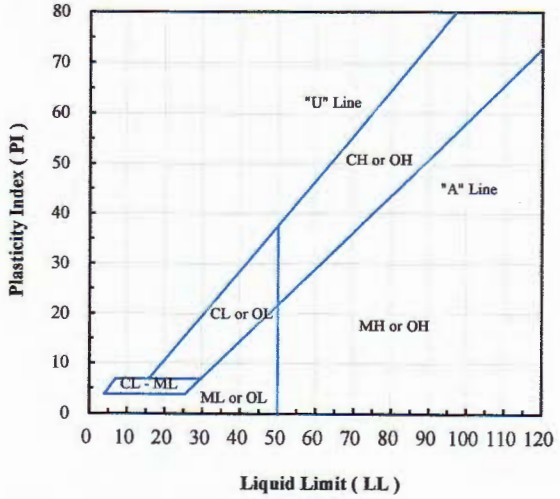
Sieve No.	Size (mm)	% Finer
3"	75	100.0
2"	50	100.0
1.5"	37.5	100.0
1"	25	100.0
3/4"	19	100.0
3/8"	9.5	100.0
#4	4.75	95.0
#10	2.00	83.6
#20	0.850	70.4
#40	0.425	59.4
#60	0.250	50.5
#100	0.150	42.0
#200	0.075	32.6

Specific Gravity (-):	

Hydrometer Particle Diameter (mm)	% Finer

Gravel (%):	5.0
Sand (%):	62.4
Fines (%):	32.6
Silt (%):	
Clay (%):	

Coeff. Unif. (Cu):	
Coeff. Curv. (Cc):	



Client Sample ID.	Lab Sample No:	Moisture Content (%)	Fines Content < No. 200 (%)	Atterberg Limits LL (-)	Atterberg Limits PL (-)	Atterberg Limits PI (-)	Engineering Classification
B-1-8A	12H094	4.0	32.6				

Note(s):

9-4-12 NSR

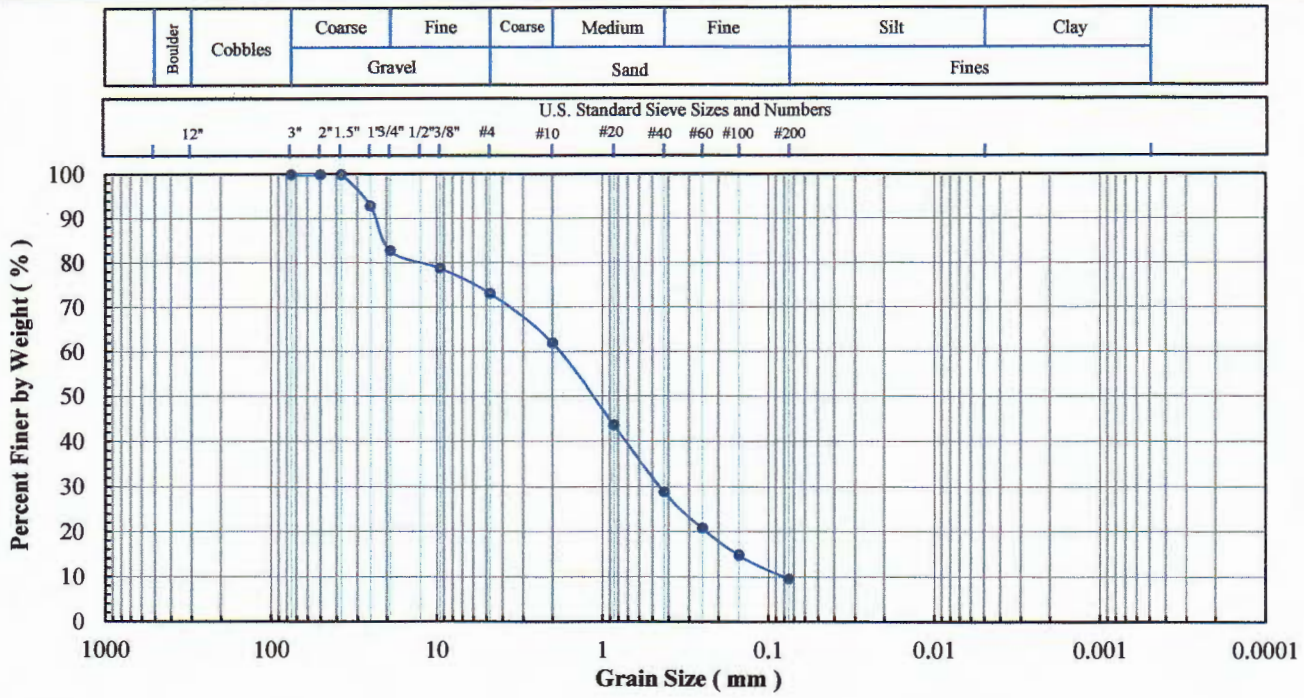
Excel Geotechnical Testing, Inc.
"Excellence in Testing"
953 Forrest Street, Roswell, Georgia 30075
Tel: (770) 910 7537 Fax: (770) 910 7538

Project Name:	LA Water Wheel Project
Project No:	559
Client Sample ID:	B-1-9
Lab Sample No:	12H095

ASTM C 136, D 422, D 854, D 1140, D2216, D 2487, D4318

SOIL INDEX PROPERTIES

Grain Size, Spec. Gravity, Moist. Content, Eng. Classification, Atterberg Limits



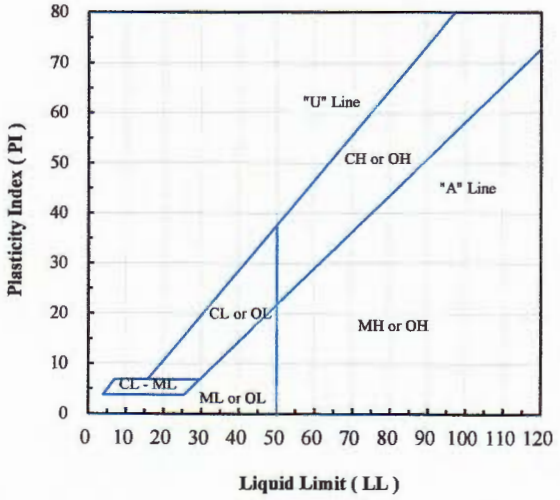
Sieve No.	Size (mm)	% Finer
3"	75	100.0
2"	50	100.0
1.5"	37.5	100.0
1"	25	93.0
3/4"	19	82.8
3/8"	9.5	78.9
#4	4.75	73.2
#10	2.00	62.1
#20	0.850	43.7
#40	0.425	29.0
#60	0.250	20.9
#100	0.150	14.9
#200	0.075	9.7

Specific Gravity (-):	

Hydrometer Particle Diameter (mm)	% Finer

Gravel (%):	26.8
Sand (%):	63.5
Fines (%):	9.7
Silt (%):	
Clay (%):	

Coeff. Unif. (Cu):	
Coeff. Curv. (Cc):	



Client Sample ID.	Lab Sample No:	Moisture Content (%)	Fines Content < No. 200 (%)	Atterberg Limits LL (-)	PL (-)	PI (-)	Engineering Classification
B-1-9	12H095	7.8	9.7	NP	NP	NP	

Note(s):

9-4-12 NSK

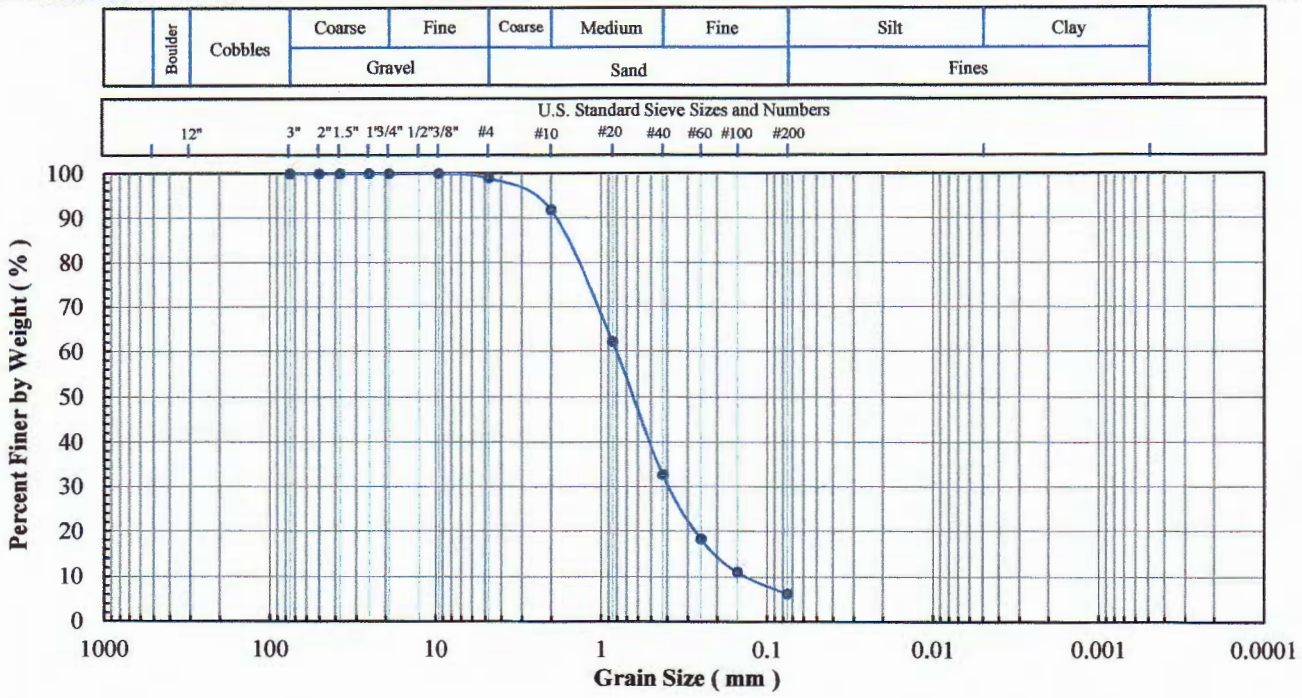
Excel Geotechnical Testing, Inc.
"Excellence in Testing"
953 Forrest Street, Roswell, Georgia 30075
Tel: (770) 910 7537 Fax: (770) 910 7538

Project Name:	LA Water Wheel Project
Project No:	559
Client Sample ID:	B-1-12
Lab Sample No:	12H096

ASTM C 136, D 422, D 854, D 1140, D2216, D 2487, D4318

SOIL INDEX PROPERTIES

Grain Size, Spec. Gravity, Moist. Content, Eng. Classification, Atterberg Limits



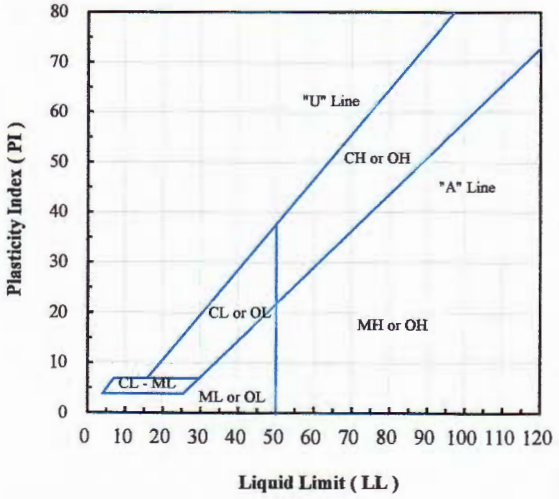
Sieve No.	Size (mm)	% Finer
3"	75	100.0
2"	50	100.0
1.5"	37.5	100.0
1"	25	100.0
3/4"	19	100.0
3/8"	9.5	100.0
#4	4.75	99.0
#10	2.00	91.9
#20	0.850	62.2
#40	0.425	32.8
#60	0.250	18.4
#100	0.150	11.2
#200	0.075	6.4

Specific Gravity (-):	

Hydrometer Particle Diameter (mm)	% Finer

Gravel (%):	1.0
Sand (%):	92.6
Fines (%):	6.4
Silt (%):	
Clay (%):	

Coeff. Unif. (Cu):	
Coeff. Curv. (Cc):	



Client Sample ID.	Lab Sample No:	Moisture Content (%)	Fines Content < No. 200 (%)	Atterberg Limits LL (-)	PL (-)	PI (-)	Engineering Classification
B-1-12	12H096	16.2	6.4	NP	NP	NP	

Note(s):

9-4-12 NSR

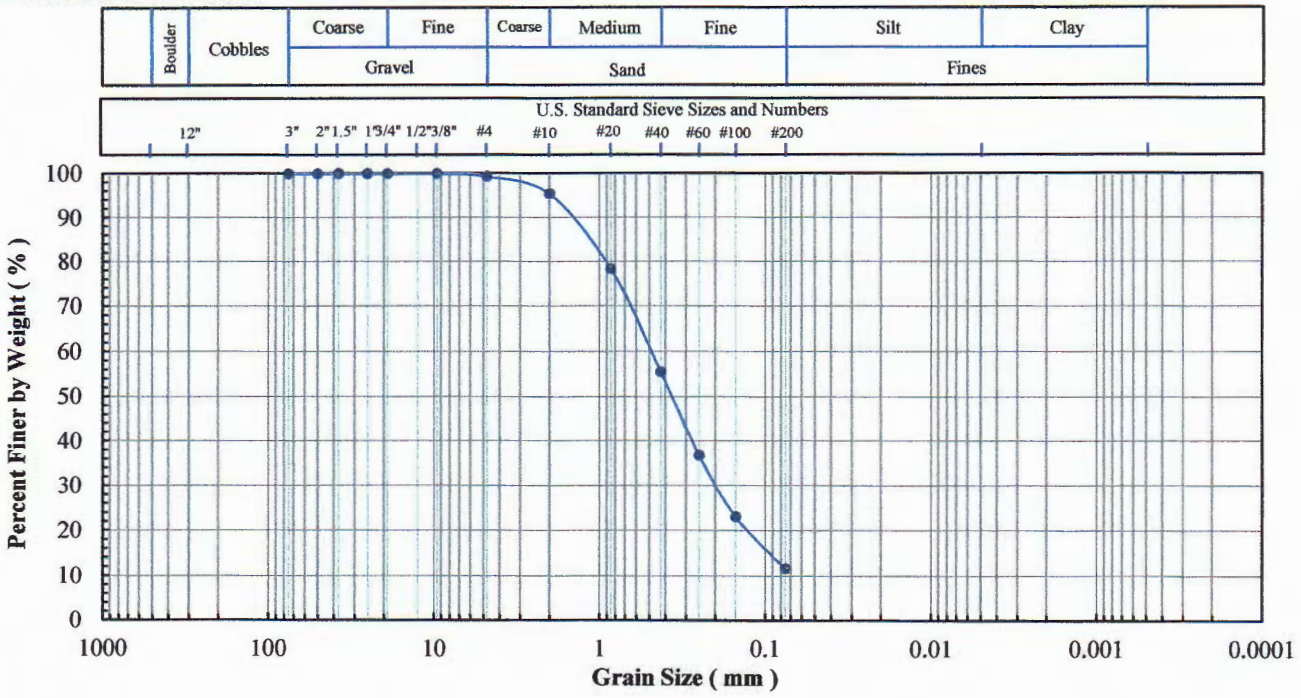
Excel Geotechnical Testing, Inc.
"Excellence in Testing"
953 Forrest Street, Roswell, Georgia 30075
Tel: (770) 910 7537 Fax: (770) 910 7538

Project Name:	LA Water Wheel Project
Project No:	559
Client Sample ID:	B-1-13
Lab Sample No:	12H097

ASTM C 136, D 422, D 854, D 1140, D2216, D 2487, D4318

SOIL INDEX PROPERTIES

Grain Size, Spec. Gravity, Moist. Content, Eng. Classification, Atterberg Limits



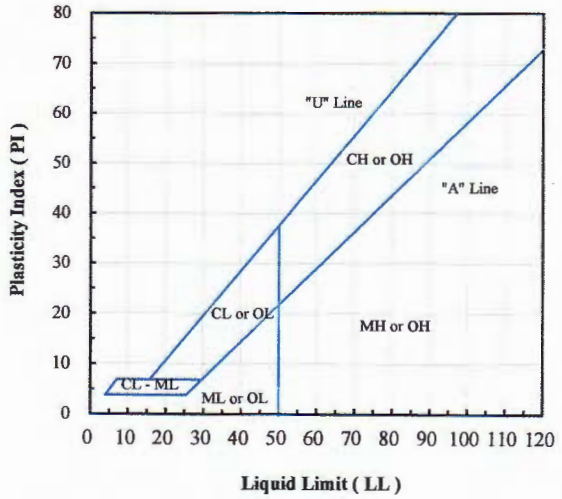
Sieve No.	Size (mm)	% Finer
3"	75	100.0
2"	50	100.0
1.5"	37.5	100.0
1"	25	100.0
3/4"	19	100.0
3/8"	9.5	100.0
#4	4.75	99.4
#10	2.00	95.5
#20	0.850	78.4
#40	0.425	55.6
#60	0.250	36.9
#100	0.150	23.2
#200	0.075	11.8

Specific Gravity (-):	

Hydrometer Particle Diameter (mm)	% Finer

Gravel (%):	0.6
Sand (%):	87.6
Fines (%):	11.8
Silt (%):	
Clay (%):	

Coeff. Unif. (Cu):	
Coeff. Curv. (Cc):	



Client Sample ID.	Lab Sample No:	Moisture Content (%)	Fines Content < No. 200 (%)	Atterberg Limits LL (-)	Atterberg Limits PL (-)	Atterberg Limits PI (-)	Engineering Classification
B-1-13	12H097	16.8	11.8				

Note(s):

9-4-12 NSR

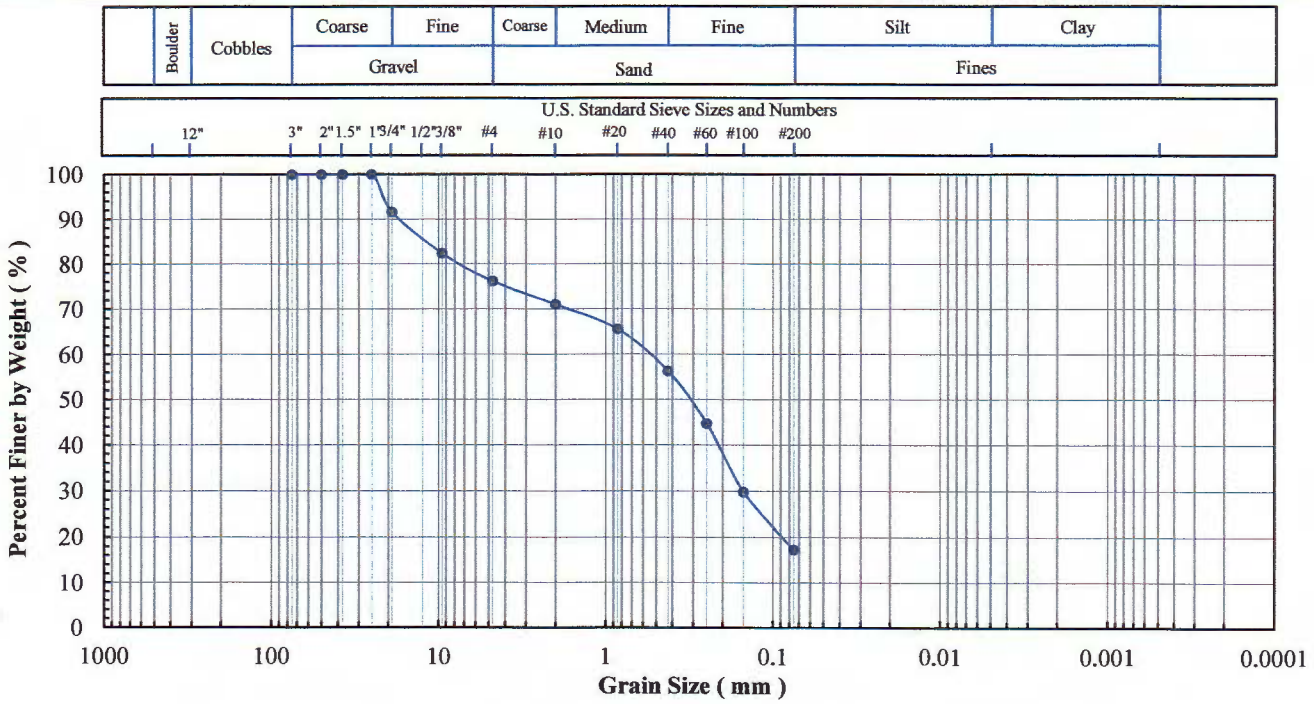
Excel Geotechnical Testing, Inc.
"Excellence in Testing"
953 Forrest Street, Roswell, Georgia 30075
Tel: (770) 910 7537 Fax: (770) 910 7538

Project Name:	LA Water Wheel Project
Project No:	559
Client Sample ID:	B-2-1
Lab Sample No:	12G051

ASTM C 136, D 422, D 854, D 1140, D2216, D 2487, D4318

SOIL INDEX PROPERTIES

Grain Size, Spec. Gravity, Moist. Content, Eng. Classification, Atterberg Limits



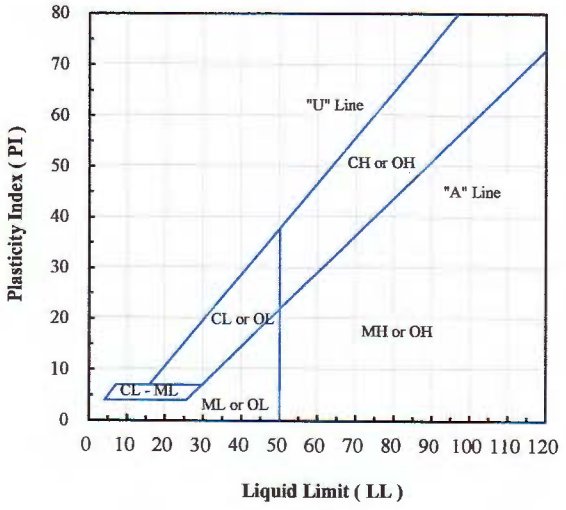
Sieve No.	Size (mm)	% Finer
3"	75	100.0
2"	50	100.0
1.5"	37.5	100.0
1"	25	100.0
3/4"	19	91.7
3/8"	9.5	82.4
#4	4.75	76.2
#10	2.00	71.1
#20	0.850	65.6
#40	0.425	56.3
#60	0.250	44.7
#100	0.150	29.8
#200	0.075	17.3

Specific Gravity (-):	

Hydrometer Particle Diameter (mm)	% Finer

Gravel (%):	23.8
Sand (%):	58.9
Fines (%):	17.3
Silt (%):	
Clay (%):	

Coeff. Unif. (Cu):	
Coeff. Curv. (Cc):	



Client Sample ID.	Lab Sample No:	Moisture Content (%)	Fines Content < No. 200 (%)	Atterberg Limits LL (-)	Atterberg Limits PL (-)	Atterberg Limits PI (-)	Engineering Classification
B-2-1	12G051	2.8	17.3				

Note(s):

A few particles larger than 1.0 in., but smaller than 1.5 in., were discarded.

7-22-12 NSK

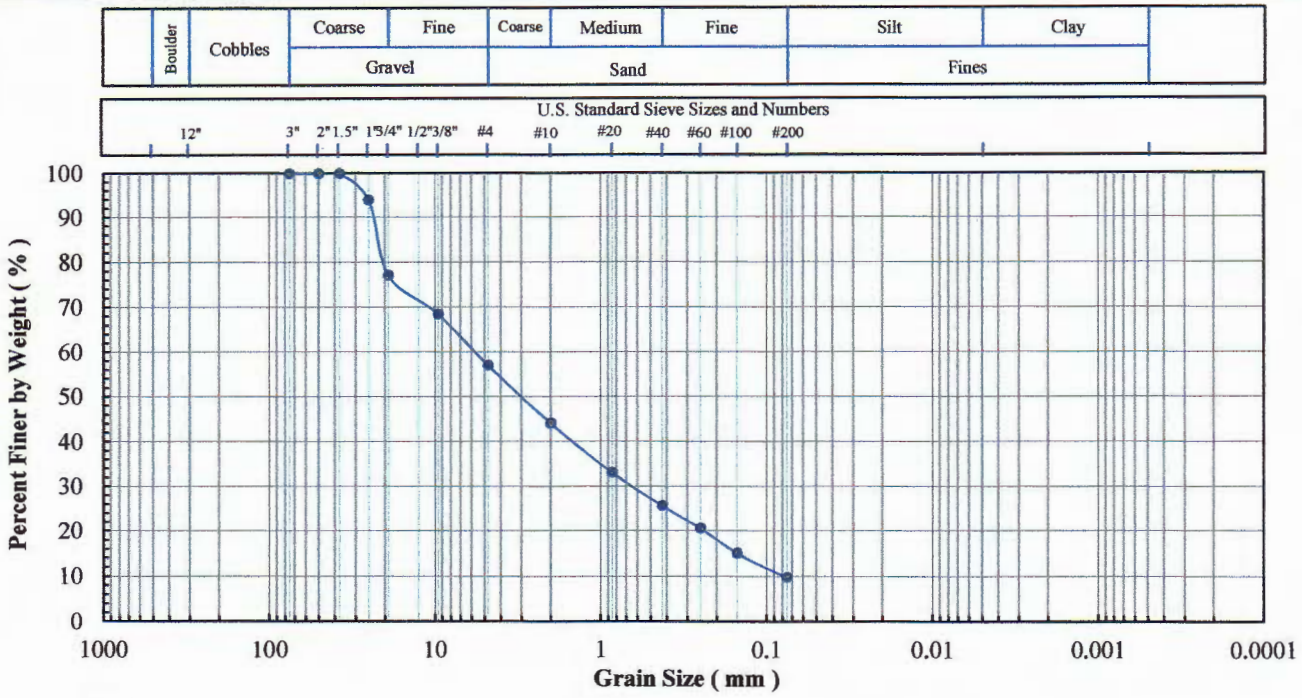
Excel Geotechnical Testing, Inc.
"Excellence in Testing"
953 Forrest Street, Roswell, Georgia 30075
Tel: (770) 910 7537 Fax: (770) 910 7538

Project Name:	LA Water Wheel Project
Project No:	559
Client Sample ID:	B-3-4
Lab Sample No:	12H098

ASTM C 136, D 422, D 854, D 1140, D2216, D 2487, D4318

SOIL INDEX PROPERTIES

Grain Size, Spec. Gravity, Moist. Content, Eng. Classification, Atterberg Limits



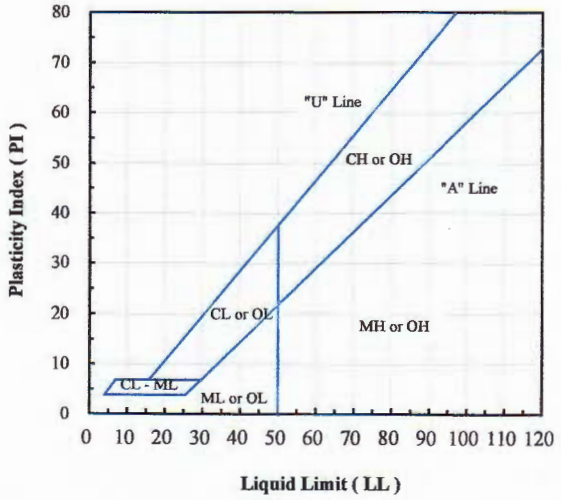
Sieve No.	Size (mm)	% Finer
3"	75	100.0
2"	50	100.0
1.5"	37.5	100.0
1"	25	94.0
3/4"	19	77.2
3/8"	9.5	68.6
#4	4.75	57.1
#10	2.00	44.2
#20	0.850	33.2
#40	0.425	25.8
#60	0.250	20.7
#100	0.150	15.2
#200	0.075	9.9

Specific Gravity (-):	

Hydrometer Particle Diameter (mm)	% Finer

Gravel (%):	42.9
Sand (%):	47.2
Fines (%):	9.9
Silt (%):	
Clay (%):	

Coeff. Unif. (Cu):	
Coeff. Curv. (Cc):	



Client Sample ID.	Lab Sample No:	Moisture Content (%)	Fines Content < No. 200 (%)	Atterberg Limits LL (-)	Atterberg Limits PL (-)	Atterberg Limits PI (-)	Engineering Classification
B-3-4	12H098	2.9	9.9				

Note(s):

9-4-12 NSK

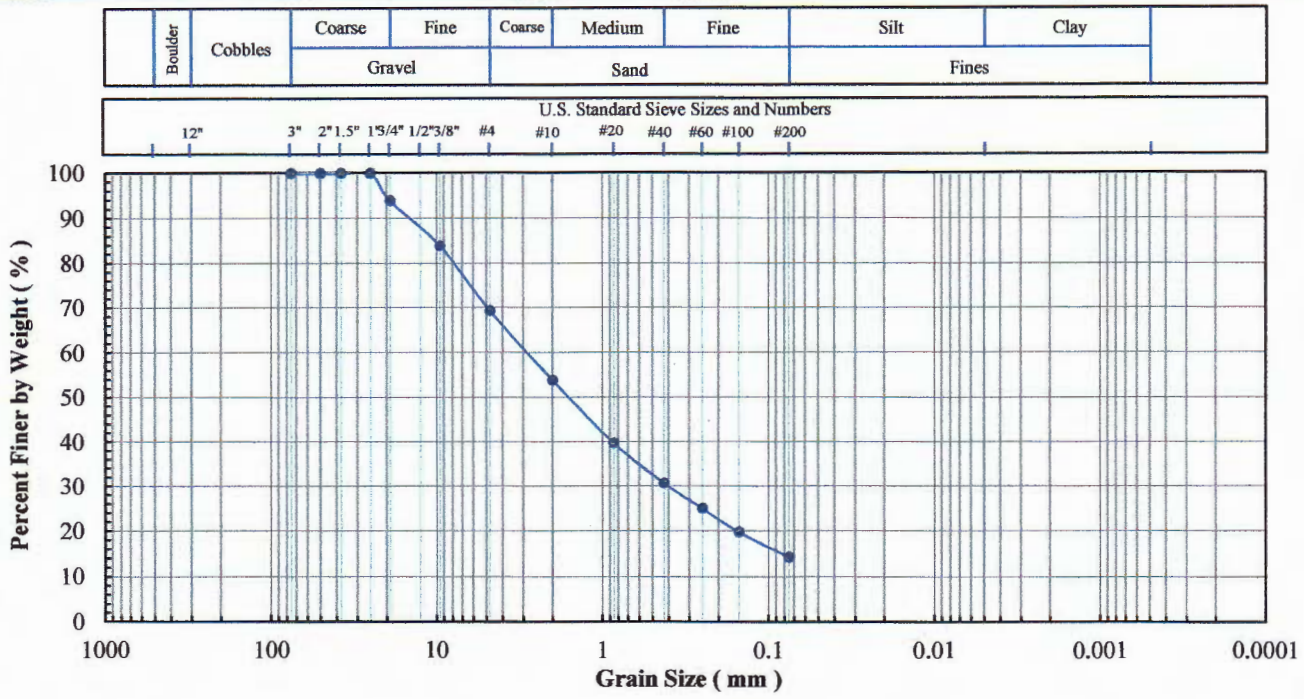
Excel Geotechnical Testing, Inc.
"Excellence in Testing"
953 Forrest Street, Roswell, Georgia 30075
Tel: (770) 910 7537 Fax: (770) 910 7538

Project Name:	LA Water Wheel Project
Project No:	559
Client Sample ID:	B-3-7
Lab Sample No:	12H099

ASTM C 136, D 422, D 854, D 1140, D2216, D 2487, D4318

SOIL INDEX PROPERTIES

Grain Size, Spec. Gravity, Moist. Content, Eng. Classification, Atterberg Limits



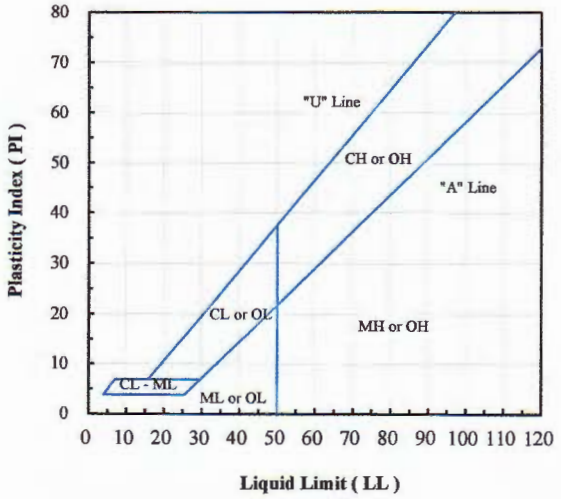
Sieve No.	Size (mm)	% Finer
3"	75	100.0
2"	50	100.0
1.5"	37.5	100.0
1"	25	100.0
3/4"	19	94.0
3/8"	9.5	84.0
#4	4.75	69.4
#10	2.00	54.0
#20	0.850	39.8
#40	0.425	30.8
#60	0.250	25.1
#100	0.150	19.9
#200	0.075	14.4

Specific Gravity (-):	

Hydrometer Particle Diameter (mm)	% Finer

Gravel (%):	30.6
Sand (%):	55.0
Fines (%):	14.4
Silt (%):	
Clay (%):	

Coeff. Unif. (Cu):	
Coeff. Curv. (Cc):	



Client Sample ID.	Lab Sample No:	Moisture Content (%)	Fines Content < No. 200 (%)	Atterberg Limits LL (-)	PL (-)	PI (-)	Engineering Classification
B-3-7	12H099	2.3	14.4	NP	NP	NP	

Note(s):

9-4-12 NSK

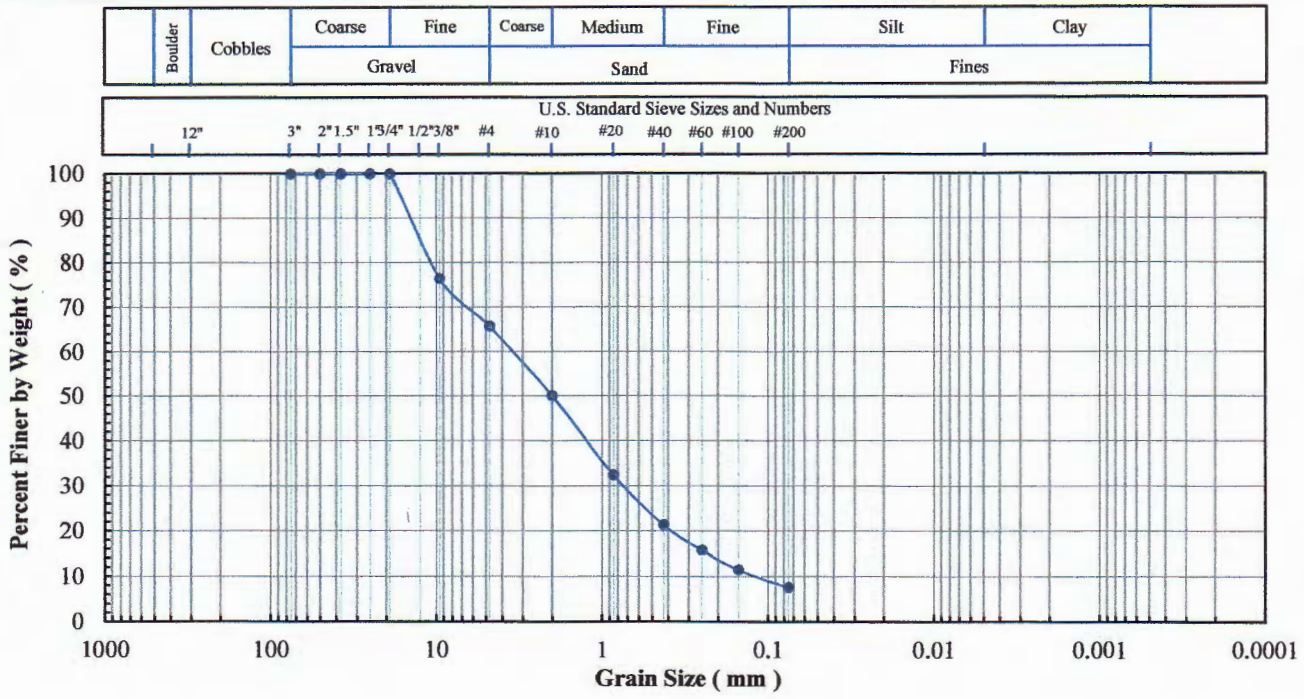
Excel Geotechnical Testing, Inc.
"Excellence in Testing"
953 Forrest Street, Roswell, Georgia 30075
Tel: (770) 910 7537 Fax: (770) 910 7538

Project Name:	LA Water Wheel Project
Project No:	559
Client Sample ID:	B-3-8
Lab Sample No:	12H100

ASTM C 136, D 422, D 854, D 1140, D2216, D 2487, D4318

SOIL INDEX PROPERTIES

Grain Size, Spec. Gravity, Moist. Content, Eng. Classification, Atterberg Limits



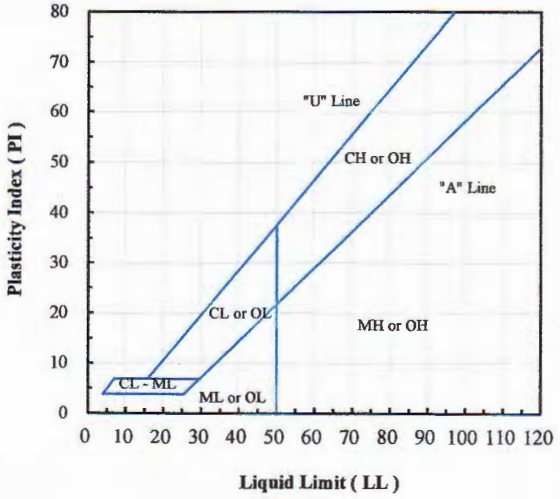
Sieve No.	Size (mm)	% Finer
3"	75	100.0
2"	50	100.0
1.5"	37.5	100.0
1"	25	100.0
3/4"	19	100.0
3/8"	9.5	76.5
#4	4.75	65.8
#10	2.00	50.2
#20	0.850	32.5
#40	0.425	21.5
#60	0.250	15.9
#100	0.150	11.6
#200	0.075	7.7

Specific Gravity (-):	

Hydrometer Particle Diameter (mm)	% Finer

Gravel (%):	34.2
Sand (%):	58.1
Fines (%):	7.7
Silt (%):	
Clay (%):	

Coeff. Unif. (Cu):	
Coeff. Curv. (Cc):	



Client Sample ID.	Lab Sample No:	Moisture Content (%)	Fines Content < No. 200 (%)	Atterberg Limits LL (-)	PL (-)	PI (-)	Engineering Classification
B-3-8	12H100	2.9	7.7	NP	NP	NP	

Note(s):

9-4-12 NSK

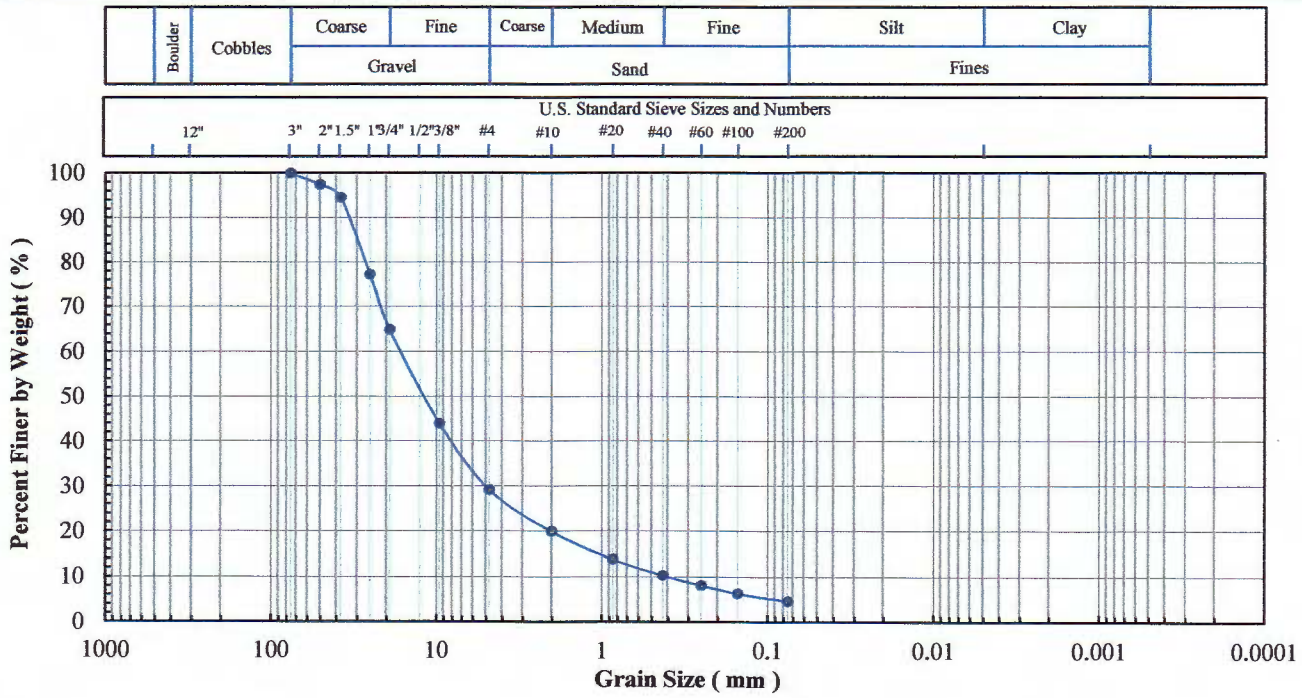
Excel Geotechnical Testing, Inc.
"Excellence in Testing"
953 Forrest Street, Roswell, Georgia 30075
Tel: (770) 910 7537 Fax: (770) 910 7538

Project Name:	LA Water Wheel Project
Project No:	559
Client Sample ID:	B-5-3
Lab Sample No:	12L025

ASTM D 2216, D 1140, D 422, D 854, C136

SOIL INDEX PROPERTIES

Moisture Content, Grain Size, Atterberg Limits, Classification



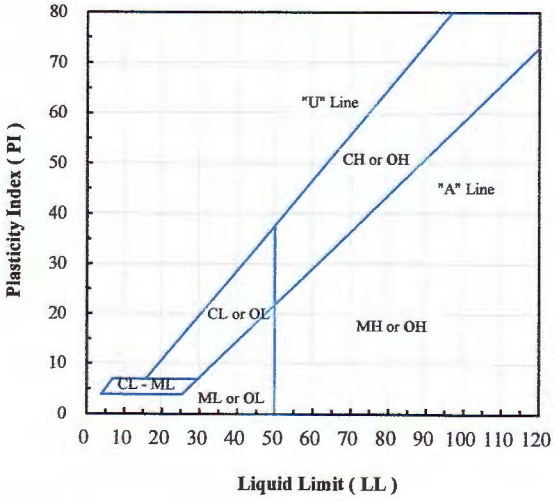
Sieve No.	Size (mm)	% Finer
3"	75	100.0
2"	50	97.5
1.5"	37.5	94.6
1"	25	77.3
3/4"	19	65.0
3/8"	9.5	44.0
#4	4.75	29.2
#10	2.00	20.0
#20	0.850	13.9
#40	0.425	10.4
#60	0.250	8.2
#100	0.150	6.4
#200	0.075	4.7

Specific Gravity (-):	

Hydrometer Particle Diameter (mm)	% Finer

Gravel (%):	70.8
Sand (%):	24.5
Fines (%):	4.7
Silt (%):	
Clay (%):	

Coeff. Unif. (Cu):	47.0
Coeff. Curv. (Cc):	4.0



Client Sample ID.	Lab Sample No:	Moisture Content (%)	Fines Content < No. 200 (%)	Atterberg Limits LL (-)	Atterberg Limits PL (-)	Atterberg Limits PI (-)	Engineering Classification
B-5-3	12L025	9.4	4.7	NP	NP	NP	GP - Poorly graded gravel with sand

Note(s):

1-4-13 NSL

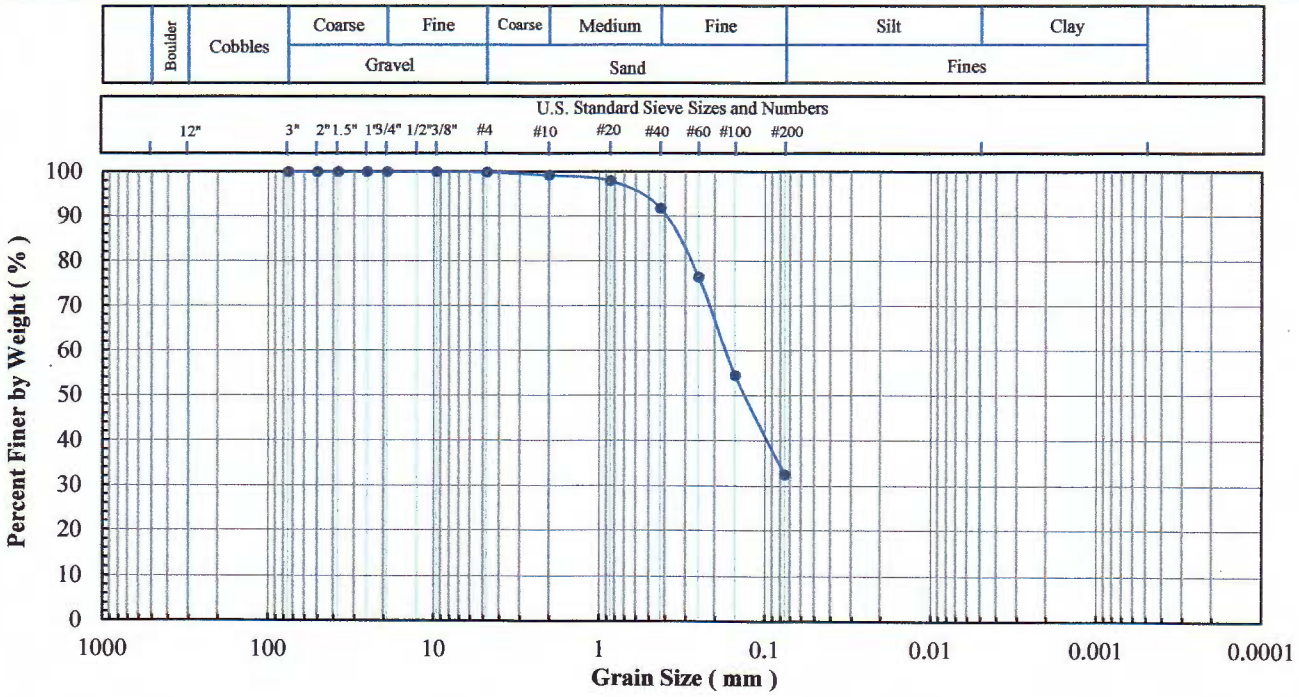
Excel Geotechnical Testing, Inc.
"Excellence in Testing"
953 Forrest Street, Roswell, Georgia 30075
Tel: (770) 910 7537 Fax: (770) 910 7538

Project Name:	LA Water Wheel Project
Project No:	559
Client Sample ID:	B-5-7
Lab Sample No:	12L026

ASTM C 136, D 422, D 854, D 1140, D2216, D 2487, D4318

SOIL INDEX PROPERTIES

Grain Size, Spec. Gravity, Moist. Content, Eng. Classification, Atterberg Limits



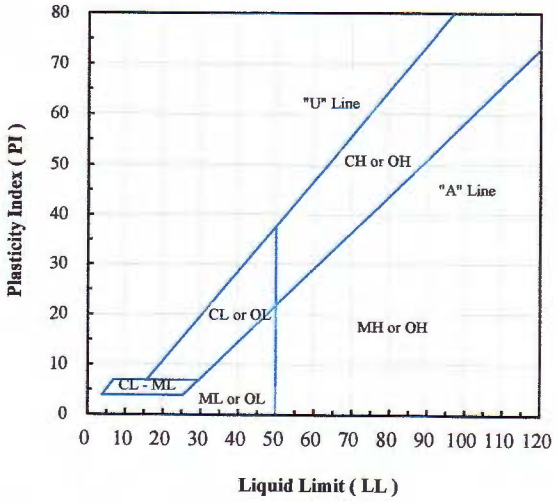
Sieve No.	Size (mm)	% Finer
3"	75	100.0
2"	50	100.0
1.5"	37.5	100.0
1"	25	100.0
3/4"	19	100.0
3/8"	9.5	100.0
#4	4.75	99.9
#10	2.00	99.3
#20	0.850	98.0
#40	0.425	91.8
#60	0.250	76.5
#100	0.150	54.5
#200	0.075	32.5

Specific Gravity (-):	

Hydrometer Particle Diameter (mm)	% Finer

Gravel (%):	0.1
Sand (%):	67.4
Fines (%):	32.5
Silt (%):	
Clay (%):	

Coeff. Unif. (Cu):	
Coeff. Curv. (Cc):	



Client Sample ID.	Lab Sample No:	Moisture Content (%)	Fines Content < No. 200 (%)	Atterberg Limits LL (-)	Atterberg Limits PL (-)	Atterberg Limits PI (-)	Engineering Classification
B-5-7	12L026	19.5	32.5	NP	NP	NP	SM - Silty sand

Note(s):

Engineering classification is based on the assumption that the fines are either ML or MH.

1-4-13 NSR

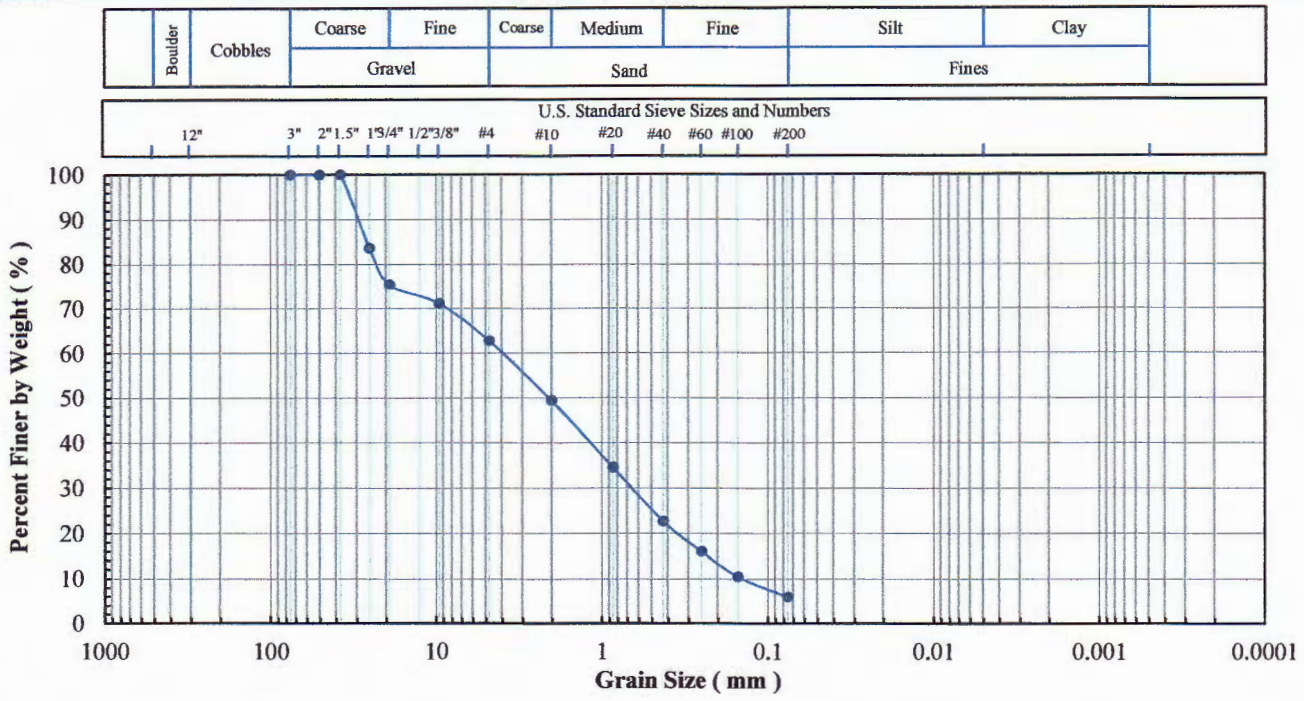
Excel Geotechnical Testing, Inc.
"Excellence in Testing"
953 Forrest Street, Roswell, Georgia 30075
Tel: (770) 910 7537 Fax: (770) 910 7538

Project Name:	LA Water Wheel Project
Project No:	559
Client Sample ID:	B-6-3
Lab Sample No:	12L027

ASTM C 136, D 422, D 854, D 1140, D2216, D 2487, D4318

SOIL INDEX PROPERTIES

Grain Size, Spec. Gravity, Moist. Content, Eng. Classification, Atterberg Limits



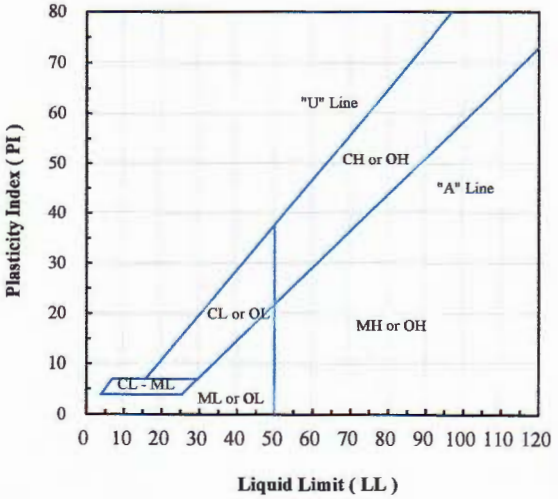
Sieve No.	Size (mm)	% Finer
3"	75	100.0
2"	50	100.0
1.5"	37.5	100.0
1"	25	83.7
3/4"	19	75.5
3/8"	9.5	71.2
#4	4.75	62.8
#10	2.00	49.5
#20	0.850	34.6
#40	0.425	22.8
#60	0.250	16.1
#100	0.150	10.6
#200	0.075	6.0

Specific Gravity (-):	

Hydrometer Particle Diameter (mm)	% Finer

Gravel (%):	37.2
Sand (%):	56.8
Fines (%):	6.0
Silt (%):	
Clay (%):	

Coeff. Unif. (Cu):	26.7
Coeff. Curv. (Cc):	0.7



Client Sample ID.	Lab Sample No:	Moisture Content (%)	Fines Content < No. 200 (%)	Atterberg Limits LL (-)	PL (-)	PI (-)	Engineering Classification
B-6-3	12L027	8.9	6.0	NP	NP	NP	SP-SM - Poorly graded sand with silt and gravel

Note(s):

Engineering classification is based on the assumption that the fines are either ML or MH.

1-4-13 NJR

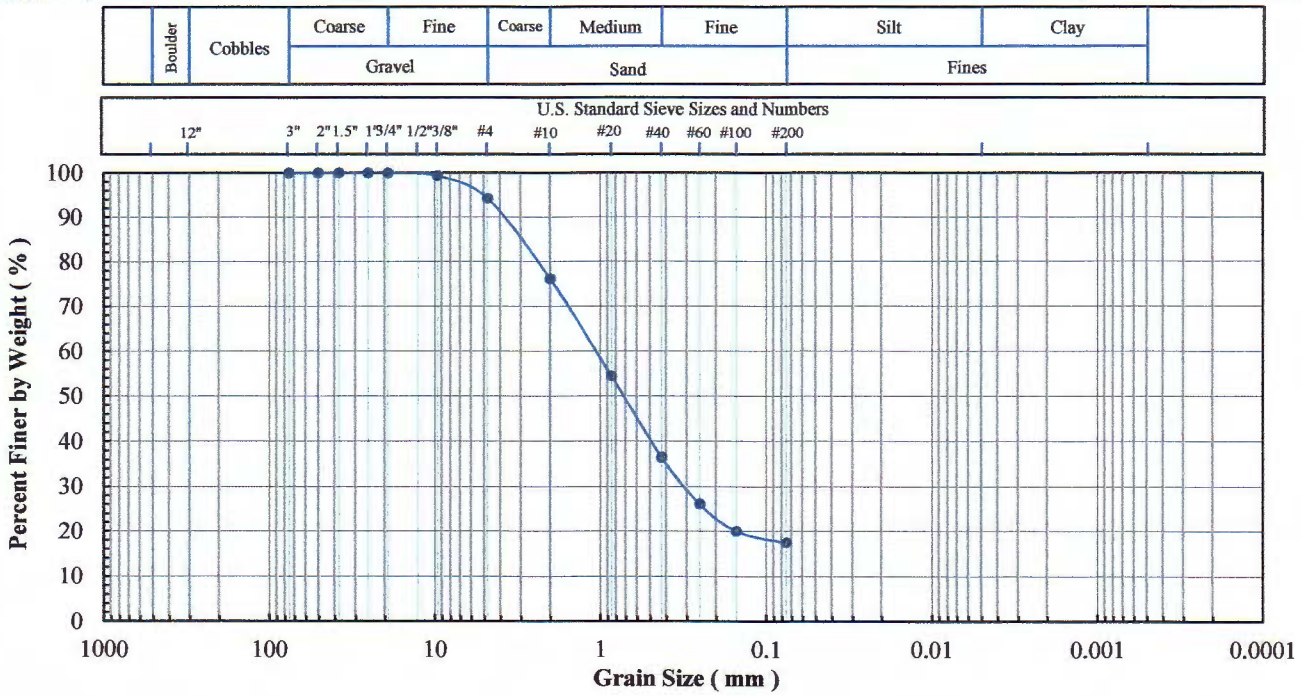
Excel Geotechnical Testing, Inc.
"Excellence in Testing"
953 Forrest Street, Roswell, Georgia 30075
Tel: (770) 910 7537 Fax: (770) 910 7538

Project Name:	LA Water Wheel Project
Project No:	559
Client Sample ID:	B-6-5
Lab Sample No:	12L028

ASTM C 136, D 422, D 854, D 1140, D2216, D 2487, D4318

SOIL INDEX PROPERTIES

Grain Size, Spec. Gravity, Moist. Content, Eng. Classification, Atterberg Limits



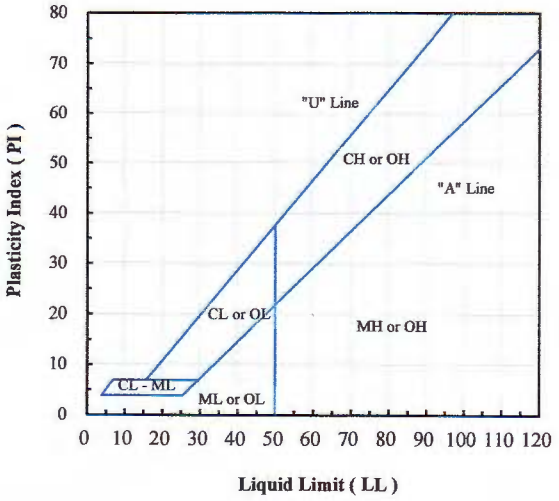
Sieve No.	Size (mm)	% Finer
3"	75	100.0
2"	50	100.0
1.5"	37.5	100.0
1"	25	100.0
3/4"	19	100.0
3/8"	9.5	99.4
#4	4.75	94.3
#10	2.00	76.2
#20	0.850	54.5
#40	0.425	36.6
#60	0.250	26.2
#100	0.150	20.1
#200	0.075	17.5

Specific Gravity (-):	

Hydrometer Particle Diameter (mm)	% Finer

Gravel (%):	5.7
Sand (%):	76.8
Fines (%):	17.5
Silt (%):	
Clay (%):	

Coeff. Unif. (Cu):	
Coeff. Curv. (Cc):	



Client Sample ID.	Lab Sample No:	Moisture Content (%)	Fines Content < No. 200 (%)	Atterberg Limits LL (-)	PL (-)	PI (-)	Engineering Classification
B-6-5	12L028	11.3	17.5	NP	NP	NP	SM - Silty sand

Note(s):

Engineering classification is based on the assumption that the fines are either ML or MH.

1-4-13 NJR

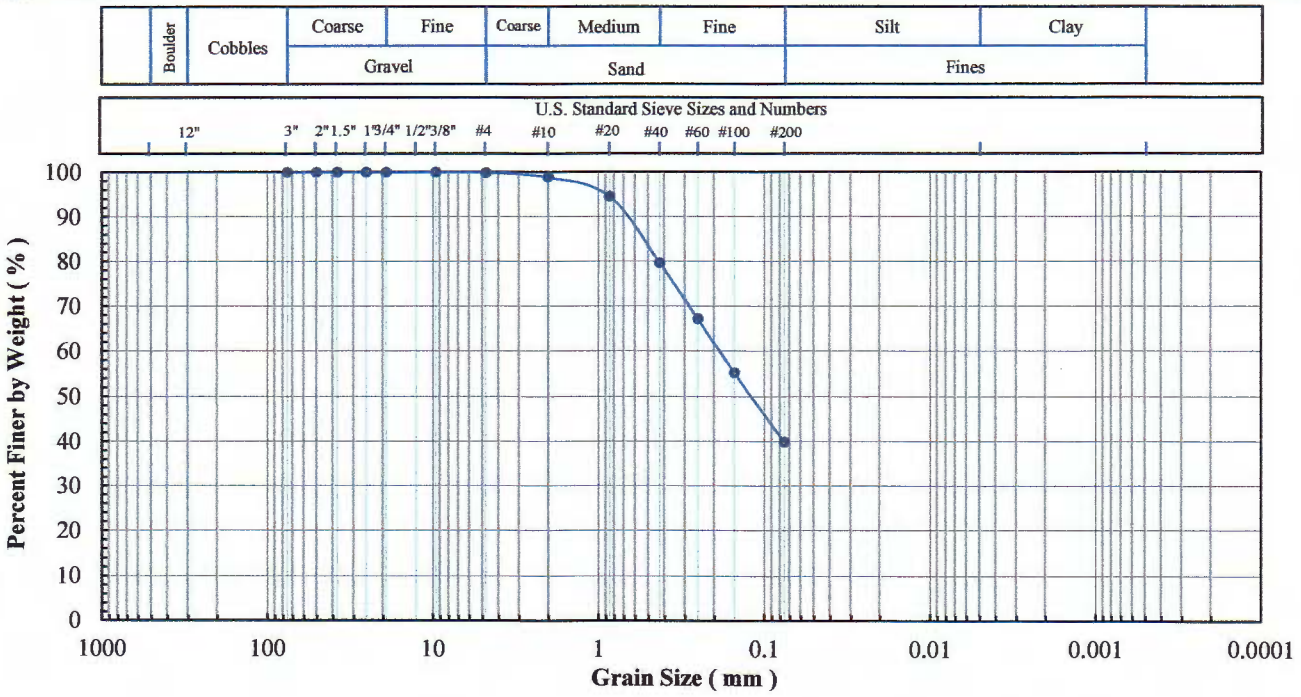
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"Excellence in Testing"
953 Forrest Street, Roswell, Georgia 30075
Tel: (770) 910 7537 Fax: (770) 910 7538

Project Name:	LA Water Wheel Project
Project No:	559
Client Sample ID:	B-6-7
Lab Sample No:	12L029

ASTM C 136, D 422, D 854, D 1140, D2216, D 2487, D4318

SOIL INDEX PROPERTIES

Grain Size, Spec. Gravity, Moist. Content, Eng. Classification, Atterberg Limits



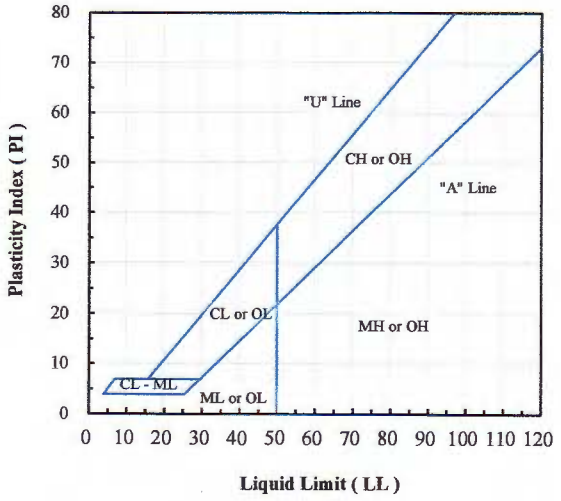
Sieve No.	Size (mm)	% Finer
3"	75	100.0
2"	50	100.0
1.5"	37.5	100.0
1"	25	100.0
3/4"	19	100.0
3/8"	9.5	100.0
#4	4.75	99.9
#10	2.00	98.9
#20	0.850	94.6
#40	0.425	79.7
#60	0.250	67.2
#100	0.150	55.3
#200	0.075	39.9

Specific Gravity (-):	

Hydrometer Particle Diameter (mm)	% Finer

Gravel (%):	0.1
Sand (%):	60.0
Fines (%):	39.9
Silt (%):	
Clay (%):	

Coeff. Unif. (Cu):	
Coeff. Curv. (Cc):	



Client Sample ID.	Lab Sample No:	Moisture Content (%)	Fines Content < No. 200 (%)	Atterberg Limits LL (-)	Atterberg Limits PL (-)	Atterberg Limits PI (-)	Engineering Classification
B-6-7	12L029	23.0	39.9	NP	NP	NP	SM - Silty sand

Note(s):

Engineering classification is based on the assumption that the fines are either ML or MH.

1-4-13 NSR

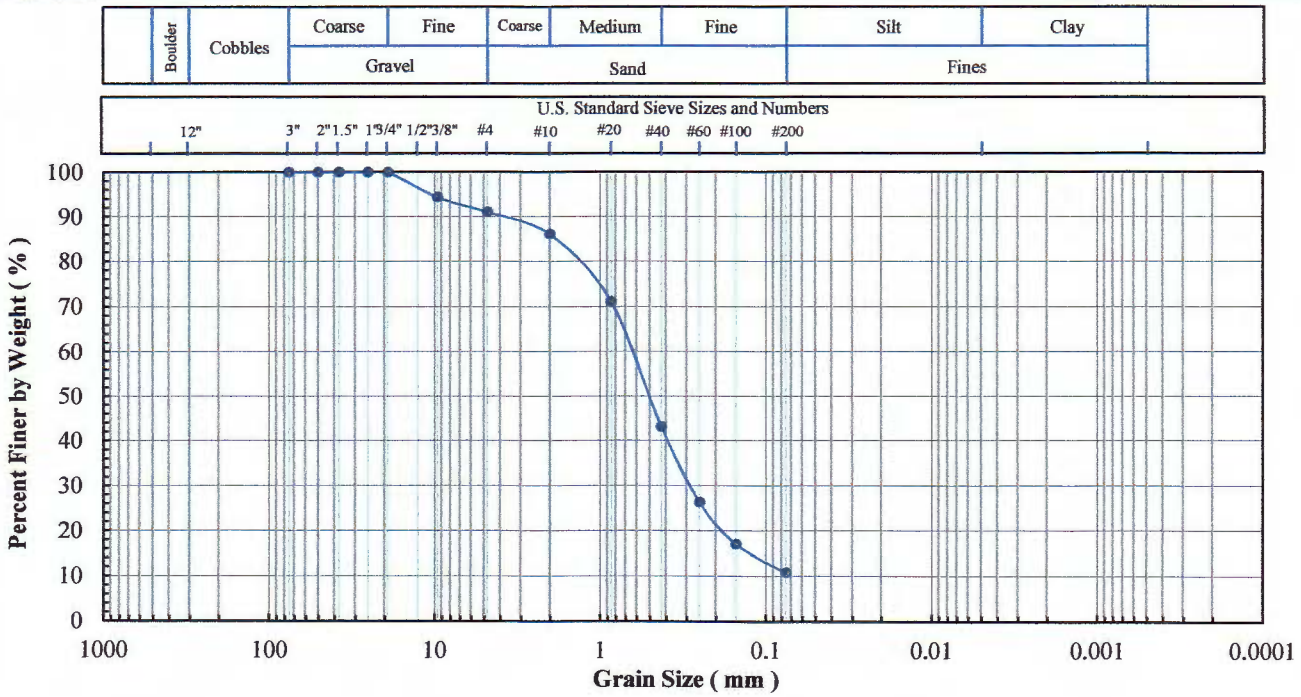
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"Excellence in Testing"
953 Forrest Street, Roswell, Georgia 30075
Tel: (770) 910 7537 Fax: (770) 910 7538

Project Name:	LA Water Wheel Project
Project No:	559
Client Sample ID:	B-6-9
Lab Sample No:	12L030

ASTM C 136, D 422, D 854, D 1140, D2216, D 2487, D4318

SOIL INDEX PROPERTIES

Grain Size, Spec. Gravity, Moist. Content, Eng. Classification, Atterberg Limits



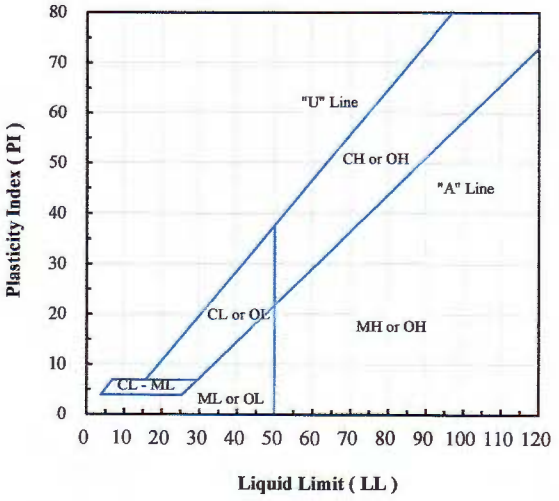
Sieve No.	Size (mm)	% Finer
3"	75	100.0
2"	50	100.0
1.5"	37.5	100.0
1"	25	100.0
3/4"	19	100.0
3/8"	9.5	94.4
#4	4.75	91.1
#10	2.00	86.1
#20	0.850	71.1
#40	0.425	43.2
#60	0.250	26.4
#100	0.150	17.1
#200	0.075	10.8

Specific Gravity (-):	

Hydrometer Particle Diameter (mm)	% Finer

Gravel (%):	8.9
Sand (%):	80.3
Fines (%):	10.8
Silt (%):	
Clay (%):	

Coeff. Unif. (Cu):	
Coeff. Curv. (Cc):	



Client Sample ID.	Lab Sample No:	Moisture Content (%)	Fines Content < No. 200 (%)	Atterberg Limits LL (-)	Atterberg Limits PL (-)	Atterberg Limits PI (-)	Engineering Classification
B-6-9	12L030	11.7	10.8	NP	NP	NP	SW-SM - Well-graded sand with silt

Note(s):

Engineering classification is based on the assumption that the fines are either ML or MH.

1-4-13 NSR

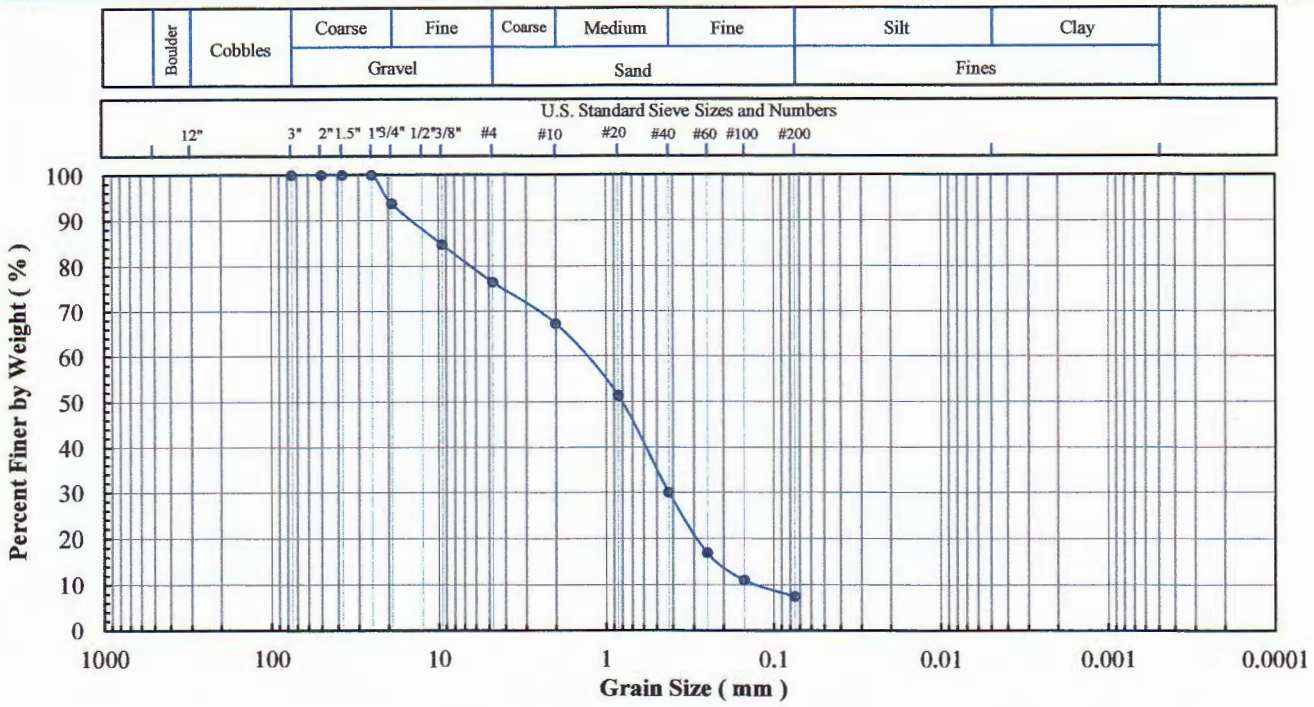
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953 Forrest Street, Roswell, Georgia 30075
Tel: (770) 910 7537 Fax: (770) 910 7538

Project Name:	LA Water Wheel Project
Project No:	559
Client Sample ID:	GP-1-8
Lab Sample No:	12G052

ASTM C 136, D 422, D 854, D 1140, D2216, D 2487, D4318

SOIL INDEX PROPERTIES

Grain Size, Spec. Gravity, Moist. Content, Eng. Classification, Atterberg Limits



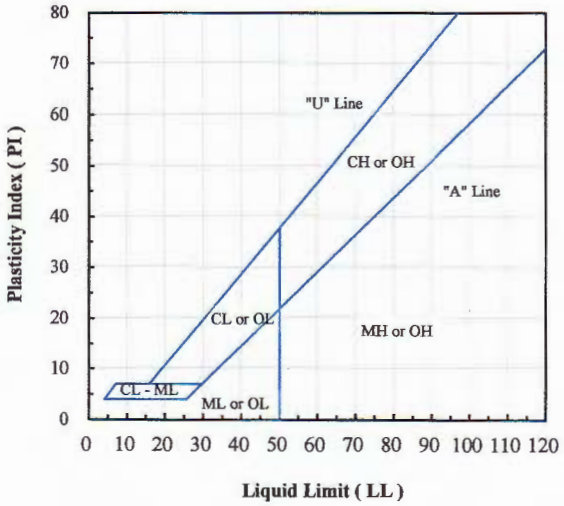
Sieve No.	Size (mm)	% Finer
3"	75	100.0
2"	50	100.0
1.5"	37.5	100.0
1"	25	100.0
3/4"	19	93.7
3/8"	9.5	84.8
#4	4.75	76.5
#10	2.00	67.3
#20	0.850	51.4
#40	0.425	30.0
#60	0.250	17.0
#100	0.150	11.1
#200	0.075	7.5

Specific Gravity (-):	

Hydrometer Particle Diameter (mm)	% Finer

Gravel (%):	23.5
Sand (%):	69.0
Fines (%):	7.5
Silt (%):	
Clay (%):	

Coeff. Unif. (Cu):	
Coeff. Curv. (Cc):	



Client Sample ID.	Lab Sample No:	Moisture Content (%)	Fines Content < No. 200 (%)	Atterberg Limits LL (-)	Atterberg Limits PL (-)	Atterberg Limits PI (-)	Engineering Classification
GP-1-8	12G052	3.7	7.5				

Note(s):

7-22-12 MSK

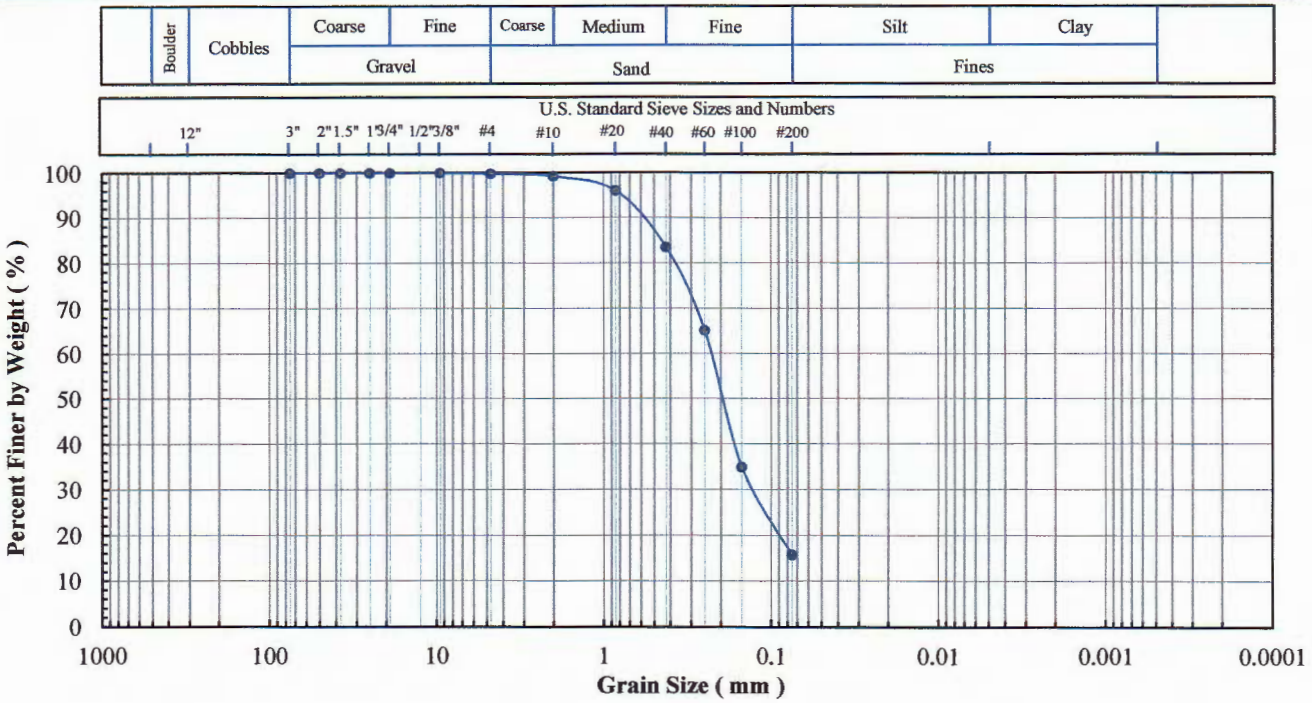
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"Excellence in Testing"
953 Forrest Street, Roswell, Georgia 30075
Tel: (770) 910 7537 Fax: (770) 910 7538

Project Name:	LA Water Wheel Project
Project No:	559
Client Sample ID:	GP-1-16
Lab Sample No:	12G053

ASTM C 136, D 422, D 854, D 1140, D2216, D 2487, D4318

SOIL INDEX PROPERTIES

Grain Size, Spec. Gravity, Moist. Content, Eng. Classification, Atterberg Limits



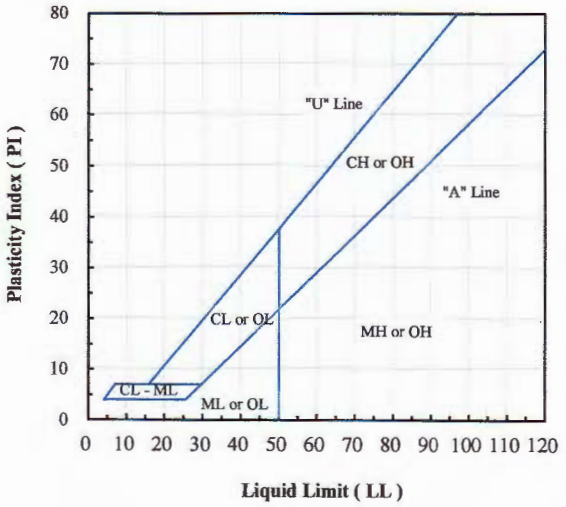
Sieve No.	Size (mm)	% Finer
3"	75	100.0
2"	50	100.0
1.5"	37.5	100.0
1"	25	100.0
3/4"	19	100.0
3/8"	9.5	100.0
#4	4.75	99.8
#10	2.00	99.3
#20	0.850	96.1
#40	0.425	83.5
#60	0.250	65.2
#100	0.150	34.9
#200	0.075	15.7

Specific Gravity (-):	

Hydrometer Particle Diameter (mm)	% Finer

Gravel (%):	0.2
Sand (%):	84.1
Fines (%):	15.7
Silt (%):	
Clay (%):	

Coeff. Unif. (Cu):	
Coeff. Curv. (Cc):	



Client Sample ID.	Lab Sample No:	Moisture Content (%)	Fines Content < No. 200 (%)	Atterberg Limits LL (-)	Atterberg Limits PL (-)	Atterberg Limits PI (-)	Engineering Classification
GP-1-16	12G053	5.5	15.7				

Note(s):

7-22-12 NSR

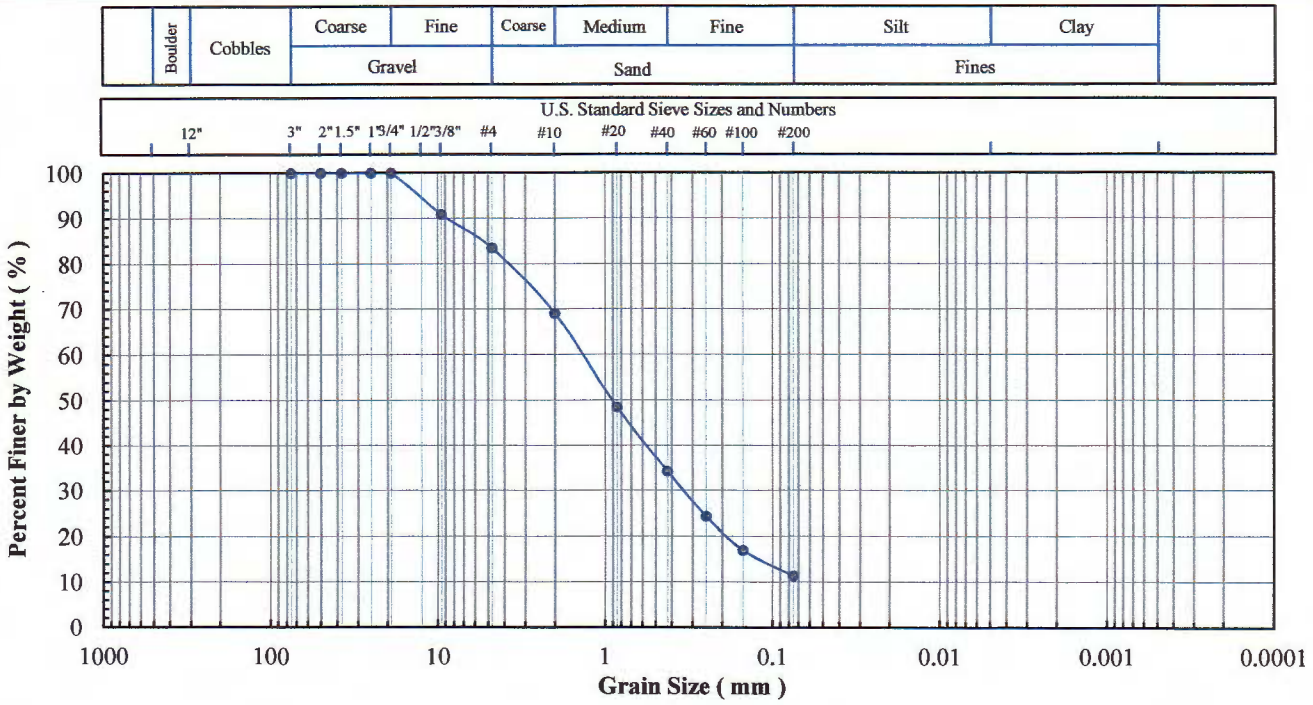
Excel Geotechnical Testing, Inc.
"Excellence in Testing"
953 Forrest Street, Roswell, Georgia 30075
Tel: (770) 910 7537 Fax: (770) 910 7538

Project Name:	LA Water Wheel Project
Project No:	559
Client Sample ID:	GP-1-19
Lab Sample No:	12G054

ASTM C 136, D 422, D 854, D 1140, D2216, D 2487, D4318

SOIL INDEX PROPERTIES

Grain Size, Spec. Gravity, Moist. Content, Eng. Classification, Atterberg Limits



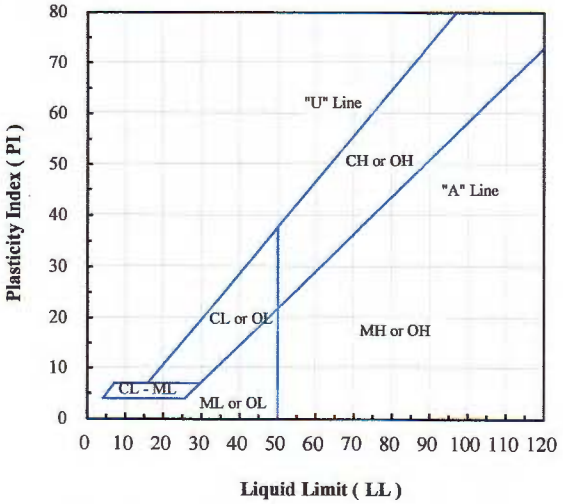
Sieve No.	Size (mm)	% Finer
3"	75	100.0
2"	50	100.0
1.5"	37.5	100.0
1"	25	100.0
3/4"	19	100.0
3/8"	9.5	90.9
#4	4.75	83.5
#10	2.00	69.1
#20	0.850	48.5
#40	0.425	34.2
#60	0.250	24.3
#100	0.150	17.0
#200	0.075	11.3

Specific Gravity (-):	

Hydrometer Particle Diameter (mm)	% Finer

Gravel (%):	16.5
Sand (%):	72.2
Fines (%):	11.3
Silt (%):	
Clay (%):	

Coeff. Unif. (Cu):	
Coeff. Curv. (Cc):	



Client Sample ID.	Lab Sample No:	Moisture Content (%)	Fines Content < No. 200 (%)	Atterberg Limits LL (-)	PL (-)	PI (-)	Engineering Classification
GP-1-19	12G054	10.2	11.3				

Note(s):

7-22-12 NSR

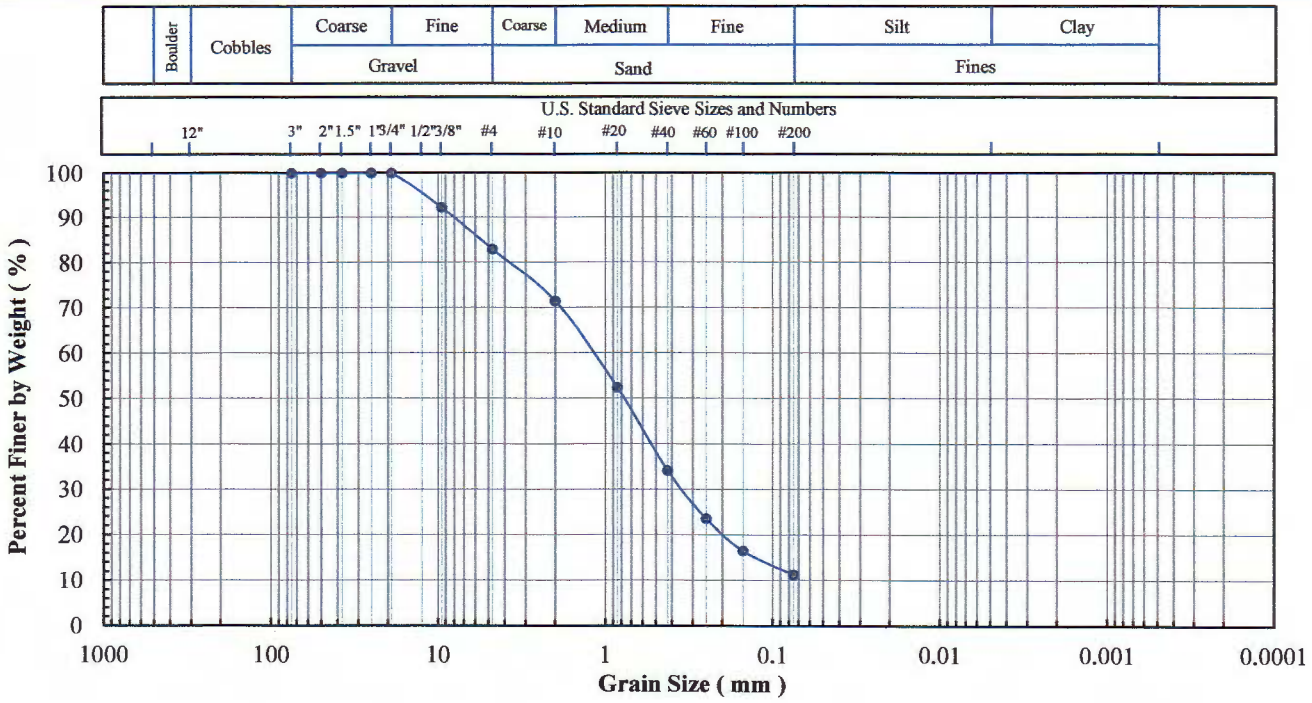
Excel Geotechnical Testing, Inc.
"Excellence in Testing"
953 Forrest Street, Roswell, Georgia 30075
Tel: (770) 910 7537 Fax: (770) 910 7538

Project Name:	LA Water Wheel Project
Project No:	559
Client Sample ID:	GP-3-4
Lab Sample No:	12G055

ASTM C 136, D 422, D 854, D 1140, D2216, D 2487, D4318

SOIL INDEX PROPERTIES

Grain Size, Spec. Gravity, Moist. Content, Eng. Classification, Atterberg Limits



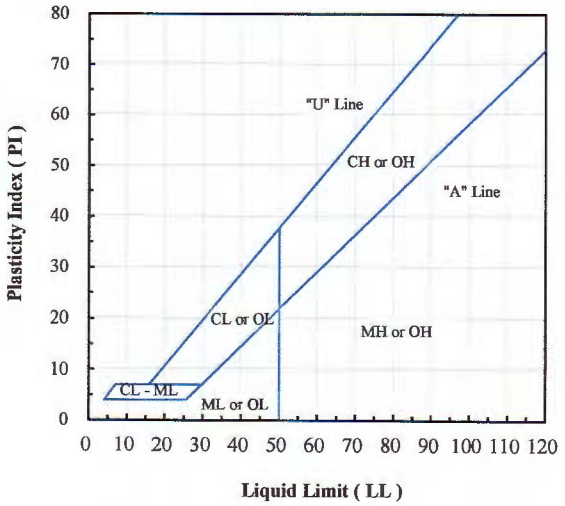
Sieve No.	Size (mm)	% Finer
3"	75	100.0
2"	50	100.0
1.5"	37.5	100.0
1"	25	100.0
3/4"	19	100.0
3/8"	9.5	92.2
#4	4.75	82.9
#10	2.00	71.5
#20	0.850	52.4
#40	0.425	34.1
#60	0.250	23.5
#100	0.150	16.5
#200	0.075	11.2

Specific Gravity (-):	

Hydrometer Particle Diameter (mm)	% Finer

Gravel (%):	17.1
Sand (%):	71.7
Fines (%):	11.2
Silt (%):	
Clay (%):	

Coeff. Unif. (Cu):	
Coeff. Curv. (Cc):	



Client Sample ID.	Lab Sample No:	Moisture Content (%)	Fines Content < No. 200 (%)	Atterberg Limits LL (-)	PL (-)	PI (-)	Engineering Classification
GP-3-4	12G055	4.6	11.2				

Note(s):

7-22-12 NSR

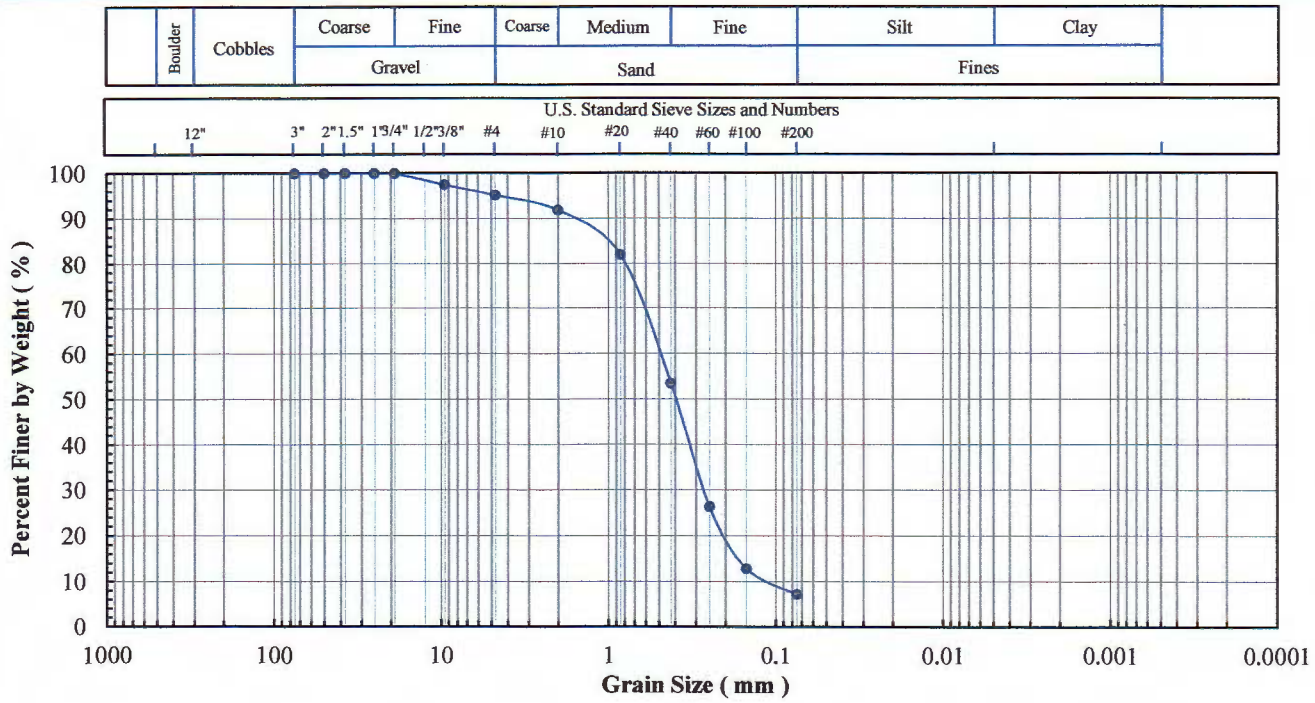
Excel Geotechnical Testing, Inc.
"Excellence in Testing"
953 Forrest Street, Roswell, Georgia 30075
Tel: (770) 910 7537 Fax: (770) 910 7538

Project Name:	LA Water Wheel Project
Project No:	559
Client Sample ID:	GP-4-5
Lab Sample No:	12G056

ASTM C 136, D 422, D 854, D 1140, D2216, D 2487, D4318

SOIL INDEX PROPERTIES

Grain Size, Spec. Gravity, Moist. Content, Eng. Classification, Atterberg Limits



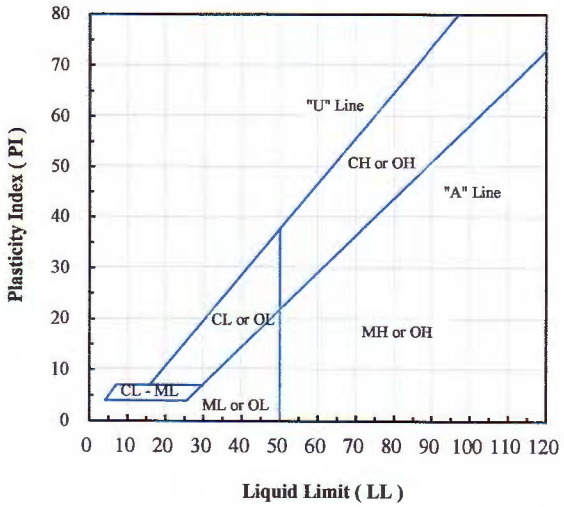
Sieve No.	Size (mm)	% Finer
3"	75	100.0
2"	50	100.0
1.5"	37.5	100.0
1"	25	100.0
3/4"	19	100.0
3/8"	9.5	97.5
#4	4.75	95.2
#10	2.00	91.9
#20	0.850	82.0
#40	0.425	53.5
#60	0.250	26.3
#100	0.150	12.9
#200	0.075	7.2

Specific Gravity (-):	

Hydrometer Particle Diameter (mm)	% Finer

Gravel (%):	4.8
Sand (%):	88.0
Fines (%):	7.2
Silt (%):	
Clay (%):	

Coeff. Unif. (Cu):	
Coeff. Curv. (Cc):	



Client Sample ID.	Lab Sample No:	Moisture Content (%)	Fines Content < No. 200 (%)	Atterberg Limits LL (-)	PL (-)	PI (-)	Engineering Classification
GP-4-5	12G056	4.9	7.2				

Note(s):

7-22-12 NSR

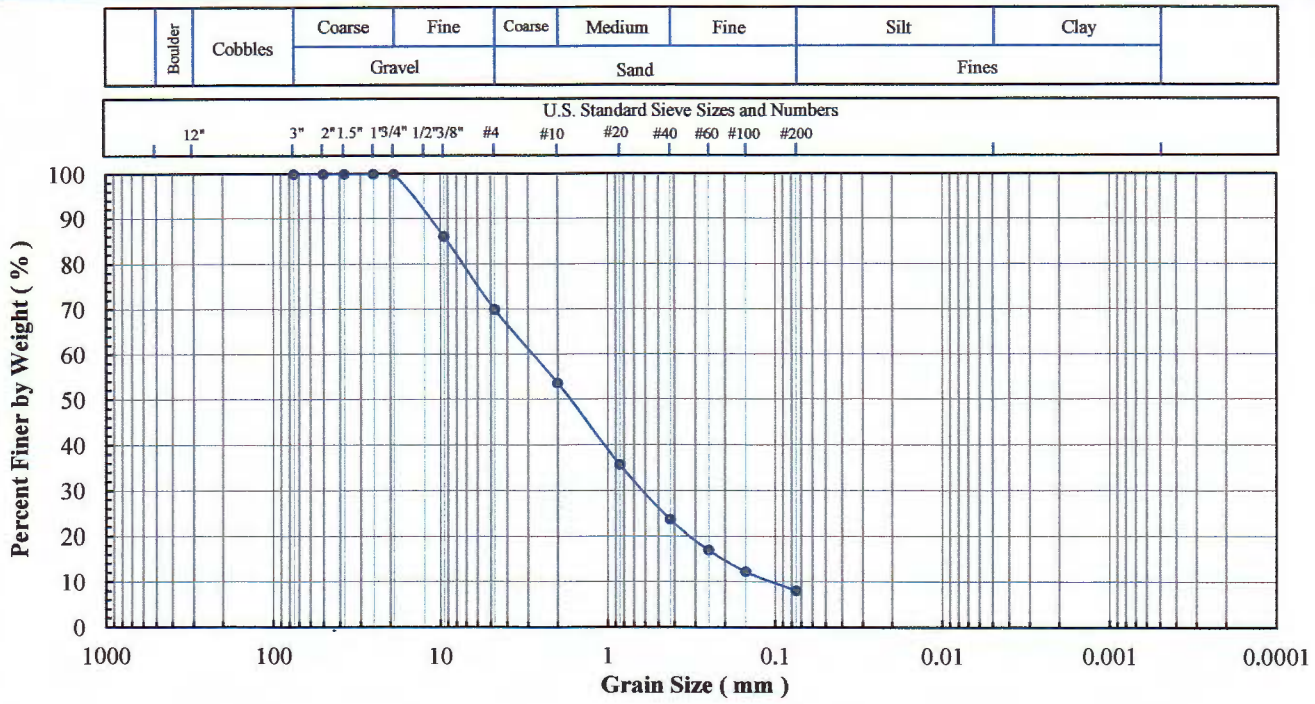
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"Excellence in Testing"
953 Forrest Street, Roswell, Georgia 30075
Tel: (770) 910 7537 Fax: (770) 910 7538

Project Name:	LA Water Wheel Project
Project No:	559
Client Sample ID:	GP-4-7
Lab Sample No:	12G057

ASTM C 136, D 422, D 854, D 1140, D2216, D 2487, D4318

SOIL INDEX PROPERTIES

Grain Size, Spec. Gravity, Moist. Content, Eng. Classification, Atterberg Limits



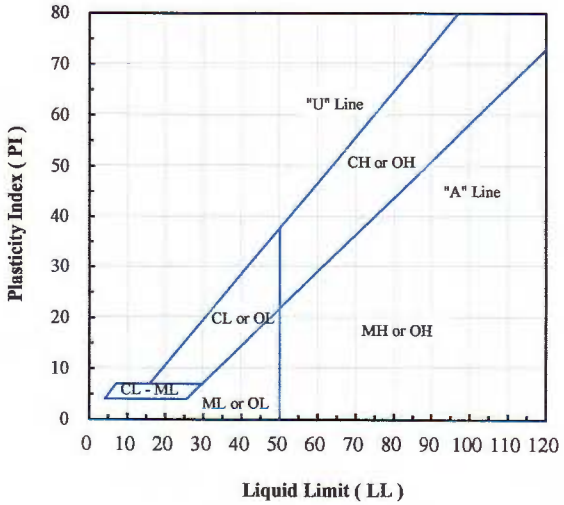
Sieve No.	Size (mm)	% Finer
3"	75	100.0
2"	50	100.0
1.5"	37.5	100.0
1"	25	100.0
3/4"	19	100.0
3/8"	9.5	86.0
#4	4.75	70.0
#10	2.00	53.6
#20	0.850	35.7
#40	0.425	23.6
#60	0.250	17.0
#100	0.150	12.2
#200	0.075	8.1

Specific Gravity (-):	

Hydrometer Particle Diameter (mm)	% Finer

Gravel (%):	30.0
Sand (%):	61.9
Fines (%):	8.1
Silt (%):	
Clay (%):	

Coeff. Unif. (Cu):	
Coeff. Curv. (Cc):	



Client Sample ID.	Lab Sample No:	Moisture Content (%)	Fines Content < No. 200 (%)	Atterberg Limits LL (-)	Atterberg Limits PL (-)	Atterberg Limits PI (-)	Engineering Classification
GP-4-7	12G057	3.5	8.1				

Note(s):

7-22-12 NSK

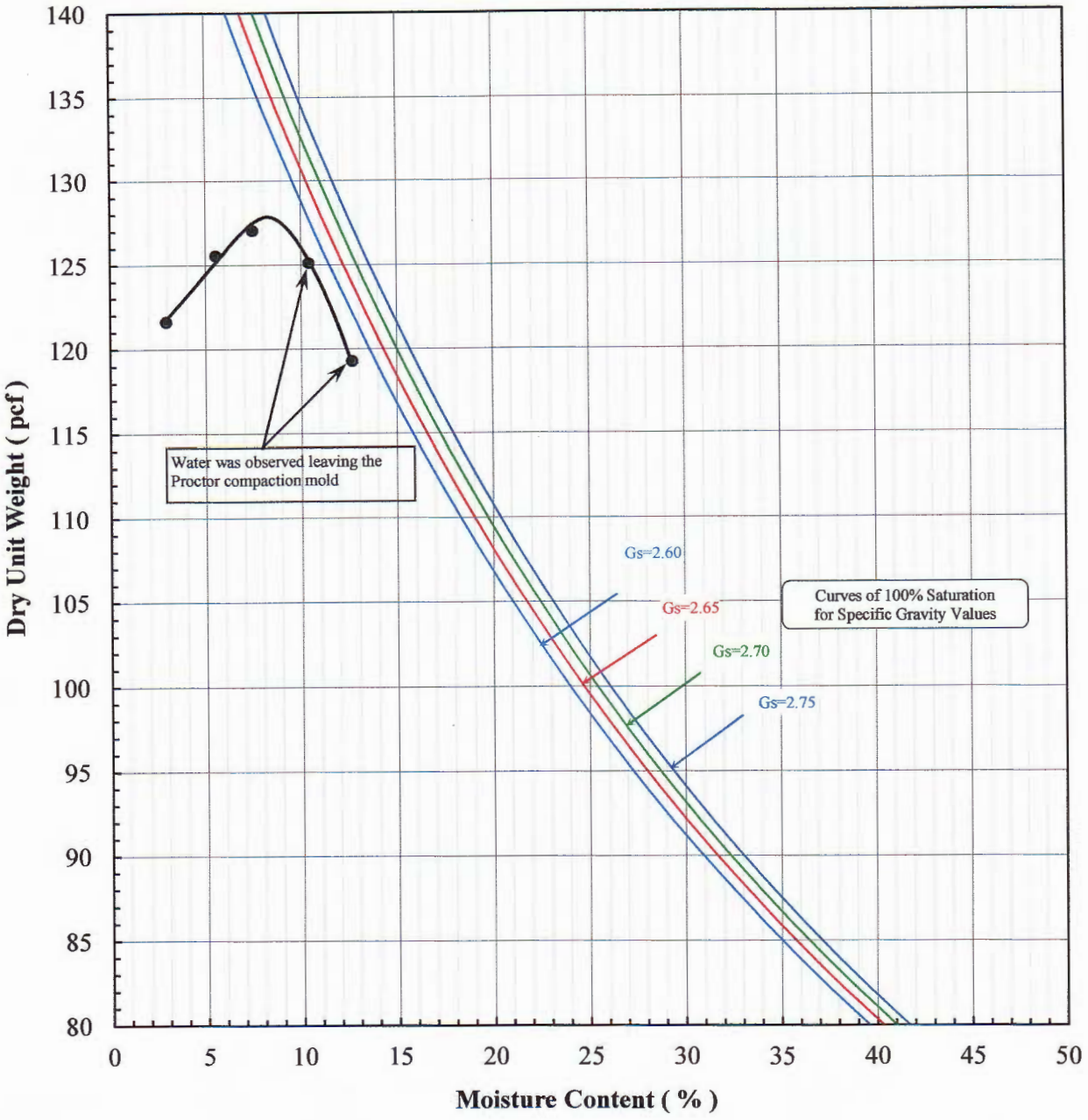
Excel Geotechnical Testing, Inc.
"Excellence in Testing"
953 Forrest Street, Roswell, Georgia 30075
Tel: (770) 910 7537 Fax: (770) 910 7538

Project Name:	LA Water wheel Project
Project No:	559
Client Sample ID:	B-2-1
Lab Sample No:	12G051

ASTM D 1557 - Method B

MODIFIED PROCTOR COMPACTION

Moist Preparation



Client/Site Sample ID.	Lab Sample No:	Maximum Dry Unit Weight (pcf)	Optimum Moist. Content (%)	Visiual Soil Description (%)
B-2-1	12G051	128.0	8.3	Tan, Brown Gravelly Sand

Note(s): Unless coarse correction is required, all particles passed through 1.0 in. Sieve were used.

From the bucket received, 28 particles larger than 1.0 in., but smaller than 1.5 in., were discarded.

7-22-12
NSK

Leighton

TESTS for SULFATE CONTENT
CHLORIDE CONTENT and pH of SOILS

Project Name: LA Water Wheel Tested By : GB/VJ Date: 08/23/12

Project No. : LA0257-03 Data Input By: J. Ward Date: 08/30/12

Boring No.	N/A	N/A		
Sample No.	B-1-4	B-1-7		
Sample Depth (ft)	15-16.5	30-31.5		
Soil Identification:	Olive brown (SP-SM)g	Olive s(ML)		
Wet Weight of Soil + Container (g)	128.40	123.66		
Dry Weight of Soil + Container (g)	126.78	115.48		
Weight of Container (g)	68.56	57.80		
Moisture Content (%)	2.78	14.18		
Weight of Soaked Soil (g)	100.15	100.03		

SULFATE CONTENT, DOT California Test 417, Part II

Beaker No.	18	8		
Crucible No.	29	30		
Furnace Temperature (°C)	830	830		
Time In / Time Out	10:15/11:00	10:15/11:00		
Duration of Combustion (min)	45	45		
Wt. of Crucible + Residue (g)	20.7498	21.5750		
Wt. of Crucible (g)	20.7417	21.5731		
Wt. of Residue (g) (A)	0.0081	0.0019		
PPM of Sulfate (A) x 41150	333.31	78.18		
PPM of Sulfate, Dry Weight Basis	**343**	**91**		

CHLORIDE CONTENT, DOT California Test 422

ml of Extract For Titration (B)	30	30		
ml of AgNO3 Soln. Used in Titration (C)	1.1	1.2		
PPM of Chloride (C -0.2) * 100 * 30 / B	90	100		
PPM of Chloride, Dry Wt. Basis	**93**	**117**		

pH TEST, DOT California Test 532/643

pH Value	**8.02**	**8.04**		
Temperature °C	21.1	21.2		

Leighton

TESTS for SULFATE CONTENT
CHLORIDE CONTENT and pH of SOILS

Project Name: LA Water Wheel Tested By : GB/VJ Date: 12/26/12

Project No. : LA0257-03 Data Input By: J. Ward Date: 12/28/12

Location	Gravel/Sand Fill			
Sample No.	B-5-1			
Sample Depth (ft)	1.5-5.0			
Soil Identification:	Olive (SW-SM)g			
Wet Weight of Soil + Container (g)	255.52			
Dry Weight of Soil + Container (g)	250.93			
Weight of Container (g)	57.55			
Moisture Content (%)	2.37			
Weight of Soaked Soil (g)	100.19			

SULFATE CONTENT, DOT California Test 417, Part II

Beaker No.	33			
Crucible No.	30			
Furnace Temperature (°C)	830			
Time In / Time Out	7:20/8:05			
Duration of Combustion (min)	45			
Wt. of Crucible + Residue (g)	21.5767			
Wt. of Crucible (g)	21.5757			
Wt. of Residue (g) (A)	0.0010			
PPM of Sulfate (A) x 41150	41.15			
PPM of Sulfate, Dry Weight Basis	**42**			

CHLORIDE CONTENT, DOT California Test 422

ml of Extract For Titration (B)	30			
ml of AgNO3 Soln. Used in Titration (C)	0.5			
PPM of Chloride (C -0.2) * 100 * 30 / B	30			
PPM of Chloride, Dry Wt. Basis	**31**			

pH TEST, DOT California Test 532/643

pH Value	**8.68**			
Temperature °C	21.0			

Leighton

SOIL RESISTIVITY TEST

DOT CA TEST 532 / 643

Project Name:	LA Water Wheel		Tested By :	V. Juliano	Date: 08/29/12
Project No. :	LA0257-03		Data Input By:	J. Ward	Date: 08/30/12
Boring No.:	N/A		Depth (ft.) :	15-16.5	
Sample No. :	B-1-4				

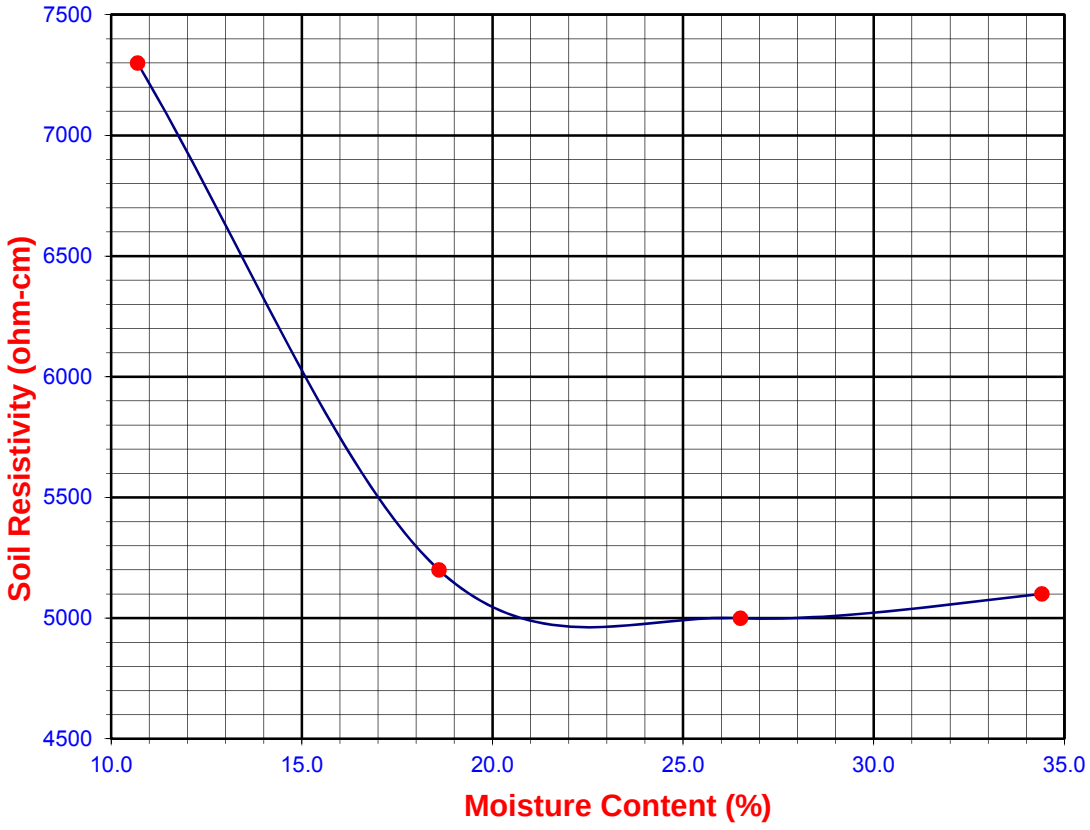
Soil Identification:* Olive brown (SP-SM)g

*California Test 643 requires soil specimens to consist only of portions of samples passing through the No. 8 US Standard Sieve before resistivity testing. Therefore, this test method may not be representative for coarser materials.

Specimen No.	Water Added (ml) (Wa)	Adjusted Moisture Content (MC)	Resistance Reading (ohm)	Soil Resistivity (ohm-cm)
1	10	10.69	7300	7300
2	20	18.60	5200	5200
3	30	26.50	5000	5000
4	40	34.41	5100	5100
5				

Moisture Content (%) (MCi)	2.78
Wet Wt. of Soil + Cont. (g)	128.40
Dry Wt. of Soil + Cont. (g)	126.78
Wt. of Container (g)	68.56
Container No.	
Initial Soil Wt. (g) (Wt)	130.00
Box Constant	1.000
MC =(((1+Mci/100)x(Wa/Wt+1))-1)x100	

Min. Resistivity (ohm-cm)	Moisture Content (%)	Sulfate Content (ppm)	Chloride Content (ppm)	Soil pH	
				pH	Temp. (°C)
DOT CA Test 532 / 643		DOT CA Test 417 Part II	DOT CA Test 422	DOT CA Test 532 / 643	
4960	**22.6**	**343**	**93**	**8.02**	**21.1**



Leighton

SOIL RESISTIVITY TEST

DOT CA TEST 532 / 643

Project Name:	LA Water Wheel		Tested By :	V. Juliano	Date: 08/29/12
Project No. :	LA0257-03		Data Input By:	J. Ward	Date: 08/30/12
Boring No.:	N/A		Depth (ft.) :	30-31.5	
Sample No. :	B-1-7				

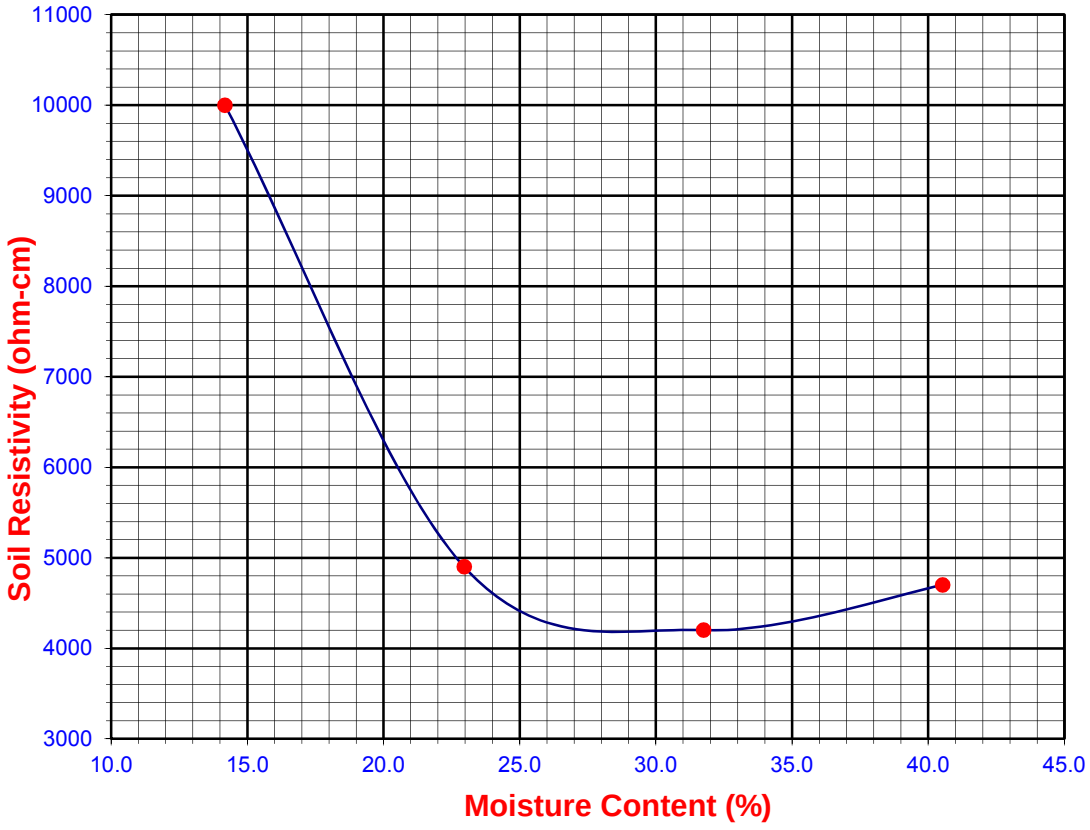
Soil Identification:* Olive s(ML)

*California Test 643 requires soil specimens to consist only of portions of samples passing through the No. 8 US Standard Sieve before resistivity testing. Therefore, this test method may not be representative for coarser materials.

Specimen No.	Water Added (ml) (Wa)	Adjusted Moisture Content (MC)	Resistance Reading (ohm)	Soil Resistivity (ohm-cm)
1	0	14.18	10000	10000
2	10	22.96	4900	4900
3	20	31.75	4200	4200
4	30	40.53	4700	4700
5				

Moisture Content (%) (MCi)	14.18
Wet Wt. of Soil + Cont. (g)	123.66
Dry Wt. of Soil + Cont. (g)	115.48
Wt. of Container (g)	57.80
Container No.	
Initial Soil Wt. (g) (Wt)	130.00
Box Constant	1.000
MC =(((1+Mci/100)x(Wa/Wt+1))-1)x100	

Min. Resistivity (ohm-cm)	Moisture Content (%)	Sulfate Content (ppm)	Chloride Content (ppm)	Soil pH	
				pH	Temp. (°C)
DOT CA Test 532 / 643		DOT CA Test 417 Part II	DOT CA Test 422	DOT CA Test 532 / 643	
4175	**28.7**	**91**	**117**	**8.04**	**21.2**



Leighton

SOIL RESISTIVITY TEST

DOT CA TEST 532 / 643

Project Name:	LA Water Wheel		Tested By :	GB/VJ	Date: 12/26/12
Project No. :	LA0257-03		Data Input By:	J. Ward	Date: 12/28/12
Location:	Gravel/Sand Fill		Depth (ft.) :	1.5-5.0	
Sample No. :	B-5-1				

Soil Identification:* Olive (SW-SM)g

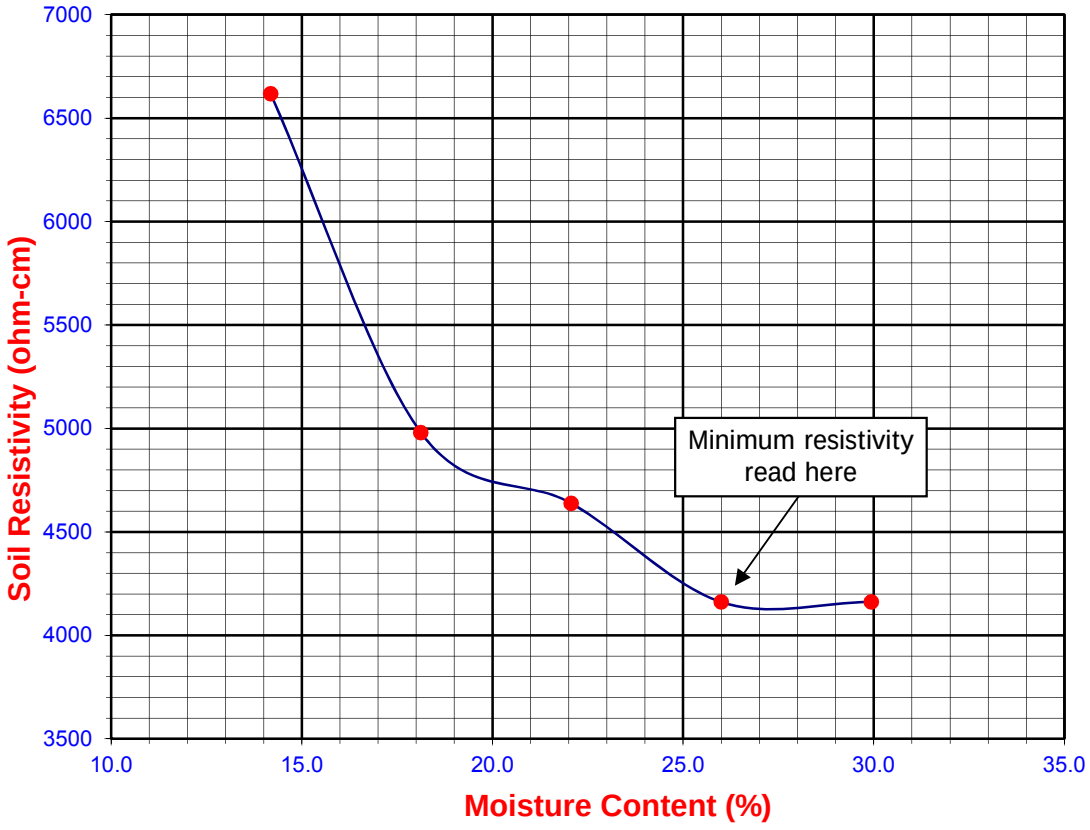
*California Test 643 requires soil specimens to consist only of portions of samples passing through the No. 8 US Standard Sieve before resistivity testing. Therefore, this test method may not be representative for coarser materials.

Specimen No.	Water Added (ml) (Wa)	Adjusted Moisture Content (MC)	Resistance Reading (ohm)	Soil Resistivity (ohm-cm)
1	150	14.19	970	6617
2	200	18.12	730	4980
3	250	22.06	680	4639
4	300	26.00	610	4161
5	350	29.94	610	4161

Moisture Content (%) (MCi)	2.37
Wet Wt. of Soil + Cont. (g)	255.52
Dry Wt. of Soil + Cont. (g)	250.93
Wt. of Container (g)	57.55
Container No.	
Initial Soil Wt. (g) (Wt)	1300.00
Box Constant	6.822
MC =(((1+Mci/100)x(Wa/Wt+1))-1)x100	

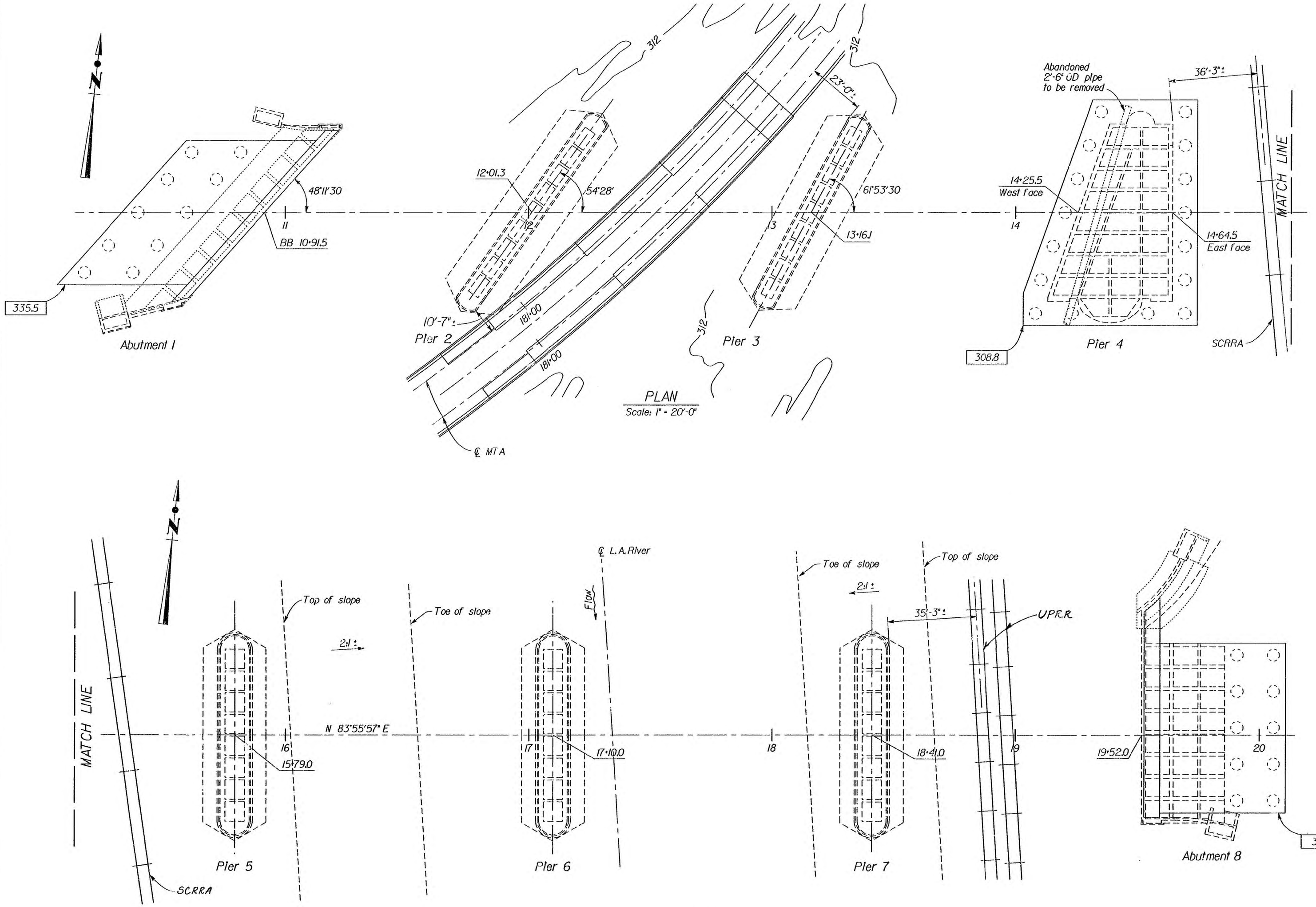
Note: Soil reached slurry condition without increase in resistivity

Min. Resistivity (ohm-cm)	Moisture Content (%)	Sulfate Content (ppm)	Chloride Content (ppm)	Soil pH	
				pH	Temp. (°C)
DOT CA Test 532 / 643		DOT CA Test 417 Part II	DOT CA Test 422	DOT CA Test 532 / 643	
4161	**26.0**	**42**	**31**	**8.68**	**21.0**



APPENDIX D

N. BROADWAY BRIDGE FOUNDATION DESIGNS



NOTE:
The Contractor shall verify all controlling field dimensions before ordering or fabricating any material

DESIGNED Private Engineer
DRAWN "
CHECKED
SUPERVISED
PROJECT ENGR. R.E. NO. SE36672
ASST. DIV./DIST. ENGR. R.E. NO. SE18499

DATE 4/95 4/95 5-96 5-96 5/96 7/96

NO. | REVISION DESCRIPTION | DIV./DIST. ENGR. | L.I.T.E.

FOUNDATION PLAN

BUREAU OF ENGINEERING OFFICIAL RECORD

REGISTERED PROFESSIONAL ENGINEER JOHN COLLINS EDDY No. C044706 Exp. 12-31-96 CIVIL STATE OF CALIFORNIA

DE LEUW, CATHER
PARSONS TRANSPORTATION GROUP
199 South Los Robles
Suite 740
Pasadena, California 91101
(818) 585-6250

CITY OF LOS ANGELES
ROBERT S. HORII
CITY ENGINEER

DATE 7-2 1996
DIV./DIST. ENGR. R.E. NO. SE18499

NORTH BROADWAY VIADUCT OVER THE LOS ANGELES RIVER SEISMIC RETROFIT W.O. E6000378 S-32

SCALES	HORIZ. 1" = AS SHOWN	SHEET 2 OF 54 SHEETS	INDEX NUMBER D-31238
	VERT. 1" = AS SHOWN		

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r:\bridge
r:\bridge [1-128]
r:\bridge

℄ CIDH Pile

℄ Bridge

46'-9"

46'-9"

3 Equal Spaces = 41'-9"

3 Equal Spaces = 41'-9"

9" Typ

#11 ⌈, Tot 11 Top & Bot mat

#11 Drill and grout @ 18 In 6'-0" deep hole Bottom mat, four faces of Pier Mechanical splice or butt weld (optional), Typ

Lap splice optional, stagger splices

Const jt optional

Contractors option to drill through full thickness of wall or use mechanical or butt weld splice to allow for placement of #11

D S-42

5'ø CIDH Pile, Tot 16 see "ABUTMENT 8 DETAILS" sheet

#6 ⌈ @ 9 EW

#11, Tot 11 Top & Bot mat

#8 ⌊ @ 12 EW bot mat, Typ 4 corners of pier

1'-6"

"b" bars

"a" bars

℄ CIDH Pile

5'-0"

10'-0"

East face of Pier 4

B S-41

A S-41

#11, Top mat

#11, Bot mat

Inside face of periphery wall

10'-0"

Fill existing opening in wall

3'-0"

"a" bars

"b" bars

West face of Pier 4

5'-0"

℄ CIDH Pile

5'-0"

1

-

2

-

3

-

2'-6"

#6 ⌈ Drill & grout

#11 @ 18 Top mat Four faces of pier

#8, Tot 4 Top & Bot mat

31'-5"

61'-5"

1'-0"

Inside face of periphery wall

#6 ⌈ Drill and grout

11'-6"

Const jt optional

#11, Top mat

2 Equal Spaces = 29'-6"

#11, Bot mat

12" OD water pipe

#11 @ 18 Top mat

1'-0"

15'-0"

Lap splice optional, stagger splices, typ

2 Equal Spaces = 29'-6"

#8, Tot 1 Top & Bot mat

#11, Tot 11 Top & Bot mat

℄ CIDH Pile

C S-42

#11, Tot II Top & Bot mat

PLAN

Scale: 3/16" = 1'-0"
(Below Springing Line)

#8 ⌊ @ 12 Bot mat

1'-0"

#5 @ 18 Top & Bot mat

DETAIL 1

Scale: 3/16" = 1'-0"

#5 @ 18 Top & Bot mat

1'-0"

#8 ⌊ @ 12 Bot mat

DETAIL 2

Scale: 3/16" = 1'-0"

#5 @ 18 1'-0" Top & Bot mat of footing

#8 ⌊ @ 12 Bot mat

DETAIL 3

Scale: 3/16" = 1'-0"

NOTE:

The Contractor shall verify all controlling field dimensions before ordering or fabricating any material

NOTES:

1. Pressure grout reinforcement in drilled holes through existing periphery walls before placing concrete.
2. For dimensions not shown, see "PIER 4 DEMOLITION" sheet.

REGISTERED PROFESSIONAL ENGINEER JOHN COLLINS HORII No. C 20995 8-31-98 CIVIL STATE OF CALIFORNIA

BUREAU OF ENGINEERING CITY OF LOS ANGELES OFFICIAL RECORD

DATE		
	DESIGNED	Private Engineer
	DRAWN	"
	CHECKED	"
	SUPERVISED	
	PROJECT ENGR.	
	ASST. DIV./DIST. ENGR.	

NO	REVISION DESCRIPTION	DATE	DIV./DIST. ENGR.
		4/95	
		4/95	
		5-96	
		5-96	
	R.E. NO. SE3622	5/96	
	R.E. NO. S1579	7/96	

PIER 4 NO. 1

CITY OF LOS ANGELES
ROBERT S. HORII
CITY ENGINEER

DATE 7-9-96 19

DIV./DIST. ENGR. R.E. NO. 51579

SYE LEUW, CATHER
PARSONS TRANSPORTATION GROUP
195 South Los Robles
Suite 740
Pasadena, California 91101
(818) 585-6200

NORTH BROADWAY VIADUCT OVER THE LOS ANGELES RIVER SEISMIC RETROFIT

W.O. E6000378

S-39

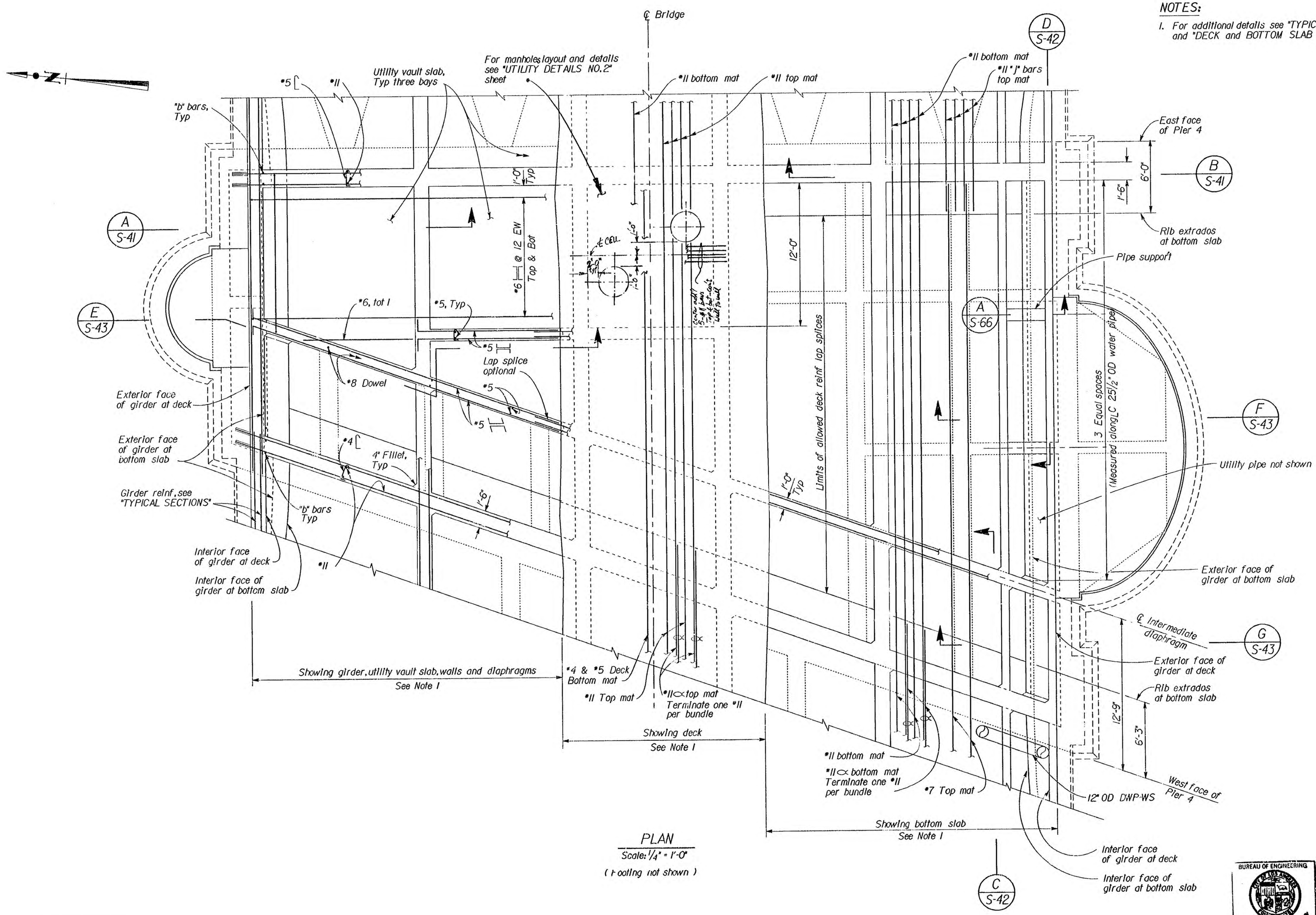
SCALES HORIZ. 1" = AS SHOWN VERT. 1" = AS SHOWN

SHEET 9 OF 54 SHEETS

INDEX NUMBER D-31238

NOTES:

1. For additional details see "TYPICAL SECTION NO.1 and NO.2" and "DECK and BOTTOM SLAB REINFORCEMENT DETAILS" sheets.



PLAN

Scale: 1/4" = 1'-0"

(Footing not shown)

NOTE:

The Contractor shall verify all controlling field dimensions before ordering or fabricating any material

DATE	REVISION DESCRIPTION	NO.
5/95		
4/95		
5-96		
5-96		
5/96		
7/96		

DESIGNED: Private Engineer
DRAWN
CHECKED
SUPERVISED
PROJECT ENGR.
ASST.DIV./DIST.ENGR.
R.E. NO. 36222
R.E. NO. 51579

DIV DIST ENGR. DATE

PIER 4 NO. 2

CITY OF LOS ANGELES
ROBERT S. HORII
CITY ENGINEER

DATE 7-9- 19 96

DIV./DIST.ENGR. R.E. NO. 51584

DE LEUW, CATHER
PARSONS TRANSPORTATION GROUP
199 South Los Robles
Suite 400
Pasadena, California 91101
(818) 585-6200

BUREAU OF ENGINEERING
OFFICIAL RECORD

REGISTERED CIVIL ENGINEER
3-31-98
STATE OF CALIFORNIA

NORTH BROADWAY VIADUCT OVER THE LOS ANGELES RIVER SEISMIC RETROFIT W.O. E6000378

S-40

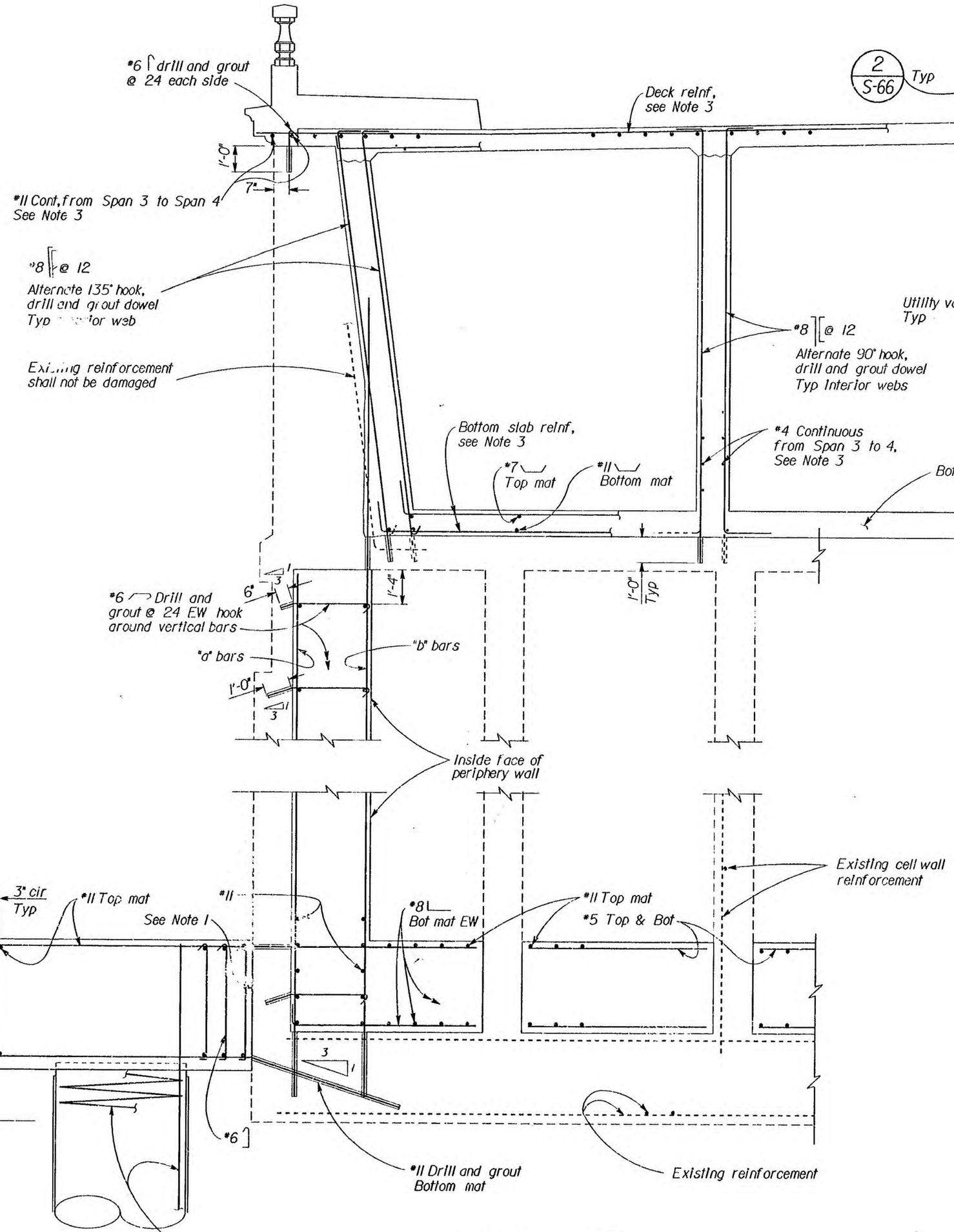
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SHEET 10 OF 54 SHEETS

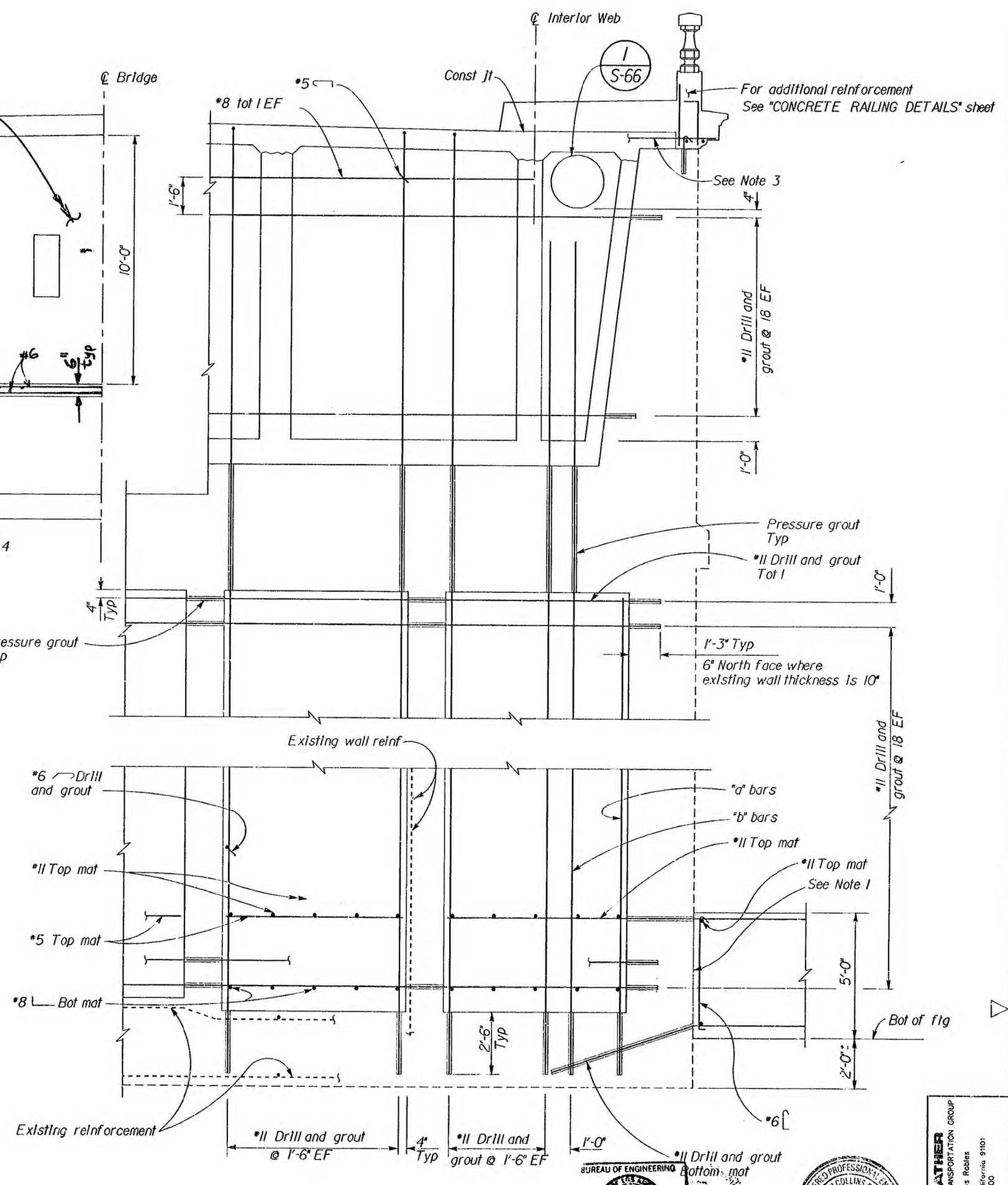
INDEX NUMBER D-31238

NOTES:

1. Existing concrete surface to be in contact with new concrete shall be roughened to 1/4" amplitude. Surface after roughening shall expose the aggregate and be clean and free of all laitance.
2. Pressure grout reinforcement in horizontal drilled holes prior to placing concrete.
3. For additional details see "TYPICAL SECTIONS NO.1 and NO.2" sheets
4. Contractors option to use lap splices, mechanical connector or butt weld to allow placement of reinforcement.



SECTION A S-39 S-40
Scale: 3/8" = 1'-0"



SECTION B S-39 S-40
Scale: 3/8" = 1'-0"
(West face similar)

NOTE:
The Contractor shall verify all controlling field dimensions before ordering or fabricating any material

BUREAU OF ENGINEERING CITY OF LOS ANGELES FOUNDED 1911 OFFICIAL RECORD

REGISTERED PROFESSIONAL ENGINEER JOHN COLLINS EDDY No C 20116 12-31-98 STATE OF CALIFORNIA

DE LEUW, CATHER
PARSONS TRANSPORTATION GROUP
155 South Los Robles
Suite 740
Pasadena, California 91101
(818) 585-6200

NORTH BROADWAY VIADUCT OVER THE LOS ANGELES RIVER SEISMIC RETROFIT W.O. E6000378 S-41

SCALES: HORIZ. 1" = AS SHOWN; VERT. 1" = AS SHOWN
SHEET 11 OF 54 SHEETS
INDEX NUMBER D-31238

DATE		
4/95		
4/95		
5-96		
5/96	R.E. NO. SE 36122	
7/96	R.E. NO. S-5479	

DESIGNED — Private Engineer
DRAWN
CHECKED
SUPERVISED
PROJECT ENGR.
ASST.DIV./DIST.ENGR.

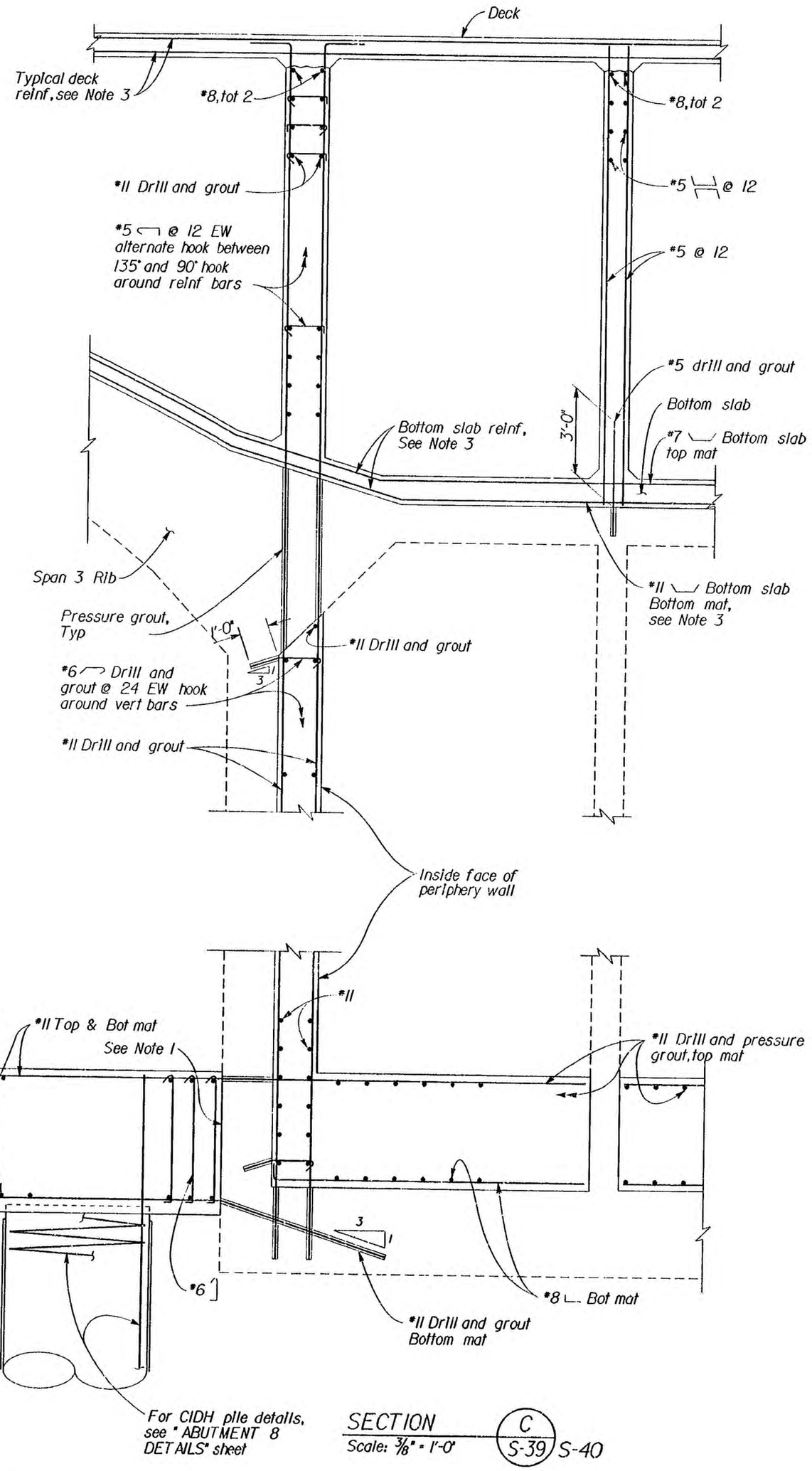
PIER 4 NO. 3

NO.	REVISION DESCRIPTION	DIV./DIST. ENGR.	DATE

CITY OF LOS ANGELES
ROBERT S. HORII
CITY ENGINEER

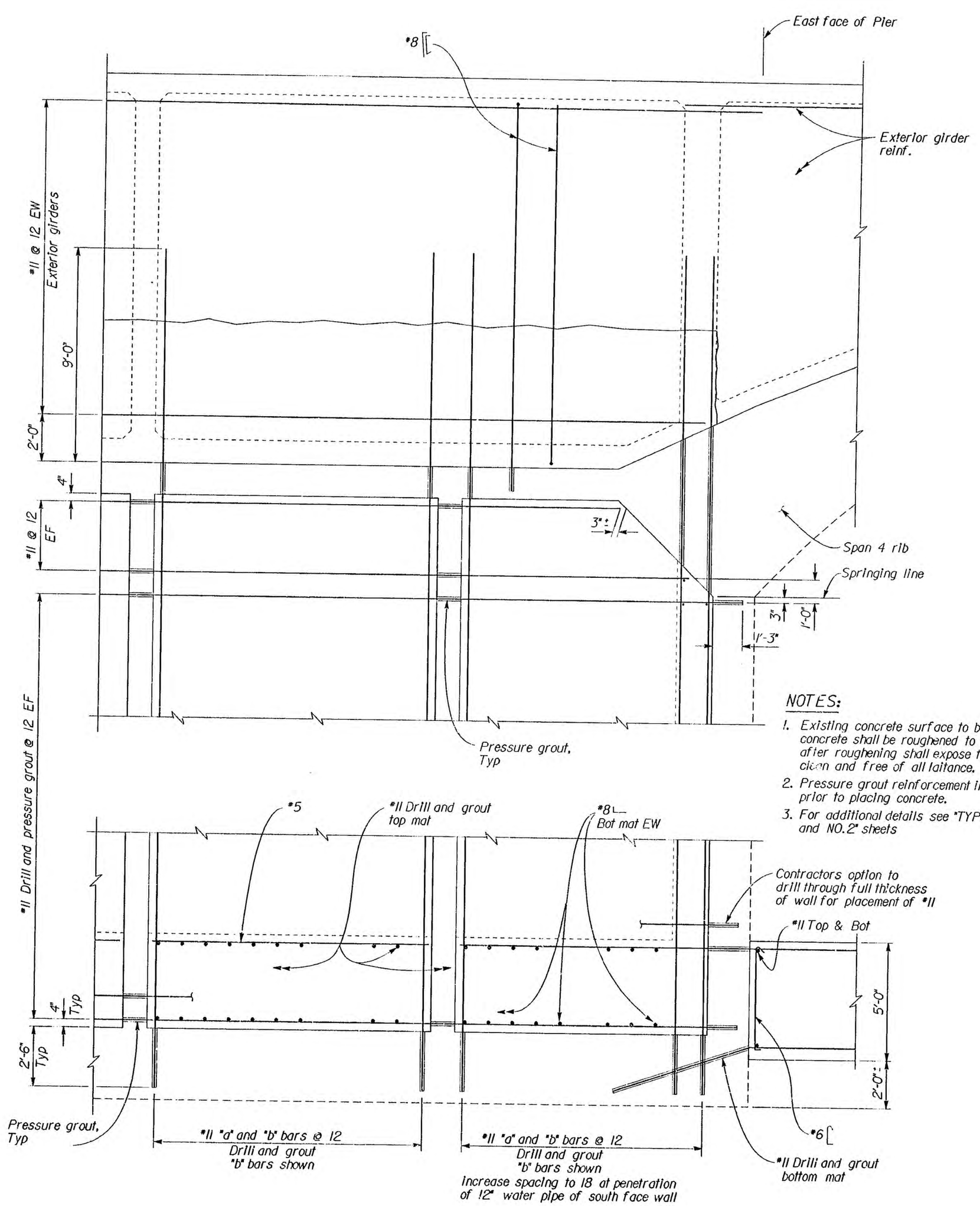
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DIV./DIST.ENGR. R.E. NO. SE 36122

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r:\draw (64, 128)



SECTION C Scale: 3/8" = 1'-0" S-39 S-40

NOTE:
The Contractor shall verify all controlling field dimensions before ordering or fabricating any material



NOTES:
1. Existing concrete surface to be in contact with new concrete shall be roughened to 1/4" amplitude. Surface after roughening shall expose the aggregate and be clean and free of all laitance.
2. Pressure grout reinforcement in horizontal drilled holes prior to placing concrete.
3. For additional details see "TYPICAL SECTIONS NO.1 and NO.2" sheets

SECTION D Scale: 3/8" = 1'-0" S-39 S-40

(Section taken at exterior girder, periphery north wall similar)

DESIGNED	Private Engineer	4/95
DRAWN	"	4/95
CHECKED	Earl Hasselbrink	5/96
SUPERVISED	Earl Hasselbrink	5/96
PROJECT ENGR.	Chin Bor	5/96
ASST. DIV./DIST. ENGR.	Dallang	7/96

PIER 4 NO. 4

NO.	REVISION DESCRIPTION	DATE

DIV./DIST. ENGR.

CITY OF LOS ANGELES
ROBERT S. HORII
CITY ENGINEER

DATE 7-7- 1996
Mark W. Robins
DIV./DIST. ENGR. R.E. NO. SE8845

DE LEUW, CATHER
PARSONS TRANSPORTATION GROUP
195 South Los Robles
Suite 740
Pasadena, California 91101
(818) 568-6200

BUREAU OF ENGINEERING
OFFICIAL RECORD

REGISTERED PROFESSIONAL ENGINEER
JOHN COLLINS EDWARDS
No. C041705
Exp. 3-31-99
CIVIL
STATE OF CALIFORNIA

NORTH BROADWAY VIADUCT OVER THE LOS ANGELES RIVER SEISMIC RETROFIT W.O. E6000378

S-42

SCALES	HORIZ. 1" = AS SHOWN
	VERT. 1" = AS SHOWN

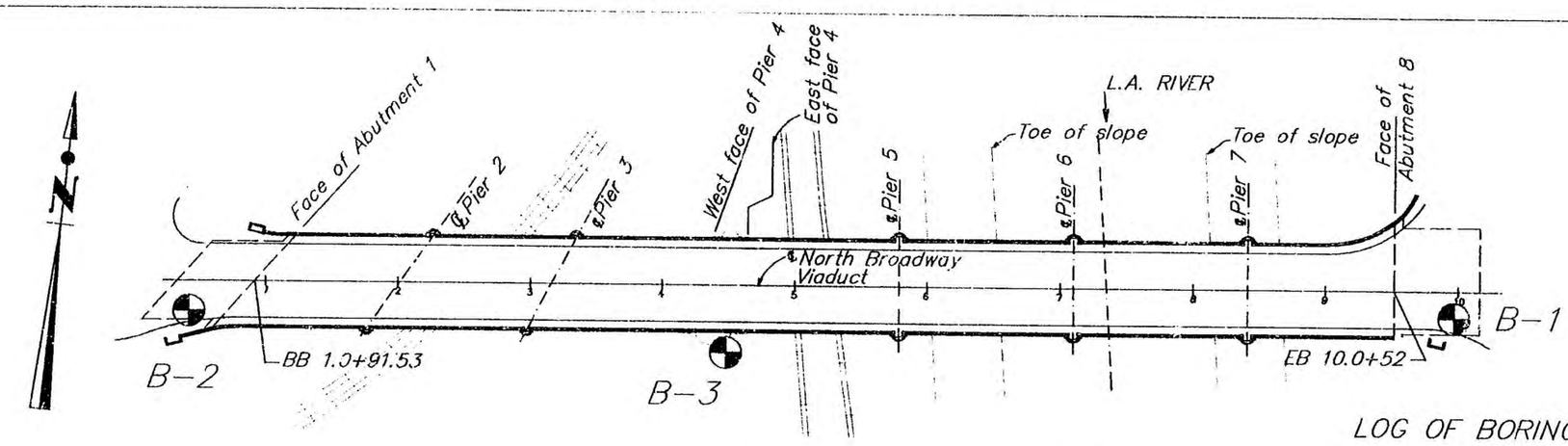
SHEET 12 OF 54 SHEETS

INDEX NUMBER D-31238

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r:\brsm [64, 128]
r:\brsm

APPENDIX E

N. BROADWAY BRIDGE BORING LOGS



PLAN

Scale: 1" =80'

LOG OF BORING B-2

Project Name: NORTH BROADWAY BRIDGE/PDL

Project Number: 0043-0128 | Borehole Number: B-2

Borehole Location: WEST ABUTMENT-1 | Elevation and Datum: 348.0 ft Mean Sea Level:

Borehole Coordinates: | Date Started: 11/13/94 | Date Finished: 11/13/94

Drilling Equipment: BK-81 | Total Depth(feet): 45.00 | Depth to Groundwater(feet): n/a

Drilling Method: Hollow Stem Auger | Borehole Diameter: 8 inches

Driller: AGE | Monitoring Well Total Depth(feet): n/a

Hammer Information: 140-lb & 30-inch drop | Logged By: ALEX | Checked By: YCL

Elevation (feet)	Depth (feet)	Description	Lithology	USCS Classification	Sampler	Number	Blows/6"	Dry Density (pcf)	Moisture Content (%)	Liquid Limit (%)	Plastic Limit (%)	Additional Tests
349		ASPHALTIC CONCRETE OVER CONCRETE SLAB		AC								
343	5	FILL: SILTY SAND, brown, loose, slightly moist, fine grained, shale fragments		SM		S1	5					
		loose					4					
							4					
338	10	medium dense, moist, medium grained, some fine gravel				S2	9					
							9					
333	15	mixed brown, loose, traces of fine gravel				S3	9					
							6					
							5					
328	20	mixed brown, dense, with shale fragments				R4	5					
							11					
							13					
323	25	medium dense				S5	27					
							19					
							6					
318	30	brown, dense, moist, traces of gravel and clay, gravel at tip				S6	6					
							7					
							39/4"					
313	35	SANDSTONE (SS), buff to brown, very dense, fine to medium grained				S7	40					
							50/5"					
308	40					R8	50	108.1	12.1			>4 tsf
							85					2.6 tsf*
303	45	SHALE (SH), grayish black, laminated				S9	35					
							37					
							50/5"					

Boring terminated at 45 ft depth below ground surface.
Groundwater was not encountered during drilling.
Backfilled with soil cuttings and grout mix.
*: Unconfined compressive strength

LOG OF BORING B-3

Project Name: NORTH BROADWAY BRIDGE/PDL

Project Number: 0043-0128 | Borehole Number: B-3

Borehole Location: PIER 4-SOUTH | Elevation and Datum: 305.0 ft Mean Sea Level:

Borehole Coordinates: | Date Started: 11/13/94 | Date Finished: 11/13/94

Drilling Equipment: BK-81 | Total Depth(feet): 100.00 | Depth to Groundwater(feet): 39.0

Drilling Method: Hollow Stem Auger | Borehole Diameter: 8 inches

Driller: AGE | Monitoring Well Total Depth(feet): n/a

Hammer Information: 140-lb & 30-inch drop | Logged By: ALEX | Checked By: YCL

Elevation (feet)	Depth (feet)	Description	Lithology	USCS Classification	Sampler	Number	Blows/6"	Dry Density (pcf)	Moisture Content (%)	Liquid Limit (%)	Plastic Limit (%)	Acc.
		FILL: SILTY SAND WITH GRAVEL, light brown to tan, dense, dry, fine to medium grained		GM SM								
300	5					S1	29					
							27					
							20					
295	10	medium dense				S2	15					
							11					
							10					
290	15	very dense				S3	26					
							35					
							40					
285	20	very dense, some cobbles, no recovery				S4	50/5"					
280	25	NATIVE SOIL SAND (ALLUVIUM), grayish brown, dense, fine to medium grained, possible boulder		SP		S5	12					
							16					
		dark brown, very dense, moist, medium grained					20					
275	30	brown, clean, very dense, dry, medium grained				R6	55	111.6	8.9			>4 tsf
							45					
							85					
270	35	gray, clean, very dense, moist, medium grained, trace of gravel				S7	50/5"					
265	40	very dense, wet, trace of coarse sand and gravel				S8	13					
							21					
							40					
260	45	very dense				S9	50/5.5"					
255	50	SILTSTONE (SLST), blackish gray, dense, wet, laminated				S10	7					
							19					
							29					
250	55	SANDSTONE (SS), gray, very dense, wet, medium grained, cemented				R11	20	117.6	15.0			3 tsf
							80					
							100/3.5"					
		gray, medium dense, wet, friable										
245	60					S12	5*					
							7					
240	65	medium dense				S13	15					
							3*					
							8					
235	70	easy drilling					6					
230	75											
225	80											
220	85											
215	90	gray, very dense, fine to medium grained				S14	28					
							40					
							50					
210	95											
		gray, very dense, fine to medium grained, weak lamination				S15	19					
						S16	26					
205	100						50/3"					
							23					
							50/3"					

Boring terminated at 100 ft. below ground surface.
Groundwater was encountered at a depth of 39 ft.
Backfilled with soil cuttings.
*The low SPT blow counts may not be representative due to possible "boiling" effect within sandy materials during drilling

LOG OF BORING B-1

Project Name: NORTH BROADWAY BRIDGE/PDL

Project Number: 0043-0128 | Borehole Number: B-1

Borehole Location: EAST ABUTMENT-8 | Elevation and Datum: 341.0 ft Mean Sea Level:

Borehole Coordinates: | Date Started: 11/12/94 | Date Finished: 11/12/94

Drilling Equipment: BK-81 | Total Depth(feet): 120.00 | Depth to Groundwater(feet): 63.5

Drilling Method: Hollow Stem Auger | Borehole Diameter: 8 inches

Driller: AGE | Monitoring Well Total Depth(feet): n/a

Hammer Information: 140-lb & 30-inch drop | Logged By: ALEX | Checked By: YCL

Elevation (feet)	Depth (feet)	Description	Lithology	USCS Classification	Sampler	Number	Blows/6"	Dry Density (pcf)	Moisture Content (%)	Liquid Limit (%)	Plastic Limit (%)	Additional Tests
		ASPHALT CONCRETE PAVEMENT		AC								
		FILL: SILTY SAND, brown, dense, slightly moist, fine grained		SM								
339	5	dark brown				S1	29					
							19					
							16					
334	10	light brown, medium dense, traces of gravel				S2	17					
							12					
							9					
329	15	very dense, no recovery				S3	45					
							12					
							36					
324	20	FILL: SILTY SAND WITH GRAVEL, light brown, dense, slightly moist		GM SM		R4	20	114.3	2.0			
							20					
		dense					20					
319	25					S5	12					
							12					
							18					
314	30	with fine to coarse gravel, medium dense				S6	13					
		FILL: SILTY SAND, brown, medium dense, slightly moist, fine to medium grained, traces of gravel		SM			7					
							10					
309	35					S7	8					
							5					
							7					
		NATIVE SOIL: SILTY SAND WITH GRAVEL (ALLUVIUM), dark brown, very dense, moist		GM SM		R8	12	112.1	3.9			
304	40	very dense					30					
							50/4"					
299	45					S9	17					
							17					
							38					
294	50	very dense				S10	50/4"					
289	55	light brown to tan, very dense, dry, fine to medium grained				S11	31					
							50/5"					
284	60	very dense, fine to coarse grained				S12	50/4"					
279	65	wet, fine to medium grained		SP		S13	9					
		SAND, brown, very dense, wet, medium grained					28					
							30					
274	70	SILTY SAND WITH GRAVEL, dense, wet, medium grained		GM SM		S14	11					
							13					
		very dense					27					
269	75					S15	38					
							50/5"					
264	80	very dense				R16	19	122.5	11.6			
							20					
							50/3"					
259	85	SAND TO SILTY SAND, brown, very dense, wet, medium grained		SP SM		S17	10					
							35					
							50/4.5"					
254	90	loose				S18	3					
							3					
							3					
249	95	very dense, medium grained				S19	11					
							23					
							48					
244	100	medium dense				S20	4					
							7					
							13					
239	105	SANDSTONE (SS), brown, very dense, fine to medium grained				S21	106/6"					
234	110	medium dense, no recovery				R22	4					
							6					
							8					
229	115	brown, dense, wet, fine to medium grained				S23	14					
							18					
							22					
224	120	very dense, no sample recovery, hard drilling										

Boring terminated at 120 ft depth below ground surface.
Groundwater encountered at a depth of 63.5 ft.
backfilled with soil cuttings and grout mix.

LEGEND

- Existing Structure
- New Construction
- Hidden line - Existing
- Hidden line - New

Subsurface Boring (MAA Engineering Consultants, Inc., 1994)

BUREAU OF ENGINEERING
CITY OF LOS ANGELES
REGISTERED CIVIL ENGINEER
OFFICIAL RECORD

3/31/96

MAA ENGINEERING CONSULTANTS, INC.
3355 North Figueroa Street
Los Angeles, California 90065
(213) 550-0050 phone (213) 226-1530 fax

CITY OF LOS ANGELES
ROBERT S. HORII CITY ENGINEER
DATE 7-9- 19 96
DIV./DIST.ENGR. Clark W. Robins R. E. NO. 56184

NO.	REVISION DESCRIPTION	DIV./DIST. ENGR.	DATE

		DATE
DESIGNED	Private Engineer	4/95
DRAWN	Private Engineer	4/95
CHECKED	Gary Hassaltine	5-96
SUPERVISED	Gary Hassaltine	5-96
PROJECT ENGR.	Tim Ala	R. E. NO. 45362 5/96
ASST.DIV./DIST.ENGR.		R. E. NO. 51679 7/96

LOG OF TEST BORINGS

NORTH BROADWAY VIADUCT OVER THE LOS ANGELES RIVER SEISMIC RETROFIT W.O. E6000378 S-72

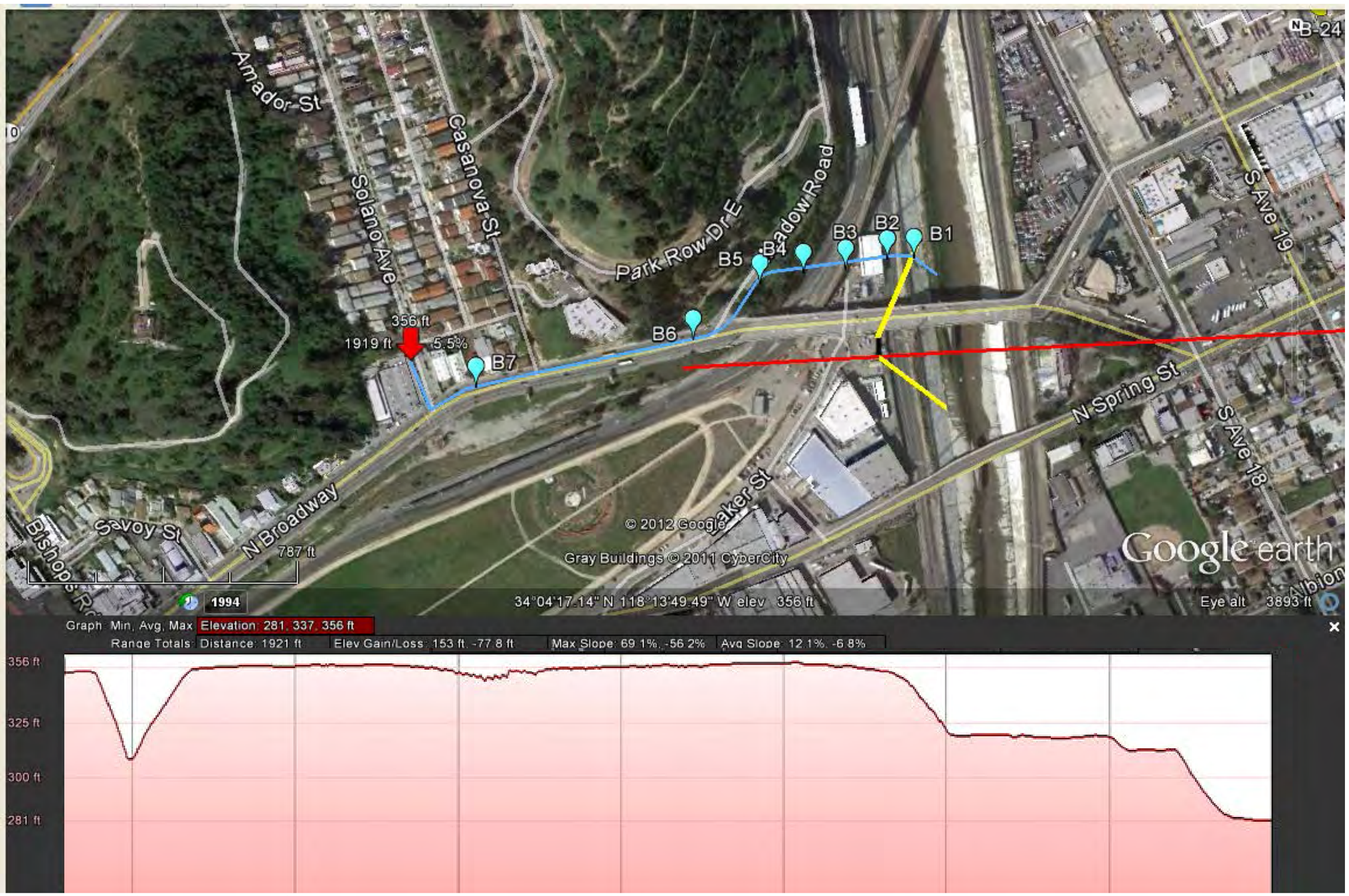
SCALES: HORIZ. 1" = AS SHOWN; VERT. 1" = AS SHOWN

SHEET 42 OF 54 SHEETS

INDEX NUMBER D-31238

APPENDIX F

SOLANO DRAIN BORING LOGS


Amador St
Solano Ave
Casanova St
Park Row Dr E
Badow Road
B1
B2
B3
B4
B5
B6
B7
356 ft
1919 ft
5.5%
N Spring St
S Ave 19
S Ave 18
N Broadway
Savoy St
787 ft
Baker St
© 2012 Google
Gray Buildings © 2011 CyberCity
Google earth
1994
34°04'17.14" N 118°13'49.49" W elev 356 ft
Eye alt 3893 ft
Graph: Min, Avg, Max Elevation: 281, 337, 356 ft
Range Totals: Distance: 1921 ft
Elev Gain/Loss: 153 ft, -77.8 ft
Max Slope: 69.1%, -56.2%
Avg Slope: 12.1%, -6.8%
356 ft
325 ft
300 ft
281 ft

250 ft

PROFILE
SCALES: HOR. 1" = 40'
VERT. 1" = 8'

NOTE
DOUBLE VERTICAL SCALE

Q10 = 480 cfs

Q10 = 398 cfs

Q10 = 383 cfs

Q10 = 369 cfs

BENCH MARK 12-B7669 ELEV. 348.647
Sak. in N. Curb N. Broadway, 15 Ft. W/o BCR W/O Eastern Rank Dr. and at NE Cor. CB

Exist Street Surface Along & Construction

Street Car Tracks, Remove Interfering Portions

Insert Existing 8"SS

24" W. Temporary Support for LADWP Sta Drive B-1151 and Support for Sta Drive B-1151 Cable 2

Cable (SL)

HGL

Outlet Structure

Cast Concrete Channel Wall 1'-3" Thick Last Placed 6'-0" Sprocks at Elevation Wire Sag Holes 3 Horizontal

Concrete Wall Retaining Portions Exist. 11'-0" Storm Drain and Steel Railing

Cast Retaining Wall W. 2'-3" Steel Railing

Pipe anchors per Std. Plan 821-D

S = .0011

S = .0010

Exist RC Channel Lining See Note 1

Exist 8'-6" RCP 1230-0

Pipe No. 1 Jacked in Place

210'-66" RCP, 3000-0 Jacked in Place

67'-66" RCP 250-0

71 TX. No. 3

90'-78" RCP, 850-0

390'-78" RC PIPE, 1800-0

180'-78" RCP, 1650-0

Exist 8'-6" RCP

Exist 11'-0" RCP

Exist 10'-0" RCP

Exist 9'-0" RCP

Exist 8'-0" RCP

Exist 7'-0" RCP

Exist 6'-0" RCP

Exist 5'-0" RCP

Exist 4'-0" RCP

Exist 3'-0" RCP

Exist 2'-0" RCP

Exist 1'-6" RCP

Exist 1'-0" RCP

Exist 0'-6" RCP

Exist 0'-0" RCP

Exist 0'-0" RCP

Exist 0'-0

SUMMARY
BORING NO. 1

DATE DRILLED 10-6-88

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED.

ELEVATION 311' Sta 14+08±

DEPTH IN FEET	GRAPHIC LOG	SOIL CLASS (USCS)	CONSISTENCY OR CONDITION	COLOR	MOISTURE	DESCRIPTION	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	UNCONFINED COMPRESSIVE STRENGTH (PSF)
0		SP	slightly moist	loose	tan	SAND with gravel and cobbles			
5						End of boring at 5'. No groundwater encountered. Boring terminated due to presence of cobbles			
10									
15									

LOCATION
140' WEST OF CENTERLINE OF LOS ANGELES RIVER FLOOD CONTROL CHANNEL, 210' SOUTH OF CENTERLINE OF NORTH BROADWAY

SUMMARY
BORING NO. 2

DATE DRILLED 10-6-88

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED.

ELEVATION 312' Sta 2+30.4

DEPTH IN FEET	GRAPHIC LOG	SOIL CLASS (USCS)	CONSISTENCY OR CONDITION	COLOR	MOISTURE	DESCRIPTION	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	UNCONFINED COMPRESSIVE STRENGTH (PSF)
0		SP	slightly moist	medium dense	black	FILL - SAND fine to medium with gravel and cobbles			
5		SP	moist		tan	SAND fine to medium with gravel and cobbles, cobbles and occasional boulders at 5.5', silty sand layer at 9'	91	6.3	288
10						very moist clayey sand layer at 10½' (6" thick)			
						INVERT			
15			moist	dense	olive gray to orange brown	SANDSTONE clayey, massive, moderately weak jointed	116	13	115
						End of boring at 17'. No groundwater encountered			

LOCATION
240' WEST OF CENTERLINE OF FLOOD CONTROL CHANNEL, 265' SOUTH OF CENTERLINE OF SOUTH BROADWAY

SUMMARY
BORING NO. 3

DATE DRILLED 10-6-88

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED.

ELEVATION 315' Sta 4+60±

DEPTH IN FEET	GRAPHIC LOG	SOIL CLASS (USCS)	CONSISTENCY OR CONDITION	COLOR	MOISTURE	DESCRIPTION	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	UNCONFINED COMPRESSIVE STRENGTH (PSF)
0		SP	slightly moist to moist	medium dense	brown	FILL - SAND fine to medium, with gravel			
5				dense	tan	SANDSTONE medium grained, weakly cemented	20	7.2	115
10					orange brown & olive green				
						INVERT			
15			very moist			with thin siltstone interbeds to about 1"	15	15	102
						End of boring at 17'. No groundwater encountered			

LOCATION
100' EAST OF CENTERLINE OF ELYSIAN PARK ROAD 100' NORTH OF CENTERLINE OF NORTH BROADWAY

SUMMARY
BORING NO. 4

DATE DRILLED 10-6-88

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED.

ELEVATION 340' Sta 4+96±

DEPTH IN FEET	GRAPHIC LOG	SOIL CLASS (USCS)	CONSISTENCY OR CONDITION	COLOR	MOISTURE	DESCRIPTION	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	UNCONFINED COMPRESSIVE STRENGTH (PSF)
0		SP	dry	loose	dark brown	FILL - SAND fine to medium, with gravel			
5						End of boring at 1.5'. Boring terminated due to presence of gravel. No groundwater encountered			
10									
15									
20									
25									

LOCATION
100' EAST OF CENTERLINE OF ELYSIAN PARK ROAD 100' NORTH OF CENTERLINE OF NORTH BROADWAY

SUMMARY
BORING NO. 5

DATE DRILLED 9-14-88

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED.

ELEVATION 333' Sta 6+05±

DEPTH IN FEET	GRAPHIC LOG	SOIL CLASS (USCS)	CONSISTENCY OR CONDITION	COLOR	MOISTURE	DESCRIPTION	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	UNCONFINED COMPRESSIVE STRENGTH (PSF)
0		ML	moist	fine	brown	2" Asphalt			
5				dense to very dense	tan	FILL - SILT trace sand, clayey, with bricks, wire, wood	12	14	91
10						SANDSTONE silty, weathered, slightly weathered at 7', very hard drilling from 7-8'			
			moist to very moist						
15						highly bioturbated sandstone and clayey siltstone beds	25	18	107
20									
						INVERT	12	24	99
25						End of boring at 31'. No groundwater encountered			
30									

LOCATION
5' WEST OF SOUTH CURBLINE OF ELYSIAN PARK RD. 103' NORTH OF CENTERLINE OF NORTH BROADWAY

SUMMARY
BORING NO. 6

DATE DRILLED 9-14-88

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED.

ELEVATION 340' Sta 11+05±

DEPTH IN FEET	GRAPHIC LOG	SOIL CLASS (USCS)	CONSISTENCY OR CONDITION	COLOR	MOISTURE	DESCRIPTION	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	UNCONFINED COMPRESSIVE STRENGTH (PSF)
0			moist	dense to very dense	orange and tan	12" Asphalt concrete over 1" concrete and 6" gravel base			
5						SANDSTONE mottled, silty, weathered	12	7.9	109
10						slightly weathered, thickly bedded very hard drilling from 7-9'			
15			very moist	very hard	tan to gray	SILTSTONE clayey	12	22	102
						INVERT			
20				dense	gray	SANDSTONE clayey	12	22	100
25						End of boring at 26.5'. No groundwater encountered	11	20	106
30									

LOCATION
250' EAST OF INTERSECTION OF NORTH BROADWAY AND CAMAGNI STREET, 25' NORTH OF SOUTH CURBLINE OF NORTH BROADWAY

SUMMARY
BORING NO. 7

DATE DRILLED 10-6-88

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED.

ELEVATION 340' Sta 17+45±

DEPTH IN FEET	GRAPHIC LOG	SOIL CLASS (USCS)	CONSISTENCY OR CONDITION	COLOR	MOISTURE	DESCRIPTION	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	UNCONFINED COMPRESSIVE STRENGTH (PSF)
0		SP SC	slightly moist to very moist	loose to medium dense	orange brown	8" Concrete SAND with gravel and cobbles	5	20	94
5					tan to dark brown	CLAYEY SAND fine, with gravel mottled, with siltstone fragments			
10						with sandy clay layers and lenses			
15			wet			black clayey fine sand layer at 15'	6	35	149
				dense		SANDSTONE clayey, slightly weathered, massive		25	97
20						INVERT			
					dark green	medium to coarse grained	8	28	167
25						End of boring at 26.5' Groundwater encountered at 15.5'			
30									

LOCATION
5' WEST OF EAST CURBLINE OF SOLANO AVENUE, 60' NORTH OF INTERSECTION OF SOUTH BROADWAY AND SOLANO AVENUE

SUMMARY
BORING NO. 8

DATE DRILLED 10-5-88

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED.

ELEVATION 388' Sta 25+28±

DEPTH IN FEET	GRAPHIC LOG	SOIL CLASS (USCS)	CONSISTENCY OR CONDITION	COLOR	MOISTURE	DESCRIPTION	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	UNCONFINED COMPRESSIVE STRENGTH (PSF)
0		SC	very moist	medium dense	dark brown	6½" Concrete FILL - CLAYEY SAND fine to medium, with asphalt and siltstone fragments to 8" (approx.)	6	22	104
5		SC		medium dense to dense	orange brown	CLAYEY SAND INVERT			
10						olive green layers from about 11'	17	15	114
15			wet						
20									
25							5	20	106
30						End of boring at 26' Groundwater encountered at 16'			

LOCATION
55' EAST OF WEST CURBLINE OF SOLANO AVENUE, 180' SOUTH OF INTERSECTION OF SOLANO AVENUE AND AMADOR STREET

SUMMARY
BORING NO. 9

DATE DRILLED 9-14-88

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED.

ELEVATION 404' Sta 31+20±

DEPTH IN FEET	GRAPHIC LOG	SOIL CLASS (USCS)	CONSISTENCY OR CONDITION	COLOR	MOISTURE	DESCRIPTION	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	UNCONFINED COMPRESSIVE STRENGTH (PSF)
0		CL	moist	soft	yellow brown	2" Asphalt FILL - SILTY CLAY			
5		ML		firm to stiff	brown	SILT with clay, slightly porous, roots	7	12	113
10						INVERT becoming very stiff	12	12	119
15						End of boring at 16' No groundwater encountered			
20									

LOCATION
55' EAST OF WEST CURBLINE OF SOLANO AVENUE 480' NORTH OF INTERSECTION OF SOLANO AVENUE AND AMADOR STREET

SUMMARY
BORING NO. 10

DATE DRILLED 9-13-88

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED.

ELEVATION 422' Sta 36+05±

DEPTH IN FEET	GRAPHIC LOG	SOIL CLASS (USCS)	CONSISTENCY OR CONDITION	COLOR	MOISTURE	DESCRIPTION	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	UNCONFINED COMPRESSIVE STRENGTH (PSF)
0		CL	slightly moist	stiff	red brown	4" Asphalt over 7" base SANDY CLAY slightly porous, roots, with thin clayey sand layers	7	12	112
5						INVERT	7	13	115
10			very moist	dense	yellow brown to tan	SANDSTONE weathered, discontinuous beds of claystone; silty	>90	16	110
15									
20							33	25	99
25						End of boring at 20' No groundwater encountered			
30									

LOCATION
10' WEST OF EAST CURBLINE OF SOLANO AVENUE, 50' SOUTH OF INTERSECTION OF SOLANO AVENUE AND AMADOR PLACE

SUMMARY
BORING NO. 11

DATE DRILLED 9-13-88

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED.

ELEVATION 443' Sta 41+20±

DEPTH IN FEET	GRAPHIC LOG	SOIL CLASS (USCS)	CONSISTENCY OR CONDITION	COLOR	MOISTURE	DESCRIPTION	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	UNCONFINED COMPRESSIVE STRENGTH (PSF)
0		CL	moist	stiff to very stiff	brown	4" Asphalt over 2" base SANDY CLAY porous, roots, mostly fine to medium sand	7	16	118
5						INVERT	7	14	119
10				dense	tan	SANDSTONE silty, highly weathered	40	13	113
15						End of boring at 13' No groundwater encountered			
20									

LOCATION
10' WEST OF EAST CURBLINE OF SOLANO AVENUE, 90' NORTH OF INTERSECTION OF SOLANO AVENUE AND ARGYLE STREET

SUMMARY
BORING NO. 12

DATE DRILLED 9-13-88

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED.

ELEVATION 473' Sta 47+25±

DEPTH IN FEET	GRAPHIC LOG	SOIL CLASS (USCS)	CONSISTENCY OR CONDITION	COLOR	MOISTURE	DESCRIPTION	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	UNCONFINED COMPRESSIVE STRENGTH (PSF)
0		CL	moist	stiff	red brown	32" Asphalt over 5" base CLAY with fine to medium sand	7	19	114
5									
10			very moist	low hardness	tan to yellow brown	CLAYSTONE silty, mottled, interbedded sandstone layers	12	29	106
15						INVERT			
20						End of boring at 14½' No groundwater encountered			

LOCATION
15' WEST OF EAST CURBLINE OF SOLANO AVENUE, 90' NORTH OF INTERSECTION OF SOLANO AVENUE AND BOVETT STREET

SUMMARY
BORING NO. 13

DATE DRILLED 9-13-88

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED.

ELEVATION 508' Sta 54+10±

DEPTH IN FEET	GRAPHIC LOG	SOIL CLASS (USCS)	CONSISTENCY OR CONDITION	COLOR	MOISTURE	DESCRIPTION	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	UNCONFINED COMPRESSIVE STRENGTH (PSF)
0			slightly moist to moist	very dense	tan	4" Asphalt over 5" base SANDSTONE massive, indistinct bedding, slightly weathered	38	9.3	169
5							>99	6.1	127
10						INVERT			
						End of boring at 6' Boring terminated due to hard drilling conditions. No groundwater encountered			
15									
20									

LOCATION
55' WEST OF EAST CURBLINE OF ARGENTA ROAD, 60' NORTH OF INTERSECTION OF ARGENTA ROAD AND PALM ROAD

PERLITZ & DAUBLE CONSULTING ENGINEERS
GLENDALE, CALIFORNIA

SUBMITTED FOR APPROVAL:
APR 7 1989
DATE

REVISIONS		
NO.	DATE	DESCRIPTION

COUNTY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS

SOLANO DRAIN
REINFORCED CONCRETE CONDUIT

LOGS OF BORINGS

DESIGNED BY	DRAWN BY	CHECKED BY	CHIEF ENGINEER
Consultant	Consultant	Consultant	Ed Chavez

RECOMMENDED BY
ASSISTANT CHIEF ENGINEER

DATE Oct. '88 SCALE A.S.
DRAWING NO. 778-D1.10
SHEET 10 OF 14

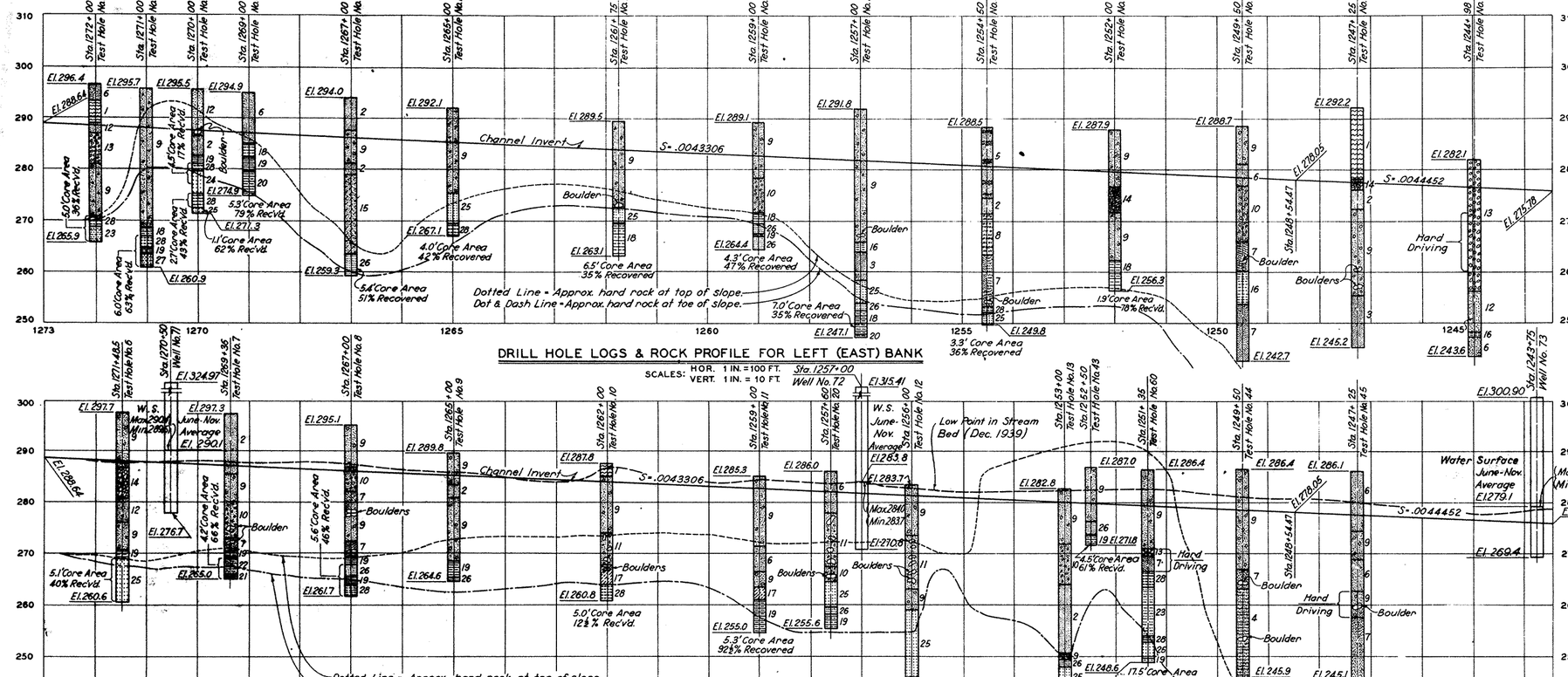
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APPENDIX G

LOS ANGELES RIVER BORING LOGS

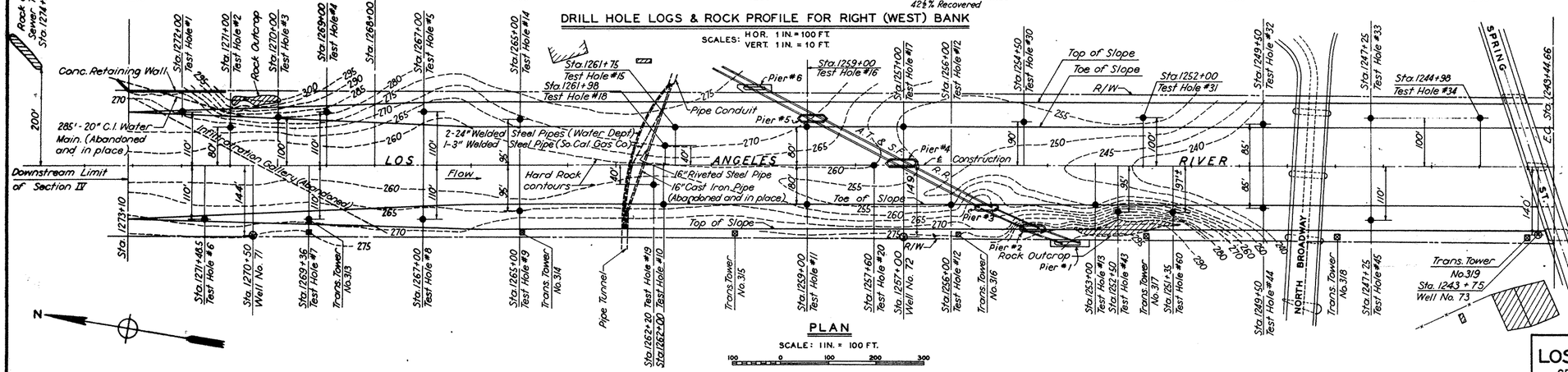
DRILL HOLE LOGS & ROCK PROFILE FOR LEFT (EAST) BANK

SCALES: HOR. 1 IN. = 100 FT.
VERT. 1 IN. = 10 FT



DRILL HOLE LOGS & ROCK PROFILE FOR RIGHT (WEST) BANK

SCALES: HOR. 1 IN. = 100 FT.
VERT. 1 IN. = 10 FT



PLAN

SCALE: 1 IN. = 100 FT.

100 0 100 200 300

LEGEND

- ● Location of drilled Test Hole
- ⊗ Location of Ground-water Well
- Hard Rock Contours

1 Old Fill	5 Gravel & Fine Sand	9 Sand & Gravel	13 Coarse Gravel	17 Hard Blue Clay	21 Very Hard Shale	25 Soft Sandstone
2 Fine Sand	6 Sand	10 Packed Sand & Gravel	14 Hard Packed Gravel	18 Soft Shale	22 Sandy Hard Shale	26 Sandstone
3 Fine Packed Sand	7 Packed Sand	11 Sand, Gravel & Boulders	15 Sand Streaked with Blue Clay	19 Shale	23 Soft Sandstone & Shale	27 Hard & Soft Sandstone
4 Fine Sand & Silt	8 Fine Gravel & Blue Sand	12 Coarse Sand	16 Clay	20 Hard Shale	24 Very Soft Sandstone	28 Hard Sandstone

Note: Special Legend shown hereon is applicable to this sheet only.

GENERAL NOTES

The hard rock contours and profiles indicate the elevations to which it is estimated that steel piling may be driven. All hard rock contours and profiles shown hereon, while representing the best available estimates, are not certified to be correct.

Rock contours shown in vicinity of A.T. & S.F. Ry bridge are estimates based on records of steel piling penetration as shown on A.T. & S.F. Ry. bridge plans.

Rock contours shown in vicinity of concrete wall on Left (East) Bank (between Sta.1271+00 & Sta.1273+00) are estimates based on records of wood piling penetration as shown on L.A. City Plan # 27105.

All Test Holes shown hereon were 2inch & 3inch I.D. and drilled with diamond core equipment. Wash-boring samples were taken in overburden and cores in bedrock.

All soil classifications shown hereon were based on wash-boring samples and represent the best available information. These soil classifications are not certified to be exact and are not intended to apply at any place other than where Test Holes were drilled.

Test Holes #1 to #20, incl., were drilled during the period of Aug. 24, 1939 to Sept. 16, 1939, prior to the storm of Sept. 24, 1939.

LOS ANGELES COUNTY DRAINAGE AREA, CALIFORNIA.

LOS ANGELES RIVER IMPROVEMENT

SECTION V - ARROYO SECO TO SOTO STREET

FOUNDATION INVESTIGATIONS

STA. 1273+10.00 TO STA. 1243+44.66

ARROYO SECO TO NORTH BROADWAY — MILE 24.0 TO MILE 23.5

SCALE: AS SHOWN — IN 90 SHEETS — SHEET NO. 9

DATUM IS MEAN SEA LEVEL

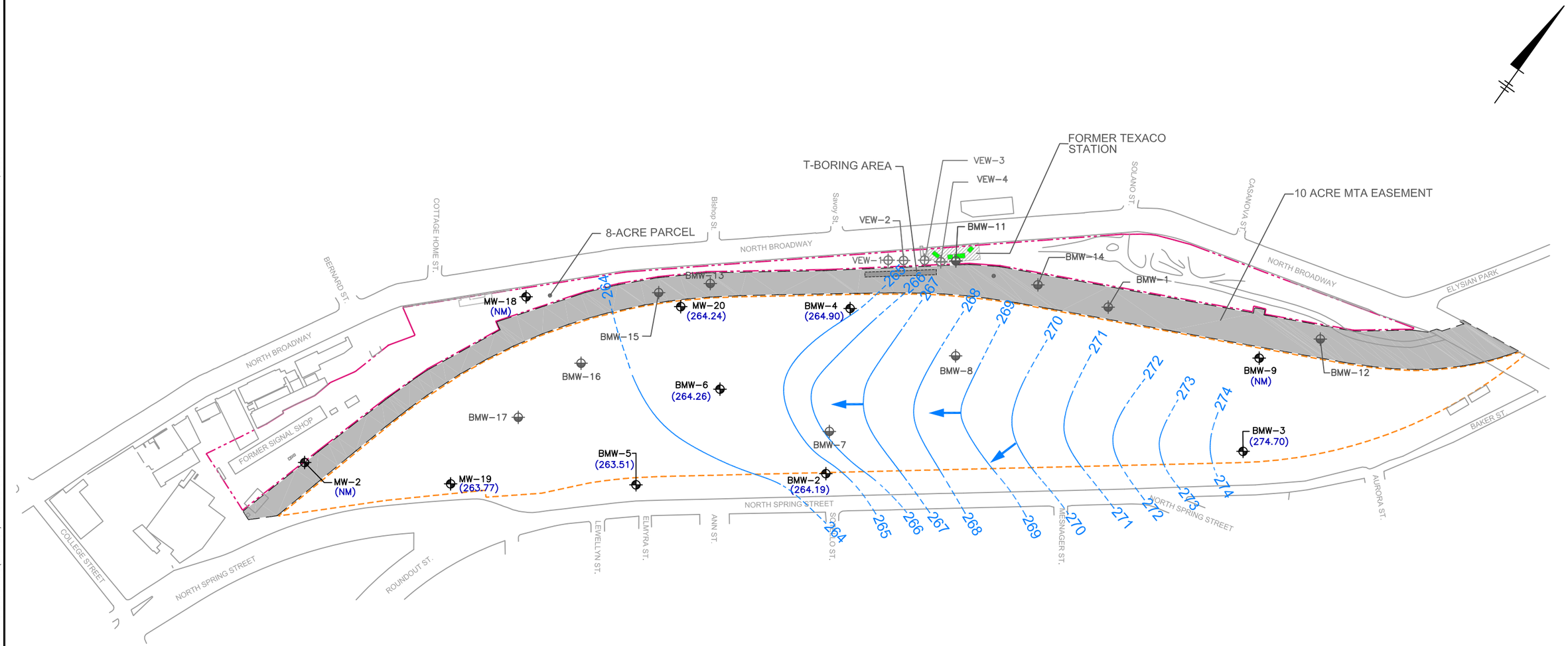
U. S. ENGINEER OFFICE, LOS ANGELES, CALIF., MAY 1940

SUBMITTED BY	APPROVED BY:
R. E. Thanner, Major, Corps of Engineers, U. S. Army, Chief, Engineering Division	Edwin C. Kelton, Lt. Col., Corps of Engineers, U. S. Army, District Engineer

FILE NO.	DRAWN	TRACED	CHECKED	TO ACCOMPANY SPECIFICATIONS
303/9	W.J.H. C.H.P.	S.T.D. I.S.	T.G.M. L.H.F.	DATED: March 8, 1941

APPENDIX H

EXCERPTS FROM ARCADIS [2010]



LEGEND

- BMW–5 — GROUNDWATER MONITORING WELL
- VEW–4 — ABANDONED VAPOR EXTRACTION WELL
- BMW–12 — ABANDONED GROUNDWATER MONITORING WELL
- 8-ACRE PARCEL
- 32-ACRE PARCEL
- 10-ACRE MTA EASEMENT
- FORMER UNDERGROUND STORAGE TANK

- (NM) — WELL NOT MONITORED
- (263.51) — GROUNDWATER ELEVATION, IN FEET ABOVE MEAN SEA LEVEL
- GROUNDWATER FLOW DIRECTION
- 264 — CONTOUR OF EQUAL GROUNDWATER SURFACE IN FEET ABOVE MEAN SEA LEVEL (DASHED WHERE ESTIMATED)

NOTE:
MONITORING WELLS MW-2 AND BMW-9 ARE NOT ACCESSIBLE. BMW-9 CANNOT BE LOCATED.

0 300' 600'
GRAPHIC SCALE

UPRR FORMER CORNFIELD YARD
1245 N. SPRING STREET
LOS ANGELES, CALIFORNIA

SITE PLAN AND GROUNDWATER ELEVATION CONTOURS SEPTEMBER 2009

ARCADIS

FIGURE 2

CITY:FULLERTON DIV/GROUP:ENR4CAE4 LDR:HUBATCG BPM: A. JONES PM:G. FIOL TMK: STEVENS TR: G. CARLTON
G:\ENV\CAD\Petaluma\ACTICA000704\0002\000640\CA704012302-2.dwg LAYOUT: 2 SAVED: 11/17/2009 1:33 PM ACADVER: 17.1S (LMS TECH) PAGESETUP: SETUP1 PLOTSTYLETABLE: ARCADIS.CTB PLOTTED: 11/17/2009 1:49 PM BY: HARRIS, JESSICA
XREFS: IMAGES: PROJECTNAME: ---
BASEMAP

ARCADIS

Table 1 . Groundwater Elevations
Union Pacific Railroad Company - Former Cornfield Yard
Los Angeles, California

Well ID	Measurement Date	TOC Elevation (feet MSL)	Depth to Groundwater (feet)	Groundwater Elevation (feet MSL)	Change from Previous Data (feet)
MW-2	8/15/00	291.74	27.52	264.22	--
	11/8/00		27.62	264.12	-0.10
	2/6/01		27.42	264.32	0.20
	5/14/01		26.65	265.09	0.77
	8/14/01		26.93	264.81	-0.28
	11/12/01		27.35	264.39	-0.42
	2/18/02		27.50	264.24	-0.15
	7/10/02	291.78	27.78	264.00	-0.24
	11/14/02		28.06	263.72	-0.52
	3/18/03		27.64	264.14	0.14
	8/5/03		27.54	264.24	0.10
BMW-1	8/15/00	302.55	5.71	296.84	--
	11/8/00		5.51	297.04	0.20
	2/6/01		4.49	298.06	1.02
	5/14/01		4.61	297.94	-0.12
	Well decommissioned, June 2001				
BMW-2	8/16/00	298.54	33.77	264.77	--
	11/8/00		33.91	264.63	-0.14
	2/6/01		NM	NM	NM
	5/14/01		33.00	265.54	0.91
	8/14/01		33.16	265.38	-0.16
	11/12/01		33.58	264.96	-0.42
	2/18/02		33.78	264.76	-0.20
	7/11/02	298.54	34.05	264.49	-0.27
	11/15/02		34.19	264.35	-0.14
	3/18/03		33.71	264.83	0.48
	8/6/03		33.74	264.80	-0.03
	1/12/04		34.08	264.46	-0.34
	1/27/05		32.08	266.46	2.00
	1/10/06		32.2*	--	--
	8/10/06		32.45	266.09	1.63
	1/31/07		33.03	265.50	-0.59
	1/18/08	298.53	33.56	264.97	-0.53
	3/7/08		33.06	265.47	0.50
	1/8/09		33.86	264.67	-0.80
	9/16/09		34.34	264.19	-0.48
BMW-3	8/16/00	306.16	30.76	275.40	--
	11/8/00		30.83	275.33	-0.07
	2/6/01		30.92	275.24	-0.09
	5/14/01		30.47	275.69	0.45
	8/14/01		30.60	275.56	-0.13
	11/12/01		30.63	275.53	-0.03
	2/18/02		30.76	275.40	-0.13
	7/11/02	305.91	30.57	275.34	-0.06
	11/15/02		30.48	275.43	0.09
	3/19/03		30.36	275.55	0.12
	1/12/04		30.65	275.26	-0.29
	1/27/05		28.66	277.25	1.99

ARCADIS

Table 1 . Groundwater Elevations
Union Pacific Railroad Company - Former Cornfield Yard
Los Angeles, California

Well ID	Measurement Date	TOC Elevation (feet MSL)	Depth to Groundwater (feet)	Groundwater Elevation (feet MSL)	Change from Previous Data (feet)
BMW-3 Continued	1/10/06		33.9*	--	--
	1/31/07	306.80	31.30	275.50	--
	1/18/08		31.33	275.47	-0.03
	3/7/08		30.85	275.95	0.48
	1/8/09		31.55	275.25	-0.70
	9/16/09		32.10	274.70	-0.55
BMW-4	8/14/00	300.37	34.71	265.66	--
	11/8/00		34.99	265.38	-0.28
	2/6/01		34.64	265.73	0.35
	5/14/01		33.88	266.49	0.76
	8/14/01		33.85	266.52	0.03
	11/12/01		34.41	265.96	-0.56
	2/18/02		34.69	265.68	-0.28
	7/12/02	300.33	35.25	265.08	-0.60
	11/11/02		NM	--	--
	3/19/03		34.92	265.41	0.33
	8/6/03		34.80	265.53	0.12
	1/12/04		35.19	265.14	-0.39
	1/27/05		33.05	267.28	2.14
	1/10/06		NM	--	--
	8/10/06	302.66	35.65	-35.65	--
	1/31/07	302.65	36.39	266.26	-0.74
	1/18/08		36.86	265.79	-0.47
	3/7/08		36.29	266.36	0.57
	1/8/09		37.26	265.39	-0.97
	9/16/09		37.75	264.90	-0.49
BMW-5	8/15/00	296.40	32.09	264.31	--
	11/8/00		32.22	264.18	-0.13
	2/6/01		32.08	264.32	0.14
	5/14/01		31.31	265.09	0.77
	8/14/01		31.53	264.87	-0.22
	11/12/01		31.92	264.48	-0.39
	2/18/02		32.11	264.29	-0.19
	7/10/02	296.29	32.34	263.95	-0.34
	11/15/02		32.50	263.79	-0.16
	3/18/03		31.54	264.75	0.96
	8/5/03		32.01	264.28	-0.47
	1/12/04		32.38	263.91	-0.37
	1/27/05		30.87	265.42	1.51
	1/10/06		30.4*	--	--
	8/10/06		30.86	265.43	1.52
	1/31/07	296.26	31.29	264.97	-0.46
	1/18/08		31.74	264.52	-0.45
	3/7/08		31.30	264.96	0.44
	1/8/09		32.17	264.09	-0.87
	9/16/09		32.75	263.51	-0.58
BMW-6	8/16/00	299.07	34.36	264.71	--
	11/8/00		34.48	264.59	-0.12
	2/6/01		33.93	265.14	0.55
	5/14/01		33.58	265.49	0.35
	8/14/01		33.98	265.09	-0.40
	11/12/01		34.42	264.65	-0.44

ARCADIS

Table 1 . Groundwater Elevations
Union Pacific Railroad Company - Former Cornfield Yard
Los Angeles, California

Well ID	Measurement Date	TOC Elevation (feet MSL)	Depth to Groundwater (feet)	Groundwater Elevation (feet MSL)	Change from Previous Data (feet)
BMW-6 Continued	2/18/02		34.59	264.48	-0.17
	7/12/02	298.81	34.66	264.15	-0.33
	11/15/02		34.85	263.96	-0.19
	3/19/03		33.89	264.92	0.96
	8/6/03		34.30	264.51	-0.41
	1/12/04		34.68	264.13	-0.38
	1/27/05		32.75	266.06	1.93
	1/10/06		34.43*	--	--
	8/10/06		34.40	264.41	-0.10
	1/31/07	300.63	35.29	265.34	0.93
	1/18/08		35.81	264.82	-0.52
	3/7/08		35.55	265.08	0.26
	1/8/09		36.15	264.48	-0.60
	9/16/09		36.37	264.26	-0.22
BMW-7	8/16/00	299.74	35.29	264.45	--
	11/8/00		34.68	265.06	0.61
	2/6/01		34.65	265.09	0.03
	5/14/01		33.77	265.97	0.88
	8/14/01		33.80	265.94	-0.03
	11/12/01		34.35	265.39	-0.55
	2/18/02		34.57	265.17	-0.22
	Well decommissioned, July 2002				
BMW-8	8/15/00	300.56	33.17	267.39	--
	11/8/00		33.38	267.18	-0.21
	2/6/01		33.50	267.06	-0.12
	5/14/01		32.42	268.14	1.08
	8/14/01		32.72	267.84	-0.30
	11/12/01		33.21	267.35	-0.49
	2/18/02		31.31	269.25	1.90
	7/11/02	299.12	32.38	266.74	-2.51
	11/15/02		32.56	266.56	-0.18
	3/19/03		31.99	267.13	0.57
	1/12/04		32.32	266.80	-0.33
	1/27/05		30.04	269.08	1.95
	1/10/06		NM	--	--
	Well decommissioned, June 2006				
BMW-9	1/6/06	306.15	25.61	280.54	--
	11/8/00		25.99	280.16	-0.38
	2/6/01		25.77	280.38	0.22
	5/14/01		24.85	281.30	0.92
	8/14/01		25.45	280.70	-0.60
	11/12/01		NM	NM	NM
	2/18/02		NM	NM	NM
	7/10/02		NM	NM	NM
	11/15/02		NM	NM	NM
	3/18/03		NM	NM	NM

ARCADIS

Table 1 . Groundwater Elevations
Union Pacific Railroad Company - Former Cornfield Yard
Los Angeles, California

Well ID	Measurement Date	TOC Elevation (feet MSL)	Depth to Groundwater (feet)	Groundwater Elevation (feet MSL)	Change from Previous Data (feet)
BMW-11	8/16/00	340.01	33.60	306.41	--
	11/8/00		33.93	306.08	-0.33
	2/6/01		33.94	306.07	-0.01
	5/14/01		33.37	306.64	0.57
	8/14/01		33.87	306.14	-0.50
	11/12/01		34.20	305.81	-0.33
	2/18/02		34.64	305.37	-0.44
	7/12/02	339.47	34.90	304.57	-0.80
	11/15/02		34.90	304.57	0.00
	3/19/03		34.25	305.22	0.65
	Well decommissioned, August 2006				
BMW-12	8/16/00	306.54	10.43	296.11	--
	11/8/00		10.86	295.68	-0.43
	2/6/01		9.04	297.50	1.82
	5/14/01		8.43	298.11	0.61
	Well decommissioned, June 2001				
BMW-13	8/17/00	300.27	35.18	265.09	--
	11/8/00		35.31	264.96	-0.13
	2/6/01		34.92	265.35	0.39
	5/14/01		34.47	265.80	0.45
	Well decommissioned, June 2001				
BMW-14	8/15/00	301.61	4.26	297.35	--
	11/8/00		4.23	297.38	0.03
	2/6/01		1.96	299.65	2.27
	5/14/01		5.16	296.45	-3.20
	Well decommissioned, June 2001				
BMW-15	8/25/00	299.79	35.05	264.74	--
	11/8/00		35.16	264.63	-0.11
	2/6/01		35.17	264.62	-0.01
	5/14/01		34.28	265.51	0.89
	Well decommissioned, June 2001				
BMW-16	8/25/00	297.63	33.19	264.44	--
	11/8/00		33.27	264.36	-0.08
	2/6/01		33.30	264.33	-0.03
	5/14/01		32.45	265.18	0.85
	8/14/01		32.70	264.93	-0.25
	11/12/01		33.23	264.40	-0.53
	2/18/02		33.34	264.29	-0.11
	Well decommissioned, July 2002				
BMW-17	8/25/00	294.47	30.69	263.78	--
	11/8/00		30.79	263.68	-0.10
	2/6/01		30.62	263.85	0.17
	5/14/01		29.82	264.65	0.80
	8/14/01		30.06	264.41	-0.24
	11/12/01		30.46	264.01	-0.40
	2/18/02		30.68	263.79	-0.22
	Well decommissioned, July 2002				

ARCADIS

Table 1 . Groundwater Elevations
Union Pacific Railroad Company - Former Cornfield Yard
Los Angeles, California

Well ID	Measurement Date	TOC Elevation (feet MSL)	Depth to Groundwater (feet)	Groundwater Elevation (feet MSL)	Change from Previous Data (feet)
MW-18	7/11/02	325.90	62.06	263.84	--
	11/14/02		62.33	263.57	-0.27
	3/19/03		61.90	264.00	0.43
	8/5/03		61.76	264.14	0.14
	1/12/04		62.18	263.72	-0.42
	1/10/06		59.92	265.98	2.26
	1/31/07		60.84	265.32	-0.66
	1/18/08	326.16	61.43	264.73	-0.59
	3/7/08	326.16	61.03	265.13	0.40
	1/8/09	326.16	61.77	264.39	-0.74
MW-19	7/10/02	293.60	29.82	263.78	--
	11/14/02		30.03	263.57	-0.21
	3/18/03		29.54	264.06	0.28
	8/5/03		29.55	264.05	-0.01
	1/12/04		29.93	263.67	-0.38
	8/10/06		27.05	266.55	2.88
	1/31/07	292.79	27.82	264.97	-1.58
	1/18/08	292.79	28.32	264.47	-0.50
	3/7/08	292.79	27.92	264.87	0.40
	1/8/09	292.79	28.65	264.14	-0.73
	9/16/09		29.02	263.77	-0.37
MW-20	8/10/06	300.27	33.81	-33.81	--
	1/31/07	300.28	34.51	265.77	-0.70
	1/18/08		35.01	265.27	-0.50
	3/7/08		34.54	265.74	0.47
	1/8/09		35.39	264.89	-0.85
	9/16/09		36.04	264.24	-0.65
VEW-2	7/12/02	339.31	35.61	303.70	--
	11/15/02		35.75	303.56	-0.14
	3/19/03		35.18	304.13	0.43

Notes:

Data prior to January 2007 provided by ERM.

Wells originally surveyed on May 18, 2000 by Don Thomas Associates.

Wells re-surveyed on July 2, 2002 by Cal Vada Surveying.

Wells BMW-4 and MW-20 surveyed on August 24, 2006 by Dulin and Boynton.

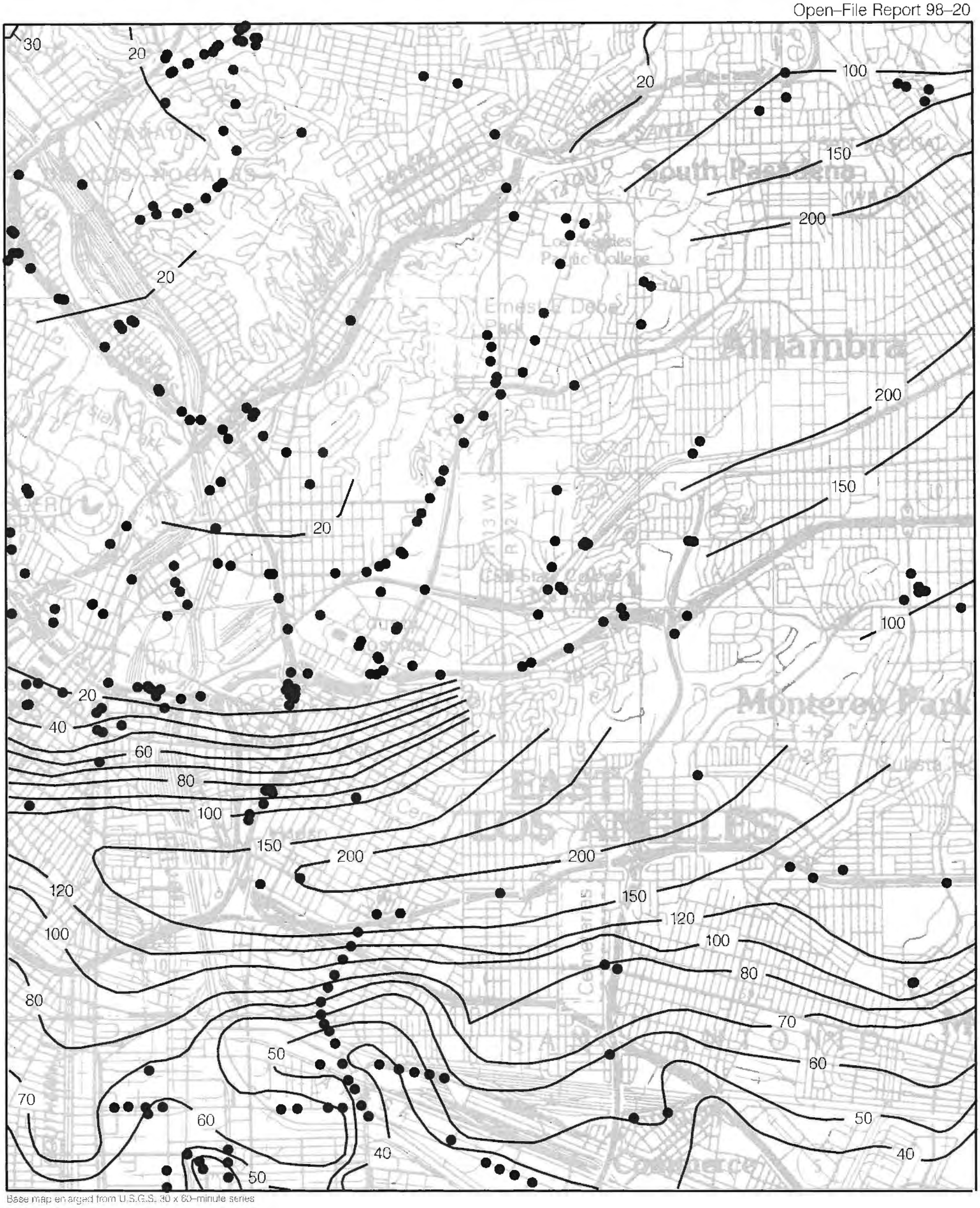
Wells re-surveyed on January 31, 2007 by Cal Vada Surveying and elevations were based on the National Geodetic Vertical Datum of 1929 (NGVD29).

*Accuracy of measurement is suspect, due to wellhead damage or modification to surface elevation caused during construction activities.

feet MSL	Feet above Mean Sea Level
--	Data not available
NM	Not measured
TOC	Top of casing

APPENDIX I

HISTORIC HIGH GROUNDWATER CONDITIONS



Base map enlarged from U.S.G.S. 30 x 60–minute series

Plate 1.2 Historically Highest Ground Water Contours and Borehole Log Data Locations, Los Angeles Quadrangle.

● Borehole Site

30 Depth to ground water in feet

ONE MILE

SCALE

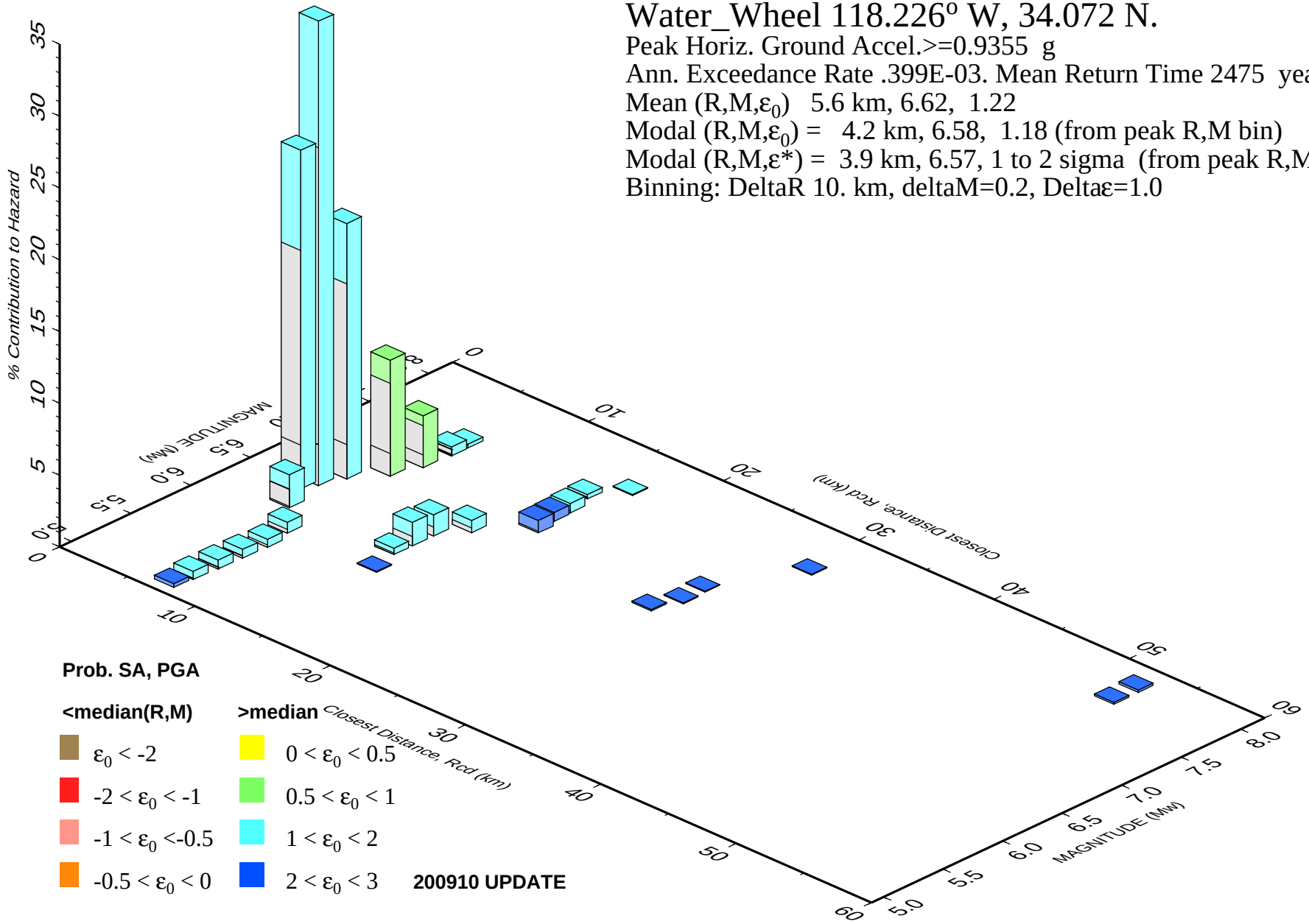
Geosyntec consultants

APPENDIX J

RESULTS OF USGS PROBABLISTIC SEISMIC HAZARD DEAGGREGATION

PSH Deaggregation on NEHRP D soil
Water_Wheel 118.226º W, 34.072 N.

Peak Horiz. Ground Accel.>=0.9355 g
Ann. Exceedance Rate .399E-03. Mean Return Time 2475 years
Mean (R,M,ε_0) 5.6 km, 6.62, 1.22
Modal (R,M,ε_0) = 4.2 km, 6.58, 1.18 (from peak R,M bin)
Modal (R,M,ε*) = 3.9 km, 6.57, 1 to 2 sigma (from peak R,M,ε bin)
Binning: DeltaR 10. km, deltaM=0.2, Deltaε=1.0



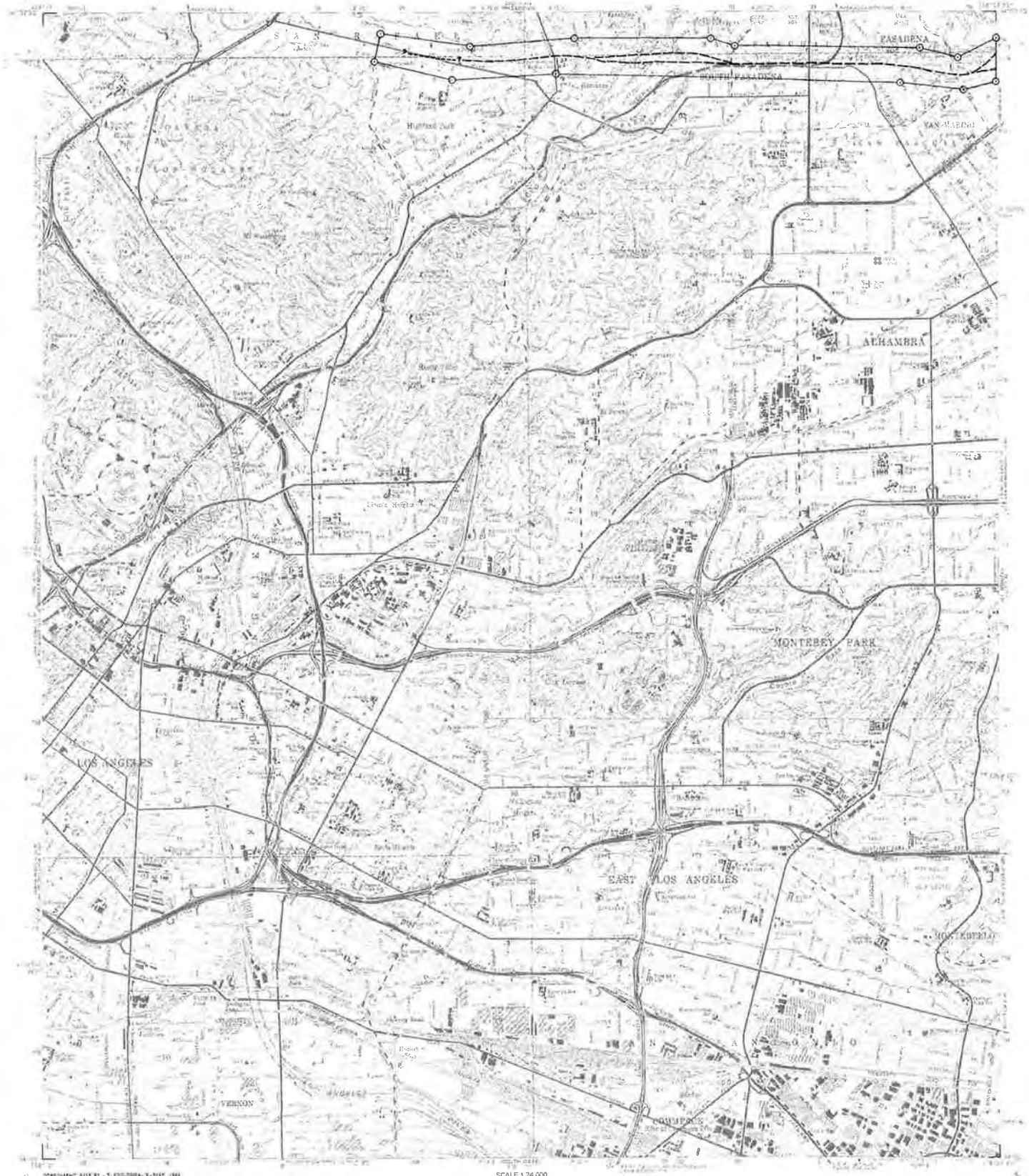
APPENDIX K

SEISMIC HAZARD ZONE INFORMATION

DIVISION OF MINES AND GEOLOGY
THOMAS E. GAY JR, ACTING STATE GEOLOGIST

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF CONSERVATION

LOS ANGELES QUADRANGLE
CALIFORNIA—LOS ANGELES CO.
7.5 MINUTE SERIES (TOPOGRAPHIC)



SCALE 1:24,000

1 MILE
1/2 0
1000 0 1000 2000 3000 4000 5000 6000 7000 FEET
1 0 1 KILOMETER

CONTOUR INTERVAL 20 FEET
DOTTED LINES REPRESENT 10 FOOT CONTOURS
NATIONAL GEODETIC VERTICAL DATUM OF 1929

MAP EXPLANATION

Potentially Active Faults

1906 C — Faults considered to have been active during Quaternary time, solid line where accurately located, long dash where approximately located, short dash where inferred, dotted where concealed; query (?) indicates additional uncertainty. Evidence of historic offset indicated by year of earthquake-associated event or C for displacement caused by creep or possible creep.

— — — Aerial photo lineaments (not field checked); based on youthful geomorphic and other features believed to be the results of Quaternary faulting.

Special Studies Zone Boundaries

These are delineated as straight-line segments that connect encircled turning points so as to define special studies zone segments.

Seaward projection of zone boundary

STATE OF CALIFORNIA
SPECIAL STUDIES ZONES

Delineated in compliance with Chapter 7.5, Division 2 of the California Public Resources Code

LOS ANGELES QUADRANGLE

OFFICIAL MAP

Effective: January 1, 1977

T. E. Gay Jr. Acting State Geologist

REFERENCES USED TO COMPILE FAULT DATA

Los Angeles Quadrangle

Buwalda, J. P., 1940, Geology of the Raymond basin: Unpublished report for Pasadena Water Department, 131 p., 3 maps.
Hill, R. L., and Sprotte, E. C., Santa Monica-Raymond Hill fault zone Multy, Los Angeles County, California: California Division of Mines and Geology, work in progress, December 1976.
Proctor, R. J., 1976, Preliminary map of geological features along the Raymond Hill fault, in Byer, J. W., Field Trip Guidebook—Systematic Canyon fault, Verdugo fault, York Boulevard fault, Raymond Fault, and Santa Maria fault zone September 24, 1976: Association of Engineering Geologists, Volume 9, 24. (Modified by R.J. Proctor, 1976.)

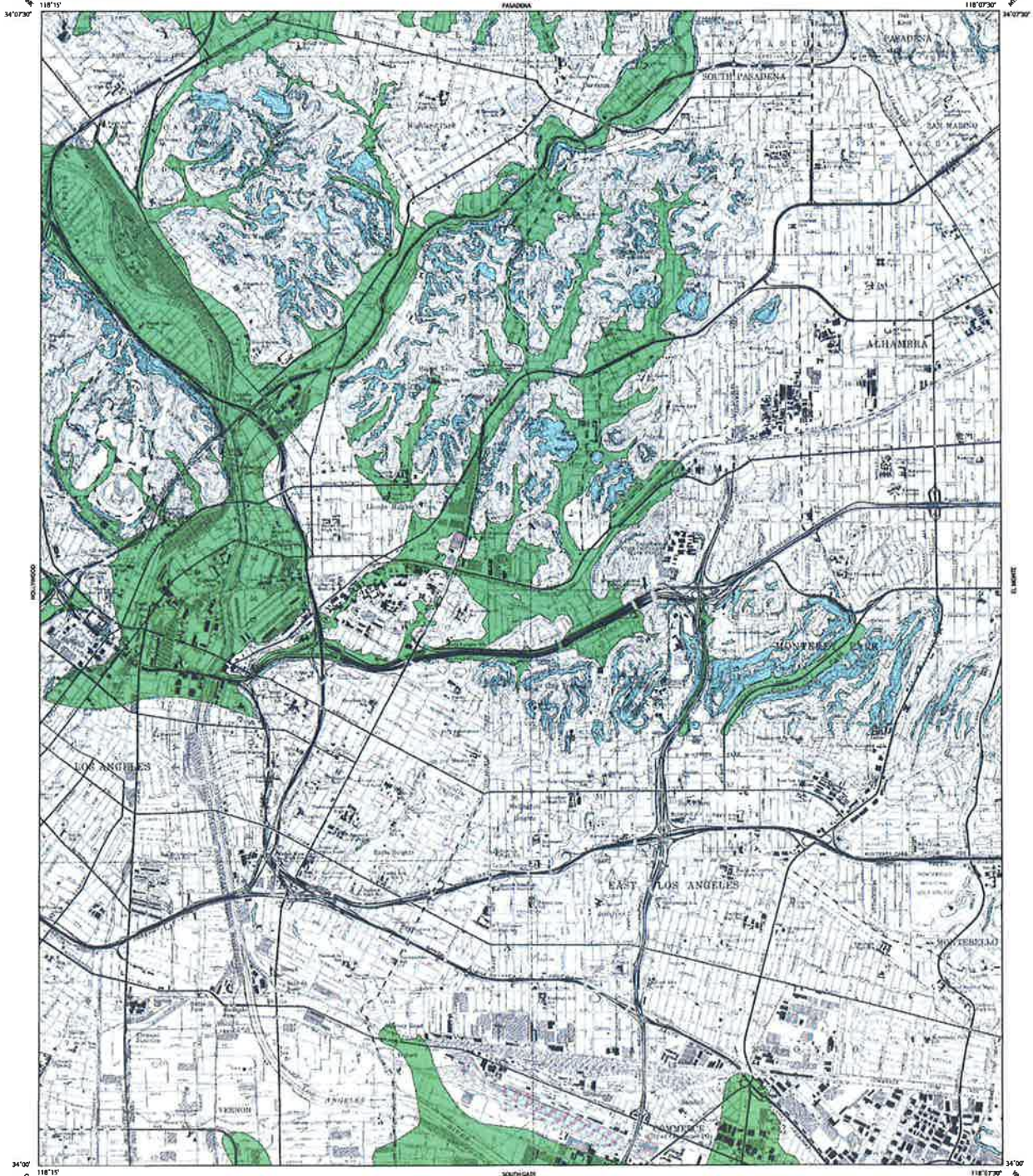
IMPORTANT - PLEASE NOTE

1) *This map may not show all potentially active faults, either within the special studies zones or outside their boundaries.*
2) Faults shown are the basis for establishing the boundaries of the special studies zones.
3) The identification of these potentially active faults and the location of such fault traces are based on the best available data. Traces have been drawn as accurately as possible at this map scale, however, the quality of data used is highly varied. The faults shown have not been field checked during this map compilation.
4) Fault information on this map is not sufficient to serve as a substitute for information developed by the special studies that may be required under Chapter 7.5, Division 2, Section 2623 of the California Public Resources Code

STATE OF CALIFORNIA-PETE WILSON, GOVERNOR
THE RESOURCES AGENCY-DOUGLAS P. WHEELER, SECRETARY
DEPARTMENT OF CONSERVATION-LAWRENCE J. GOLDZBAND, DIRECTOR

DIVISION OF MINES AND GEOLOGY
JAMES F. DAVIS, STATE GEOLOGIST

SEISMIC HAZARDS ZONES MAP
Los Angeles Quadrangle



Base Map prepared by U.S. Geological Survey, 1966, photorevised 1981, minor revision 1994

SCALE 1:24,000

PURPOSE OF MAP

This map will assist cities and counties in fulfilling their responsibilities for protecting the public safety from the effects of earthquake-triggered ground failure as required by the Seismic Hazards Mapping Act (Public Resources Code Sections 2690-2699.6).

For information regarding the scope and recommended methods to be used in conducting the required site investigations, see DMG Special Publication 117, Guidelines for Evaluating and Mitigating Seismic Hazards in California.

For a general description of the Seismic Hazards Mapping Program, the Seismic Hazards Mapping Act and regulations, and related information, please refer to the draft User's Guide (see http://www.consrv.ca.gov/dmg/shezp/userguide).

Production of this map was funded by the Federal Emergency Management Agency's Hazard Mitigation Program and the Department of Conservation in cooperation with the Governor's Office of Emergency Services.

IMPORTANT - PLEASE NOTE

1) This map may not show all areas that have the potential for liquefaction, landsliding, strong earthquake ground shaking or other earthquake and geologic hazards. Also, a similar earthquake capable of causing liquefaction or triggering landslide failure will not uniformly affect the entire area zoned.

2) Liquefaction zones may also contain areas susceptible to the effects of earthquake-induced landslides. This situation typically exists at or near the toe of existing landslides, downslope from rockfall or debris flow source areas, or adjacent to steep stream banks.

3) This map does not show Alquist-Priolo earthquake fault zones, if any, that may exist in this area. Please refer to the latest official map of earthquake fault zones for disclosures and other actions that are required by the Alquist-Priolo Earthquake Fault Zoning Act. For more information on this subject and an index to available maps, see DMG Special Publication 42.

4) Landslide zones on this map were determined, in part, by adapting methods first developed by the U.S. Geological Survey (USGS). A new generation of landslide hazard maps being prepared by the USGS (Jibson and Harp, in preparation) uses an experimental approach designed to explore new methods to assess earthquake-induced landslide hazards. Although aspects of this new methodology may be incorporated in future seismic hazard zone maps, the experimental USGS maps should not be used as substitutes for these official earthquake-induced landslide zone maps.

5) U.S. Geological Survey base map standards provide that 90 percent of cultural features be located within 40 feet (horizontal accuracy) at the scale of this map. The identification and location of liquefaction and earthquake-induced landslide zones are based on available data. However, the quality of data used is varied. The zone boundaries depicted have been drawn as accurately as possible at this scale.

6) Information on this map is not sufficient to serve as a substitute for the geologic and geotechnical site investigations required under Chapters 7.5 and 7.8 of Division 2 of the Public Resources Code.

7) DISCLAIMER: The State of California and the Department of Conservation make no representations or warranties regarding the accuracy of the data from which these maps were derived. Neither the State nor the Department shall be liable under any circumstances for any direct, indirect, special, incidental or consequential damages with respect to any claim by any user or any third party on account of or arising from the use of this map.

MAP EXPLANATION

Zones of Required Investigation:

Liquefaction
Areas where historic occurrence of liquefaction, or local geological, geotechnical and groundwater conditions indicate a potential for permanent ground displacements such that mitigation as defined in Public Resources Code Section 2693(c) would be required.

Earthquake-Induced Landslides
Areas where previous occurrence of landslide movement, or local topographic, geological, geotechnical and subsurface water conditions indicate a potential for permanent ground displacements such that mitigation as defined in Public Resources Code Section 2693(c) would be required.

STATE OF CALIFORNIA
SEISMIC HAZARD ZONES

Delineated in compliance with
Chapter 7.8, Division 3 of the California Public Resources Code
(Seismic Hazards Mapping Act)

LOS ANGELES QUADRANGLE

OFFICIAL MAP
Released: March 25, 1999

STATE GEOLOGIST

DATA AND METHODOLOGY USED TO DEVELOP THIS MAP ARE PRESENTED IN THE FOLLOWING:

Seismic Hazard Evaluation of the Los Angeles 7.5 minute quadrangle, Los Angeles County, California: California Division of Mines and Geology, Open-File Report 98-20.

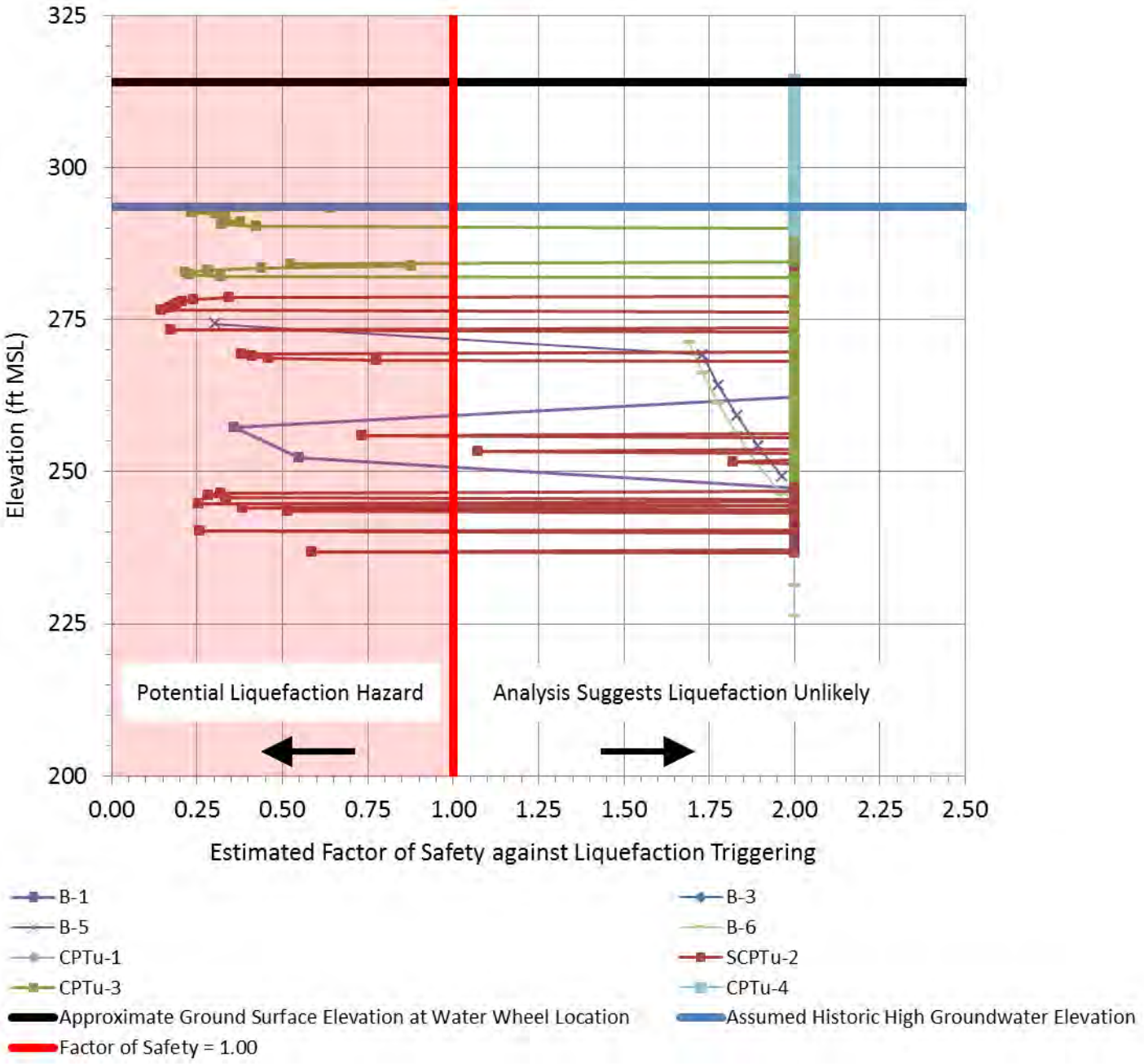
For additional information on seismic hazards in this map area, the rationale used for zoning, and additional references consulted, refer to DMG's World Wide Web site (http://www.consrv.ca.gov/dmg/).

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Geosyntec consultants

APPENDIX L

LIQUEFACTION TRIGGERING ASSESSMENT



Notes:

1. Factor of Safety against liquefaction triggering is calculated based on the methods proposed by Idriss and Boulanger [2008].
2. Fines content is assumed as 25% for SCPTu-2 and CPTu-3.

Geosyntec consultants

LIQUEFACTION TRIGGERING EVALUATION
LOS ANGELES WATER WHEEL
LOS ANGELES, CALIFORNIA

DATE:	**JANUARY 2013**	**FILE NO.**	**AFW**
PROJECT NO.	**LA0257-03**	**FIGURE NO.**	**1**

B-1 (field)

LIQUEFACTION TRIGGERING ANALYSIS
LOS ANGELES WATER WHEEL
LOS ANGELES, CALIFORNIA

Geosyntec consultants

Boring Designation: B-1 (Field)

Input parameters:

Peak ground accel (g) =	0.940		
Earthquake magnitude, M =	6.6		
Water table depth (m) =	11.28	Field Water Table Elevation =	276
Average γ above water table (kN/m^3)	19.0		
Average γ below water table (kN/m^3)	20.0		
Borehole diameter (mm) =	177.8		
Reqires correction for sampler liners (YES/NO):	no		

Rod lengths assumed equal to the depth plus 1.5 m (for the above ground extension).

Legend

- = Manual input cell
- = Formula cell
- red text = Manual input cell with formula used as input (and subject to change)
- = Cell value not relevant for this sheet
- = Factor of Safety meets stability criterion
- = Factor of Safety is over 1.0
- = Factor of Safety is 1.0 or lower

NOTE: There is a significant difference between field water table elevation and assumed historic high water elevation (i.e., about 18 ft). (N1)60 should be calculated for field conditions (using "field" sheet), then used to calculate FS for historic high conditions (using "high" sheet).

Ground Surface Elevation = 313

SPT sample number	Depth (m)	Measured N	Soil Type (USCS)	Flag "Clay" "Unsaturated" "Unreliable"	Fines content (%)	Energy ratio, ER (%)	C_E	C_B	C_R	C_S	N_{60}	σ_{vc} (kPa)	σ_{vc}' (kPa)	C_N	$(N_1)_{60}$	ΔN for fines content	$(N_1)_{60\text{-}cs}$	Stress reduct. coeff. r_d	CSR	MSF for sand	K_σ for sand	CRR for M=7.5 & σ_{vc}'=1atm	CRR	Factor of Safety	Elevation (ft)
2	1.8	52	SM	unsaturated	30	75	1.25	1.15	0.8	1.00	59.8	33	33	1.34	80.1	5.4	85.44	0.99	0.603	1.27	1.10	2.000	n.a.	n.a.	307.25
3	3.3	50	SM	unsaturated	20	75	1.25	1.15	0.85	1.00	61.1	62	62	1.14	69.4	4.5	73.87	0.96	0.589	1.27	1.10	2.000	n.a.	n.a.	302.25
4	4.8	46	SM	unsaturated	20	75	1.25	1.15	0.95	1.00	62.8	91	91	1.03	64.5	4.5	69.00	0.94	0.574	1.27	1.03	2.000	n.a.	n.a.	297.25
5	6.3	46	GP-GM	unsaturated	10	75	1.25	1.15	0.95	1.00	62.8	120	120	0.96	60.0	1.1	61.16	0.91	0.556	1.27	0.95	2.000	n.a.	n.a.	292.25
6	7.8	83	SM	unsaturated	20	75	1.25	1.15	0.95	1.00	113.3	149	149	0.90	102.3	4.5	106.78	0.88	0.538	1.27	0.89	2.000	n.a.	n.a.	287.25
7	9.4	56	SM	unsaturated	30	75	1.25	1.15	1	1.00	80.5	178	178	0.86	69.3	5.4	74.70	0.85	0.519	1.27	0.83	2.000	n.a.	n.a.	282.25
8	10.9	56	SM	unsaturated	33	75	1.25	1.15	1	1.00	80.5	207	207	0.83	66.6	5.5	72.11	0.82	0.500	1.27	0.79	2.000	n.a.	n.a.	277.25
9	12.4	59	SM		10	75	1.25	1.15	1	1.00	84.8	237	226	0.81	68.6	1.1	69.77	0.79	0.504	1.27	0.76	2.000	1.932	2.00	272.25
10	13.9	99	SM		30	75	1.25	1.15	1	1.00	142.3	268	241	0.80	113.1	5.4	118.51	0.75	0.511	1.27	0.74	2.000	1.883	2.00	267.25
11	15.5	83	SM		10	75	1.25	1.15	1	1.00	119.3	298	257	0.78	93.3	1.1	94.47	0.72	0.513	1.27	0.72	2.000	1.836	2.00	262.25
12	17.0	21	SM		6	75	1.25	1.15	1	1.00	30.2	329	273	0.64	19.4	0.0	19.43	0.69	0.511	1.27	0.87	0.199	0.220	0.43	257.25
13	18.5	25	SM		12	75	1.25	1.15	1	1.00	35.9	359	288	0.66	23.8	2.1	25.87	0.67	0.507	1.27	0.82	0.312	0.326	0.64	252.25
14	20.0	62	SM		40	75	1.25	1.15	1	1.00	89.1	390	304	0.75	66.7	5.6	72.29	0.64	0.502	1.27	0.68	2.000	1.711	2.00	247.25

LIQUEFACTION TRIGGERING ANALYSIS
LOS ANGELES WATER WHEEL
LOS ANGELES, CALIFORNIA

Geosyntec consultants

Boring Designation: B-1 (High)

Input parameters:

Peak ground accel (g) =	0.940
Earthquake magnitude, M =	6.6
Water table depth (m) =	5.94
Historic High Water Table Elevation =	293.5
Average γ above water table (kN/m^3)	19.0
Average γ below water table (kN/m^3)	20.0
Borehole diameter (mm) =	177.8
Reqires correction for sampler liners (YES/NO):	no

Rod lengths assumed equal to the depth plus 1.5 m (for the above ground extension).

Legend

- = Manual input cell
- = Formula cell
- red text = Manual input cell with formula used as input (and subject to change)
- = Cell value not relevant for this sheet
- = Factor of Safety meets stability criterion
- = Factor of Safety is over 1.0
- = Factor of Safety is 1.0 or lower

NOTE: There is a significant difference between field water table elevation and assumed historic high water elevation (i.e., about 18 ft). (N1)60 should be calculated for field conditions (using "field" sheet), then used to calculate FS for historic high conditions (using "high" sheet).

Ground Surface Elevation = 313

SPT sample number	Depth (m)	Measured N	Soil Type (USCS)	Flag "Clay" "Unsaturated" "Unreliable"	Fines content (%)	Energy ratio, ER (%)	C_E	C_B	C_R	C_S	N_{60}	σ_{vc} (kPa)	σ_{vc}' (kPa)	C_N	$(N_1)_{60}$	ΔN for fines content	$(N_1)_{60\text{-}cs}$	Stress reduct. coeff. r_d	CSR	MSF for sand	K_σ for sand	CRR for M=7.5 & σ_{vc}'=1atm	CRR	Factor of Safety	Elevation (ft)
2	1.8	52	SM	unsaturated	30	75	1.25	1.15	0.8	1.00	59.8	33	33	1.34	80.1	5.4	85.44	0.99	0.603	1.27	1.10	2.000	n.a.	2.00	307.25
3	3.3	50	SM	unsaturated	20	75	1.25	1.15	0.85	1.00	61.1	62	62	1.14	69.4	4.5	73.87	0.96	0.589	1.27	1.10	2.000	n.a.	2.00	302.25
4	4.8	46	SM	unsaturated	20	75	1.25	1.15	0.95	1.00	62.8	91	91	1.03	64.5	4.5	69.00	0.94	0.574	1.27	1.03	2.000	n.a.	2.00	297.25
5	6.3	46	GP-GM		10	75	1.25	1.15	0.95	1.00	62.8	121	117	0.96	60.0	1.1	61.16	0.91	0.574	1.27	0.96	2.000	2.000	2.00	292.25
6	7.8	83	SM		20	75	1.25	1.15	0.95	1.00	113.3	151	132	0.93	102.3	4.5	106.78	0.88	0.614	1.27	0.92	2.000	2.000	2.00	287.25
7	9.4	56	SM		30	75	1.25	1.15	1	1.00	80.5	182	148	0.90	69.3	5.4	74.70	0.85	0.637	1.27	0.89	2.000	2.000	2.00	282.25
8	10.9	56	SM		33	75	1.25	1.15	1	1.00	80.5	212	163	0.88	66.6	5.5	72.11	0.82	0.648	1.27	0.86	2.000	2.000	2.00	277.25
9	12.4	59	SM		10	75	1.25	1.15	1	1.00	84.8	242	179	0.86	68.6	1.1	69.77	0.79	0.651	1.27	0.83	2.000	2.000	2.00	272.25
10	13.9	99	SM		30	75	1.25	1.15	1	1.00	142.3	273	194	0.84	113.1	5.4	118.51	0.75	0.647	1.27	0.81	2.000	2.000	2.00	267.25
11	15.5	83	SM		10	75	1.25	1.15	1	1.00	119.3	303	210	0.82	93.3	1.1	94.47	0.72	0.639	1.27	0.78	2.000	1.987	2.00	262.25
12	17.0	21	SM		6	75	1.25	1.15	1	1.00	30.2	334	226	0.70	19.4	0.0	19.43	0.69	0.628	1.27	0.90	0.199	0.226	0.36	257.25
13	18.5	25	SM		12	75	1.25	1.15	1	1.00	35.9	364	241	0.71	23.8	2.1	25.87	0.67	0.615	1.27	0.85	0.312	0.338	0.55	252.25
14	20.0	62	SM		40	75	1.25	1.15	1	1.00	89.1	395	257	0.78	66.7	5.6	72.29	0.64	0.602	1.27	0.72	2.000	1.837	2.00	247.25

B-1 (settle)

LIQUEFACTION TRIGGERING ANALYSIS
LOS ANGELES WATER WHEEL
LOS ANGELES, CALIFORNIA

Boring Designation: B-1 (Settlement)

Input parameters:

Peak ground accel (g) =	0.940
Earthquake magnitude, M =	6.6
Water table depth (m) =	5.94
Average γ above water table (kN/m^3)	19.0
Average γ below water table (kN/m^3)	20.0
Borehole diameter (mm) =	177.8
Reqires correction for sampler liners (YES/NO):	no

Rod lengths assumed equal to the depth plus 1.5 m (for the above ground extension).

Legend

	= Manual input cell
	= Formula cell
red text	= Manual input cell with formula used as input (and subject to change)
	= Cell value not relevant for this sheet
	= Factor of Safety meets stability criterion
	= Factor of Safety is over 1.0
	= Factor of Safety is 1.0 or lower

SPT sample number	Depth (m)	Measured N	Soil Type (USCS)	Flag "Clay" "Unsaturated" "Unreliable"	Fines content (%)	Energy ratio, ER (%)	C_E	C_B	C_R	C_S	N_{60}	σ_{vc} (kPa)	σ_{vc}' (kPa)	C_N	$(N_1)_{60}$	ΔN for fines content	$(N_1)_{60\text{-}cs}$	Stress reduct. coeff. r_d	CSR	MSF for sand	K_σ for sand	CRR for M=7.5 & σ_{vc}'=1atm	CRR	Factor of Safety	Limiting shear strain γ_{lim}	Parameter F_α	Maximum shear strain γ_{max}	ΔH_i (m)	ΔLDI_i (m)	Vertical reconsol. Strain ε_v	ΔS_i (m)
2	1.8	52	SM	unsaturated	30	75	1.25	1.15	0.8	1	59.8	33.2994	33.2994	1.339036	80.07433	5.363036	85.43737	0.986358	0.602665	1.267144	1.1	2	n.a.	2	0.000	-4.697	0.000	1.638	0.000	0.000	0.000
3	3.3	50	SM	unsaturated	20	75	1.25	1.15	0.85	1	61.09375	62.2554	62.2554	1.135776	69.38879	4.477874	73.86667	0.964053	0.589037	1.267144	1.1	2	n.a.	2	0.000	-3.640	0.000	1.524	0.000	0.000	0.000
4	4.8	46	SM	unsaturated	20	75	1.25	1.15	0.95	1	62.81875	91.2114	91.2114	1.027185	64.52649	4.477874	69.00437	0.938635	0.573506	1.267144	1.03008	2	n.a.	2	0.000	-3.207	0.000	1.524	0.000	0.000	0.000
5	6.3	46	GP-GM		10	75	1.25	1.15	0.95	1	62.81875	120.5484	116.8108	0.962456	60.01131	1.149185	61.16049	0.910694	0.574239	1.267144	0.957086	2	2	2	0.000	-2.523	0.000	1.524	0.000	0.000	0.000
6	7.8	83	SM		20	75	1.25	1.15	0.95	1	113.3469	151.0284	132.3404	0.93136	102.3019	4.477874	106.7798	0.880847	0.614198	1.267144	0.920254	2	2	2	0.000	-6.719	0.000	1.524	0.000	0.000	0.000
7	9.4	56	SM		30	75	1.25	1.15	1	1	80.5	181.5084	147.8699	0.904563	69.34133	5.363036	74.70437	0.849709	0.637277	1.267144	0.887513	2	2	2	0.000	-3.716	0.000	1.524	0.000	0.000	0.000
8	10.9	56	SM		33	75	1.25	1.15	1	1	80.5	211.9884	163.3995	0.881104	66.64632	5.461056	72.10738	0.817874	0.648319	1.267144	0.858046	2	2	2	0.000	-3.483	0.000	1.524	0.000	0.000	0.000
9	12.4	59	SM		10	75	1.25	1.15	1	1	84.8125	242.4684	178.929	0.860305	68.62219	1.149185	69.77138	0.785901	0.650704	1.267144	0.831255	2	2	2	0.000	-3.275	0.000	1.524	0.000	0.000	0.000
10	13.9	99	SM		30	75	1.25	1.15	1	1	142.3125	272.9484	194.4586	0.84167	113.1491	5.363036	118.5122	0.754302	0.646904	1.267144	0.806696	2	2	2	0.000	-7.863	0.000	1.524	0.000	0.000	0.000
11	15.5	83	SM		10	75	1.25	1.15	1	1	119.3125	303.4284	209.9882	0.824826	93.31923	1.149185	94.46842	0.723528	0.63879	1.267144	0.784025	2	1.986945	2	0.000	-5.542	0.000	1.524	0.000	0.000	0.000
12	17.0	21	SM		6	75	1.25	1.15	1	1	30.1875	333.9084	225.5177	0.699175	19.3996	0.02787	19.42747	0.693972	0.627813	1.267144	0.89514	0.19909	0.225823	0.359697	0.170	0.548	0.170	1.524	0.258	0.024	0.036
13	18.5	25	SM		12	75	1.25	1.15	1	1	35.9375	364.3884	241.0473	0.710209	23.7961	2.072537	25.86863	0.665964	0.615112	1.267144	0.85332	0.312134	0.337504	0.548687	0.080	0.179	0.080	1.524	0.122	0.018	0.028
14	20.0	62	SM		40	75	1.25	1.15	1	1	89.125	394.8684	256.5768	0.782465	66.7185	5.575936	72.29444	0.639773	0.601592	1.267144	0.724898	2	1.837101	2	0.000	-3.499	0.000	1.524	0.000	0.000	0.000

LDI = 0.380 S = 0.064 m

0.21 ft

B-3 (field)

LIQUEFACTION TRIGGERING ANALYSIS
LOS ANGELES WATER WHEEL
LOS ANGELES, CALIFORNIA

Geosyntec consultants

Boring Designation	B-3 (Field)		
Input parameters:			
Peak ground accel (g) =	0.940		
Earthquake magnitude, M =	6.6		
Water table depth (m) =	11.28	Field Water Table Elevation =	276
Average γ above water table (kN/m^3)	19.0		
Average γ below water table (kN/m^3)	20.0		
Borehole diameter (mm) =	177.8		
Reqires correction for sampler liners (YES/NO):	no		

Rod lengths assumed equal to the depth plus 1.5 m (for the above ground extension).

Legend

	= Manual input cell
	= Formula cell
red text	= Manual input cell with formula used as input (and subject to change)
	= Cell value not relevant for this sheet
	= Factor of Safety meets stability criterion
	= Factor of Safety is over 1.0
	= Factor of Safety is 1.0 or lower

NOTE: There is a significant difference between field water table elevation and assumed historic high water elevation (i.e., about 18 ft). (N1)60 should be calculated for field conditions (using "field" sheet), then used to calculate FS for historic high conditions (using "high" sheet).

Ground Surface Elevation = 313

SPT sample number	Depth (m)	Measured N	Soil Type (USCS)	Flag "Clay" "Unsaturated" "Unreliable"	Fines content (%)	Energy ratio, ER (%)	C_E	C_B	C_R	C_S	N_{60}	σ_{vc} (kPa)	σ_{vc}' (kPa)	C_N	$(N_1)_{60}$	ΔN for fines content	$(N_1)_{60\text{-}cs}$	Stress reduct. coeff. r_d	CSR	MSF for sand	K_σ for sand	CRR for M=7.5 & σ_{vc}'=1atm	CRR	Factor of Safety	Elevation (ft)
1	1.8	40	SM	unsaturated	25	75	1.25	1.15	0.8	1.00	46.0	33	33	1.34	61.6	5.1	66.67	0.99	0.603	1.27	1.10	2.000	n.a.	n.a.	307.25
2	3.3	35	SM	unsaturated	20	75	1.25	1.15	0.85	1.00	42.8	62	62	1.14	48.6	4.5	53.05	0.96	0.589	1.27	1.10	2.000	n.a.	n.a.	302.25
3	4.8	55	SM	unsaturated	30	75	1.25	1.15	0.95	1.00	75.1	91	91	1.03	77.2	5.4	82.51	0.94	0.574	1.27	1.03	2.000	n.a.	n.a.	297.25
4	6.3	53	SM	unsaturated	10	75	1.25	1.15	0.95	1.00	72.4	120	120	0.96	69.1	1.1	70.29	0.91	0.556	1.27	0.95	2.000	n.a.	n.a.	292.25
5	7.8	99	SM	unsaturated	10	75	1.25	1.15	0.95	1.00	135.2	149	149	0.90	122.0	1.1	123.17	0.88	0.538	1.27	0.89	2.000	n.a.	n.a.	287.25
8	9.4	55	SM	unsaturated	8	75	1.25	1.15	1	1.00	79.1	178	178	0.86	68.1	0.4	68.47	0.85	0.519	1.27	0.83	2.000	n.a.	n.a.	282.25
9	10.9	99	SM	unsaturated	40	75	1.25	1.15	1	1.00	142.3	207	207	0.83	117.8	5.6	123.40	0.82	0.500	1.27	0.79	2.000	n.a.	n.a.	277.25
10	12.4	99	SM		25	75	1.25	1.15	1	1.00	142.3	237	226	0.81	115.1	5.1	120.22	0.79	0.504	1.27	0.76	2.000	1.932	2.00	272.25

B-3 (high)

LIQUEFACTION TRIGGERING ANALYSIS
LOS ANGELES WATER WHEEL
LOS ANGELES, CALIFORNIA

Geosyntec consultants

Boring Designation: B-3(High)

Input parameters:

Peak ground accel (g) =	0.940
Earthquake magnitude, M =	6.6
Water table depth (m) =	5.94
Historic High Water Table Elevation =	293.5
Average γ above water table (kN/m^3)	19.0
Average γ below water table (kN/m^3)	20.0
Borehole diameter (mm) =	177.8
Reqires correction for sampler liners (YES/NO):	no

Rod lengths assumed equal to the depth plus 1.5 m (for the above ground extension).

Legend

- = Manual input cell
- = Formula cell
- red text = Manual input cell with formula used as input (and subject to change)
- = Cell value not relevant for this sheet
- = Factor of Safety meets stability criterion
- = Factor of Safety is over 1.0
- = Factor of Safety is 1.0 or lower

NOTE: There is a significant difference between field water table elevation and assumed historic high water elevation (i.e., about 18 ft). (N1)60 should be calculated for field conditions (using "field" sheet), then used to calculate FS for historic high conditions (using "high" sheet).

Ground Surface Elevation = 313

SPT sample number	Depth (m)	Measured N	Soil Type (USCS)	Flag "Clay" "Unsaturated" "Unreliable"	Fines content (%)	Energy ratio, ER (%)	C_E	C_B	C_R	C_S	N_{60}	σ_{vc} (kPa)	σ_{vc}' (kPa)	C_N	$(N_1)_{60}$	ΔN for fines content	$(N_1)_{60\text{-}cs}$	Stress reduct. coeff. r_d	CSR	MSF for sand	K_σ for sand	CRR for M=7.5 & σ_{vc}'=1atm	CRR	Factor of Safety	Elevation (ft)
1	1.8	40	SM	unsaturated	25	75	1.25	1.15	0.8	1.00	46.0	33	33	1.34	61.6	5.1	66.67	0.99	0.603	1.27	1.10	2.000	n.a.	2.00	307.25
2	3.3	35	SM	unsaturated	20	75	1.25	1.15	0.85	1.00	42.8	62	62	1.14	48.6	4.5	53.05	0.96	0.589	1.27	1.10	2.000	n.a.	2.00	302.25
3	4.8	55	SM	unsaturated	30	75	1.25	1.15	0.95	1.00	75.1	91	91	1.03	77.2	5.4	82.51	0.94	0.574	1.27	1.03	2.000	n.a.	2.00	297.25
4	6.3	53	SM		10	75	1.25	1.15	0.95	1.00	72.4	121	117	0.96	69.1	1.1	70.29	0.91	0.574	1.27	0.96	2.000	2.000	2.00	292.25
5	7.8	99	SM		10	75	1.25	1.15	0.95	1.00	135.2	151	132	0.93	122.0	1.1	123.17	0.88	0.614	1.27	0.92	2.000	2.000	2.00	287.25
8	9.4	55	SM		8	75	1.25	1.15	1	1.00	79.1	182	148	0.90	68.1	0.4	68.47	0.85	0.637	1.27	0.89	2.000	2.000	2.00	282.25
9	10.9	99	SM		40	75	1.25	1.15	1	1.00	142.3	212	163	0.88	117.8	5.6	123.40	0.82	0.648	1.27	0.86	2.000	2.000	2.00	277.25
10	12.4	99	SM		25	75	1.25	1.15	1	1.00	142.3	242	179	0.86	115.1	5.1	120.22	0.79	0.651	1.27	0.83	2.000	2.000	2.00	272.25

LIQUEFACTION TRIGGERING ANALYSIS
LOS ANGELES WATER WHEEL
LOS ANGELES, CALIFORNIA

Geosyntec consultants

Boring Designation: B-5 (field)

Input parameters:

Peak ground accel (g) =	0.940
Earthquake magnitude, M =	6.6
Water table depth (m) =	0.00
Average γ above water table (kN/m^3)	19.0
Average γ below water table (kN/m^3)	20.0
Borehole diameter (mm) =	203.2
Historic High Water Table Elevation =	280
Reqires correction for sampler liners (YES/NO):	no

Rod lengths assumed equal to the depth plus 1.5 m (for the above ground extension).

Legend

- = Manual input cell
- = Formula cell
- red text = Manual input cell with formula used as input (and subject to change)
- = Cell value not relevant for this sheet
- = Factor of Safety meets stability criterion
- = Factor of Safety is over 1.0
- = Factor of Safety is 1.0 or lower

Ground Surface Elevation = 280

SPT sample number	Depth (m)	Measured N	Soil Type (USCS)	Flag "Clay" "Unsaturated" "Unreliable"	Fines content (%)	Energy ratio, ER (%)	C_E	C_B	C_R	C_S	N_{60}	σ_{vc} (kPa)	σ_{vc}' (kPa)	C_N	$(N_1)_{60}$	ΔN for fines content	$(N_1)_{60\text{-}cs}$	Stress reduct. coeff. r_d	CSR	MSF for sand	K_σ for sand	CRR for M=7.5 & σ_{vc}'=1atm	CRR	Factor of Safety	Elevation (ft)
2	1.8	12	GP		5	75	1.25	1.15	0.8	1.00	13.8	35	18	1.70	23.5	0.0	23.46	0.99	1.183	1.27	1.10	0.258	0.359	0.30	274.25
4	3.3	95	SM		10	75	1.25	1.15	0.85	1.00	116.1	66	33	1.34	155.3	1.1	156.47	0.96	1.156	1.27	1.10	2.000	2.000	1.73	269.25
5	4.8	33	SM		15	75	1.25	1.15	0.95	1.00	45.1	96	49	1.21	54.5	3.3	57.80	0.94	1.126	1.27	1.10	2.000	2.000	1.78	264.25
7	6.3	98	SM		33	75	1.25	1.15	0.95	1.00	133.8	126	64	1.13	150.6	5.5	156.09	0.91	1.092	1.27	1.10	2.000	2.000	1.83	259.25
8	7.8	99	SM		25	75	1.25	1.15	0.95	1.00	135.2	157	80	1.06	143.8	5.1	148.83	0.88	1.056	1.27	1.07	2.000	2.000	1.89	254.25
9	9.4	99	SM		20	75	1.25	1.15	1	1.00	142.3	187	96	1.01	144.4	4.5	148.90	0.85	1.019	1.27	1.02	2.000	2.000	1.96	249.25

LIQUEFACTION TRIGGERING ANALYSIS
LOS ANGELES WATER WHEEL
LOS ANGELES, CALIFORNIA

Geosyntec consultants

Boring Designation	B-5 (Settlement)
Input parameters:	
Peak ground accel (g) =	0.940
Earthquake magnitude, M =	6.6
Water table depth (m) =	0.00
Average γ above water table (kN/m^3)	19.0
Average γ below water table (kN/m^3)	20.0
Borehole diameter (mm) =	203.2
Reqires correction for sampler liners (YES/NO):	no

Rod lengths assumed equal to the depth plus 1.5 m (for the above ground extension).

Legend

- = Manual input cell
- = Formula cell
- red text = Manual input cell with formula used as input (and subject to change)
- = Cell value not relevant for this sheet
- = Factor of Safety meets stability criterion
- = Factor of Safety is over 1.0
- = Factor of Safety is 1.0 or lower

SPT sample number	Depth (m)	Measured N	Soil Type (USCS)	Flag "Clay" "Unsaturated" "Unreliable"	Fines content (%)	Energy ratio, ER (%)	C_E	C_B	C_R	C_S	N_{60}	σ_{vc} (kPa)	σ_{vc}' (kPa)	C_N	$(N_1)_{60}$	ΔN for fines content	$(N_1)_{60\text{-}cs}$	Stress reduct. coeff. r_d	CSR	MSF for sand	K_σ for sand	CRR for M=7.5 & σ_{vc}'=1atm	CRR	Factor of Safety	Limiting shear strain γ_{lim}	Parameter F_α	Maximum shear strain γ_{max}	ΔH_i (m)	ΔLDI_i (m)	Vertical reconsol. Strain ε_v	ΔS_i (m)
2	1.8	12	GP		5	75	1.25	1.15	0.8	1.00	13.8	35	18	1.70	23.46	0.001922	23.46	0.99	1.182856	1.27	1.10	0.257707	0.359207	0.30	0.107	0.324	0.107	1.638	0.175	0.020	0.033
4	3.3	95	SM		10	75	1.25	1.15	0.85	1.00	116.0781	66	33	1.34	155.3234	1.149185	156.47	0.96	1.156107	1.27	1.10	2	2	1.73	0.000	-11.678	0.000	1.524	0.000	0.000	0.000
5	4.8	33	SM		15	75	1.25	1.15	0.95	1.00	45.06563	96	49	1.21	54.53662	3.261489	57.80	0.94	1.125625	1.27	1.10	2	2	1.78	0.000	-2.236	0.000	1.524	0.000	0.000	0.000
7	6.3	98	SM		33	75	1.25	1.15	0.95	1.00	133.8313	126	64	1.13	150.6244	5.461056	156.09	0.91	1.092118	1.27	1.10	2	2	1.83	0.000	-11.639	0.000	1.524	0.000	0.000	0.000
8	7.8	99	SM		25	75	1.25	1.15	0.95	1.00	135.1969	157	80	1.06	143.7589	5.072208	148.83	0.88	1.056325	1.27	1.07	2	2	1.89	0.000	-10.898	0.000	1.524	0.000	0.000	0.000
9	9.4	99	SM		20	75	1.25	1.15	1	1.00	142.3125	187	96	1.01	144.422	4.477874	148.90	0.85	1.018984	1.27	1.02	2	2	1.96	0.000	-10.905	0.000	1.524	0.000	0.000	0.000

LDI = 0.175 S = 0.033 m

0.11 ft

LIQUEFACTION TRIGGERING ANALYSIS
LOS ANGELES WATER WHEEL
LOS ANGELES, CALIFORNIA

Geosyntec consultants

Boring Designation: B-6 (field)

Input parameters:

Peak ground accel (g) = 0.940

Earthquake magnitude, M = 6.6

Water table depth (m) = 0.00

Historic High Water Table Elevation = 277

Average γ above water table (kN/m^3) = 19.0

Average γ below water table (kN/m^3) = 20.0

Borehole diameter (mm) = 203.2

Reqires correction for sampler liners (YES/NO): no

Rod lengths assumed equal to the depth plus 1.5 m (for the above ground extension).

Legend

- = Manual input cell
- = Formula cell
- red text = Manual input cell with formula used as input (and subject to change)
- = Cell value not relevant for this sheet
- = Factor of Safety meets stability criterion
- = Factor of Safety is over 1.0
- = Factor of Safety is 1.0 or lower

Ground Surface Elevation = 277

SPT sample number	Depth (m)	Measured N	Soil Type (USCS)	Flag "Clay" "Unsaturated" "Unreliable"	Fines content (%)	Energy ratio, ER (%)	C_E	C_B	C_R	C_S	N_{60}	σ_{vc} (kPa)	σ_{vc}' (kPa)	C_N	$(N_1)_{60}$	ΔN for fines content	$(N_1)_{60\text{-}cs}$	Stress reduct. coeff. r_d	CSR	MSF for sand	K_σ for sand	CRR for M=7.5 & σ_{vc}'=1atm	CRR	Factor of Safety	Elevation (ft)
1	1.8	19	SM		20	75	1.25	1.15	0.8	1.00	21.9	35	18	1.66	36.3	4.5	40.81	0.99	1.183	1.27	1.10	2.000	2.000	1.69	271.25
2	3.3	23	SM		20	75	1.25	1.15	0.85	1.00	28.1	66	33	1.37	38.4	4.5	42.85	0.96	1.156	1.27	1.10	2.000	2.000	1.73	266.25
3	4.8	57	SP-SM		6	75	1.25	1.15	0.95	1.00	77.8	96	49	1.21	94.2	0.0	94.23	0.94	1.126	1.27	1.10	2.000	2.000	1.78	261.25
4	6.3	31	SM		20	75	1.25	1.15	0.95	1.00	42.3	126	64	1.13	47.6	4.5	52.12	0.91	1.092	1.27	1.10	2.000	2.000	1.83	256.25
5	7.8	54	SM		18	75	1.25	1.15	0.95	1.00	73.7	157	80	1.06	78.4	4.1	82.50	0.88	1.056	1.27	1.07	2.000	2.000	1.89	251.25
6	9.4	52	SM		20	75	1.25	1.15	1	1.00	74.8	187	96	1.01	75.9	4.5	80.34	0.85	1.019	1.27	1.02	2.000	2.000	1.96	246.25
7	10.9	45	SM		40	75	1.25	1.15	1	1.00	64.7	218	111	0.98	63.1	5.6	68.67	0.82	0.981	1.27	0.97	2.000	2.000	2.00	241.25
8	12.4	99	SM		15	75	1.25	1.15	1	1.00	142.3	248	127	0.94	134.1	3.3	137.37	0.79	0.942	1.27	0.93	2.000	2.000	2.00	236.25
9	13.9	99	SW-SM		11	75	1.25	1.15	1	1.00	142.3	279	142	0.91	130.1	1.6	131.70	0.75	0.905	1.27	0.90	2.000	2.000	2.00	231.25
10	15.5	78	SM		10	75	1.25	1.15	1	1.00	112.1	309	158	0.89	99.7	1.1	100.88	0.72	0.868	1.27	0.87	2.000	2.000	2.00	226.25

CPTu-1 (field)

LIQUEFACTION TRIGGERING ANALYSIS
LOS ANGELES WATER WHEEL
LOS ANGELES, CALIFORNIA

Geosyntec consultants

Input Parameters

Boring Designation	CPTu-1 (field)
Ground Surface Elevation (ft)	314
Peak Ground Acceleration (g)	0.94
Earthquake Magnitude, M=	6.6
Water Table Depth (m)	11.58
Field Water Table Elevation =	276
Unit Weight above Water Table (pcf)	120.9
Unit Weight below Water Table (pcf)	127.2

Intermediate Parameters

Unit Weight above Water Table (kN/m^3)	19.0
Unit Weight below Water Table (kN/m^3)	20.0
Magnitude scaling factor, MSF	1.27

Legend

= Manual Input
= Calculated Value
= Calculated Factor of Safety against Liquefaction is over 1.0
= Calculated Factor of Safety against Liquefaction is 1.0 or Lower
red text = Manual input cell with formula used as input (and subject to change)
= Cell value not relevant for this sheet

NOTE: There is a significant difference between field water table elevation and assumed historic high water elevation (i.e., about 18 ft). qc1N should be calculated for field conditions (using "field" sheet), then used to calculate FS for historic high conditions (using "high" sheet).

Depth (m b.g.s.)	Depth (ft b.g.s.)	Elevation (ft)	Tip q_{cN}	F_{sN}	σ_{vc} (kPa)	σ_{vc}' (kPa)	Q	F	I_c	Layer	Flag "clay" or "Unsaturated"	Fines (%)	Interpreted q_{cn} near interfaces	Thin layer factor	Interpreted q_{cn}	C_N	q_{c1N}	qcN1-cs	Stress reduc. coeff, r_d	CSR	K_α for sand	CRR for M=7.5 & σ_{vc}'=1 atm	CRR	Factor of Safety	Potential For Liquefaction
0.100	0.328	313.67			1.90	1.90	-1.00	0.00	#NUM!		unsaturated	25.00			0.00	#NUM!	#NUM!	#NUM!	1.01	0.61	#NUM!	#NUM!	n.a.	n.a.	NO
0.200	0.656	314.34			3.80	3.80	-1.00	0.00	#NUM!		unsaturated	25.00			0.00	1.70	0.00	27.39	1.01	0.61	1.10	0.06	n.a.	n.a.	NO
0.300	0.984	313.02			5.70	5.70	-1.00	0.00	#NUM!		unsaturated	25.00			0.00	1.70	0.00	27.39	1.00	0.61	1.10	0.06	n.a.	n.a.	NO
0.400	1.312	312.69			7.60	7.60	-1.00	0.00	#NUM!		unsaturated	25.00			0.00	1.70	0.00	27.39	1.00	0.61	1.10	0.06	n.a.	n.a.	NO
0.500	1.640	312.36			9.50	9.50	-1.00	0.00	#NUM!		unsaturated	25.00			0.00	1.70	0.00	27.39	1.00	0.61	1.10	0.06	n.a.	n.a.	NO
0.600	1.969	312.03			11.40	11.40	-1.00	0.00	#NUM!		unsaturated	25.00			0.00	1.70	0.00	27.39	1.00	0.61	1.10	0.06	n.a.	n.a.	NO
0.700	2.297	311.70			13.30	13.30	-1.00	0.00	#NUM!		unsaturated	25.00			0.00	1.70	0.00	27.39	1.00	0.61	1.10	0.06	n.a.	n.a.	NO
0.800	2.625	311.38			15.21	15.21	-1.00	0.00	#NUM!		unsaturated	25.00			0.00	1.70	0.00	27.39	1.00	0.61	1.10	0.06	n.a.	n.a.	NO
0.900	2.953	311.05			17.11	17.11	-1.00	0.00	#NUM!		unsaturated	25.00			0.00	1.70	0.00	27.39	1.00	0.61	1.10	0.06	n.a.	n.a.	NO
1.000	3.281	310.72			19.01	19.01	-1.00	0.00	#NUM!		unsaturated	25.00			0.00	1.70	0.00	27.39	1.00	0.61	1.10	0.06	n.a.	n.a.	NO
1.100	3.609	310.39			20.91	20.91	-1.00	0.00	#NUM!		unsaturated	25.00			0.00	1.70	0.00	27.39	0.99	0.61	1.09	0.06	n.a.	n.a.	NO
1.200	3.937	310.06			22.81	22.81	-1.00	0.00	#NUM!		unsaturated	25.00			0.00	1.70	0.00	27.39	0.99	0.61	1.09	0.06	n.a.	n.a.	NO
1.300	4.265	309.73			24.71	24.71	-1.00	0.00	#NUM!		unsaturated	25.00			0.00	1.70	0.00	27.39	0.99	0.61	1.08	0.06	n.a.	n.a.	NO
1.400	4.593	309.41	37.98	0.46	26.61	26.61	143.15	1.21	1.85		unsaturated	25.00			37.98	1.70	64.56	112.42	0.99	0.61	1.10	0.16	n.a.	n.a.	NO
1.500	4.921	309.08	127.22	1.19	28.51	28.51	449.68	0.94	1.45		unsaturated	25.00			127.22	1.40	177.61	261.31	0.99	0.60	1.10	2.00	n.a.	n.a.	NO
1.600	5.249	308.75	127.39	2.34	30.41	30.41	422.08	1.84	1.71		unsaturated	25.00			127.39	1.37	174.85	257.66	0.99	0.60	1.10	2.00	n.a.	n.a.	NO
1.700	5.577	308.42	121.16	2.49	32.31	32.31	377.73	2.06	1.77		unsaturated	25.00			121.16	1.37	165.50	245.35	0.99	0.60	1.10	2.00	n.a.	n.a.	NO
1.800	5.906	308.09	138.03	2.45	34.21	34.21	406.47	1.78	1.70		unsaturated	25.00			138.03	1.33	183.65	269.26	0.99	0.60	1.10	2.00	n.a.	n.a.	NO
1.900	6.234	307.77	177.74	2.08	36.11	36.11	496.10	1.17	1.50		unsaturated	25.00			177.74	1.31	233.14	334.44	0.98	0.60	1.10	2.00	n.a.	n.a.	NO
2.000	6.562	307.44	194.92	2.40	38.01	38.01	516.90	1.23	1.51		unsaturated	25.00			194.92	1.29	252.25	359.60	0.98	0.60	1.10	2.00	n.a.	n.a.	NO
2.100	6.890	307.11	102.95	2.52	39.91	39.91	259.52	2.45	1.92		unsaturated	25.00			102.95	1.34	138.21	209.41	0.98	0.60	1.10	1.83	n.a.	n.a.	NO
2.200	7.218	306.78	113.24	1.82	41.82	41.82	272.53	1.62	1.76		unsaturated	25.00			113.24	1.30	147.72	221.95	0.98	0.60	1.10	2.00	n.a.	n.a.	NO
2.300	7.546	306.45	101.59	1.91	43.72	43.72	233.72	1.89	1.86		unsaturated	25.00			101.59	1.31	133.42	203.10	0.98	0.60	1.10	1.32	n.a.	n.a.	NO
2.400	7.874	306.13	66.15	1.52	45.62	45.62	145.46	2.32	2.05		unsaturated	25.00			66.15	1.38	91.41	147.78	0.98	0.60	1.10	0.26	n.a.	n.a.	NO
2.500	8.202	305.80	84.86	1.05	47.52	47.52	179.38	1.25	1.79		unsaturated	25.00			84.86	1.32	111.76	174.57	0.98	0.60	1.10	0.46	n.a.	n.a.	NO
2.600	8.530	305.47	179.38	1.28	49.42	49.42	365.61	0.71	1.41		unsaturated	25.00			179.38	1.21	216.60	312.66	0.97	0.60	1.10	2.00	n.a.	n.a.	NO
2.700	8.858	305.14	294.33	2.26	51.32	51.32	578.27	0.77	1.31		unsaturated	25.00			294.33	1.20	351.89	490.84	0.97	0.59	1.10	2.00	n.a.	n.a.	NO
2.800	9.186	304.81	370.94	4.75	53.22	53.22	702.97	1.28	1.47		unsaturated	25.00			370.94	1.18	439.25	605.89	0.97	0.59	1.10	2.00	n.a.	n.a.	NO
2.900	9.514	304.49	337.11	2.93	55.12	55.12	616.71	0.87	1.34		unsaturated	25.00			337.11	1.17	395.52	548.29	0.97	0.59	1.10	2.00	n.a.	n.a.	NO
3.000	9.843	304.16	299.19	1.00	57.02	57.02	528.95	0.34	1.06		unsaturated	25.00			299.19	1.16	347.89	485.57	0.97	0.59	1.10	2.00	n.a.	n.a.	NO
3.100	10.171	303.83	292.63	0.72	58.92	58.92	500.60	0.25	0.98		unsaturated	25.00			292.63	1.15	337.33	471.66	0.97	0.59	1.10	2.00	n.a.	n.a.	NO
3.200	10.499	303.50	258.40	1.05	60.82	60.82	428.10	0.41	1.18		unsaturated	25.00			258.40	1.14	295.40	416.44	0.97	0.59	1.10	2.00	n.a.	n.a.	NO
3.300	10.827	303.17	261.01	1.11	62.72	62.72	419.30	0.43	1.20		unsaturated	25.00			261.01	1.13	295.97	417.18	0.96	0.59	1.10	2.00	n.a.	n.a.	NO
3.400	11.155	302.85	272.27	1.19	64.62	64.62	424.53	0.44	1.21		unsaturated	25.00			272.27	1.13	306.31	430.81	0.96	0.59	1.10	2.00	n.a.	n.a.	NO
3.500	11.483	302.52	282.46	1.78	66.52	66.52	427.85	0.63	1.32		unsaturated	25.00			282.46	1.12	315.36	442.72	0.96	0.59	1.10	2.00	n.a.	n.a.	NO
3.600	11.811	302.19	369.40	1.45	68.42	68.42	544.26	0.39	1.10		unsaturated	25.00			369.40	1.11	409.37	566.53	0.96	0.59	1.10	2.00	n.a.	n.a.	NO
3.700	12.139	301.86	344.18	1.03	70.33	70.33	493.31	0.30	1.04		unsaturated	25.00			344.18	1.10	378.67	526.11	0.96	0.58	1.10	2.00	n.a.	n.a.	NO
3.800	12.467	301.53	282.23	2.34	72.23	72.23	393.67	0.83	1.44		unsaturated	25.00			282.23	1.09	308.34	433.48	0.96	0.58	1.10	2.00	n.a.	n.a.	NO
3.900	12.795	301.20	293.01	1.97	74.13	74.13	398.24	0.67	1.36		unsaturated	25.00			293.01	1.09	317.93	446.11	0.95	0.58	1.09	2.00	n.a.	n.a.	NO
4.000	13.123	300.88	271.20	1.51	76.03	76.03	359.29	0.56	1.33		unsaturated	25.00			271.20	1.08	292.31	412.36	0.95	0.58	1.09	2.00	n.a.	n.a.	NO
4.100	13.451	300.55	264.22	1.50	77.93	77.93	341.45	0.57	1.35		unsaturated	25.00			264.22	1.07	282.93	400.02	0.95	0.58	1.08	2.00	n.a.	n.a.	NO
4.200	13.780	300.22	311.93	2.01	79.83	79.83	393.66	0.65	1.35		unsaturated	25.00			311.93	1.06	331.90	464.51	0.95	0.58	1.07	2.00	n.a.	n.a.	NO
4.300	14.108	299.89	351.90	2.38	81.73	81.73	433.87	0.68	1.34		unsaturated	25.00			351.90	1.06	372.11	517.46	0.95	0.58	1.06	2.00	n.a.	n.a.	NO
4.400	14.436	299.56	278.47	2.60	83.63	83.63	335.31	0.94	1.52		unsaturated	25.00			278.47	1.05	292.69	412.86	0.95	0.58	1.06	2.00	n.a.	n.a.	NO
4.500	14.764	299.24	294.56	1.69	85.53	85.53	346.83	0.58	1.35		unsaturated	25.00			294.56	1.04	307.77	432.72	0.94	0.58	1.05	2.00	n.a.	n.a.	NO
4.600	15.092	298.91	339.75	2.37	87.43	87.43	391.47	0.70	1.38		unsaturated	25.00			339.75	1.04	352.93	492.20	0.94	0.58	1.04	2.00	n.a.	n.a.	NO
4.700	15.420	298.58	295.98	1.85	89.33	89.33	333.63	0.63	1.39		unsaturated	25.00			295.98	1.03	305.72	430.02	0.94	0.57	1.04	2.00	n.a.	n.a.	NO
4.800	15.748	298.25	306.36	1.10	91.23	91.23	338.16	0.36	1.22		unsaturated	25.00			306.36	1.03	314.70	441.85	0.94	0.57	1.03	2.00	n.a.	n.a.	NO
4.900	16.076	297.92	322.27	1.02	93.13	93.13	348.49	0.32	1.18		unsaturated	25.00			322.27	1.02	329.24	461.00	0.94	0.57	1.02	2.00	n.a.	n.a.	NO
5.000	16.404	297.60	290.26	1.52	95.03	95.03	307.48	0.53	1.36		unsaturated	25.00			290.26	1.02	294.96	415.85	0.94	0.57	1.02	2.00	n.a.	n.a.	NO
5.100	16.732	297.27	273.19	2.42	96.94	96.94	283.64	0.89	1.55		unsaturated	25.00			273.19	1.01	276.16	391.10	0.93	0.57	1.01	2.00	n.a.	n.a.	NO

LIQUEFACTION TRIGGERING ANALYSIS
LOS ANGELES WATER WHEEL
LOS ANGELES, CALIFORNIA

Geosyntec consultants

5.200	17.060	296.94	392.17	1.69	98.84	98.84	399.76	0.43	1.22		unsaturated	25.00			392.17	1.01	394.42	546.84	0.93	0.57	1.01	2.00	n.a.	n.a.	NO
5.300	17.388	296.61	415.78	2.71	100.74	100.74	415.86	0.65	1.34		unsaturated	25.00			415.78	1.00	416.06	575.35	0.93	0.57	1.00	2.00	n.a.	n.a.	NO
5.400	17.717	296.28	365.18	3.67	102.64	102.64	358.36	1.01	1.53		unsaturated	25.00			365.18	1.00	363.64	506.31	0.93	0.57	1.00	2.00	n.a.	n.a.	NO
5.500	18.045	295.96	317.08	2.73	104.54	104.54	305.35	0.86	1.52		unsaturated	25.00			317.08	0.99	314.22	441.22	0.93	0.57	0.99	2.00	n.a.	n.a.	NO
5.600	18.373	295.63	346.03	2.14	106.44	106.44	327.35	0.62	1.39		unsaturated	25.00			346.03	0.99	341.28	476.86	0.92	0.56	0.98	2.00	n.a.	n.a.	NO
5.700	18.701	295.30	411.96	2.18	108.34	108.34	383.05	0.53	1.30		unsaturated	25.00			411.96	0.98	404.40	559.99	0.92	0.56	0.98	2.00	n.a.	n.a.	NO
5.800	19.029	294.97	506.25	2.12	110.24	110.24	462.82	0.42	1.17		unsaturated	25.00			506.25	0.98	494.69	678.91	0.92	0.56	0.97	2.00	n.a.	n.a.	NO
5.900	19.357	294.64	500.10	2.40	112.14	112.14	449.42	0.48	1.22		unsaturated	25.00			500.10	0.97	486.49	668.10	0.92	0.56	0.97	2.00	n.a.	n.a.	NO
6.000	19.685	294.31	472.67	1.41	114.04	114.04	417.62	0.30	1.10		unsaturated	25.00			472.67	0.97	457.77	630.28	0.92	0.56	0.96	2.00	n.a.	n.a.	NO
6.100	20.013	293.99	428.93	0.62	115.94	115.94	372.65	0.15	0.98		unsaturated	25.00			428.93	0.96	413.60	572.10	0.91	0.56	0.96	2.00	n.a.	n.a.	NO
6.200	20.341	293.66	438.62	1.02	117.84	117.84	374.93	0.23	1.07		unsaturated	25.00			438.62	0.96	421.13	582.02	0.91	0.56	0.95	2.00	n.a.	n.a.	NO
6.300	20.669	293.33	472.15	0.90	119.74	119.74	397.24	0.19	1.01		unsaturated	25.00			472.15	0.96	451.41	621.91	0.91	0.56	0.95	2.00	n.a.	n.a.	NO
6.400	20.997	293.00	468.89	1.74	121.64	121.64	388.31	0.37	1.18		unsaturated	25.00			468.89	0.95	446.43	615.35	0.91	0.56	0.94	2.00	n.a.	n.a.	NO
6.500	21.325	292.67	452.62	2.07	123.54	123.54	369.02	0.46	1.26		unsaturated	25.00			452.62	0.95	429.19	592.63	0.91	0.55	0.94	2.00	n.a.	n.a.	NO
6.600	21.654	292.35	421.90	2.05	125.45	125.45	338.69	0.49	1.31		unsaturated	25.00			421.90	0.94	398.46	552.16	0.91	0.55	0.93	2.00	n.a.	n.a.	NO
6.700	21.982	292.02	478.58	2.02	127.35	127.35	378.57	0.42	1.23		unsaturated	25.00			478.58	0.94	450.19	620.30	0.90	0.55	0.93	2.00	n.a.	n.a.	NO
6.800	22.310	291.69	494.05	4.59	129.25	129.25	385.07	0.93	1.48		unsaturated	25.00			494.05	0.94	462.93	637.07	0.90	0.55	0.93	2.00	n.a.	n.a.	NO
6.900	22.638	291.36	440.65	3.55	131.15	131.15	338.36	0.81	1.47		unsaturated	25.00			440.65	0.93	411.31	569.09	0.90	0.55	0.92	2.00	n.a.	n.a.	NO
7.000	22.966	291.03	424.94	3.13	133.05	133.05	321.58	0.74	1.45		unsaturated	25.00			424.94	0.93	395.14	547.79	0.90	0.55	0.92	2.00	n.a.	n.a.	NO
7.100	23.294	290.71	369.43	3.87	134.95	134.95	275.50	1.05	1.61		unsaturated	25.00			369.43	0.93	342.24	478.13	0.90	0.55	0.91	2.00	n.a.	n.a.	NO
7.200	23.622	290.38	364.80	3.85	136.85	136.85	268.24	1.06	1.62		unsaturated	25.00			364.80	0.92	336.71	470.84	0.89	0.55	0.91	2.00	n.a.	n.a.	NO
7.300	23.950	290.05	351.75	2.79	138.75	138.75	255.05	0.80	1.55		unsaturated	25.00			351.75	0.92	323.48	453.42	0.89	0.54	0.90	2.00	n.a.	n.a.	NO
7.400	24.278	289.72	384.23	2.16	140.65	140.65	274.91	0.56	1.42		unsaturated	25.00			384.23	0.92	352.08	491.09	0.89	0.54	0.90	2.00	n.a.	n.a.	NO
7.500	24.606	289.39	420.88	1.29	142.55	142.55	297.20	0.31	1.22		unsaturated	25.00			420.88	0.91	384.31	533.53	0.89	0.54	0.90	2.00	n.a.	n.a.	NO
7.600	24.934	289.07	417.61	1.33	144.45	144.45	290.99	0.32	1.24		unsaturated	25.00			417.61	0.91	379.99	527.84	0.89	0.54	0.89	2.00	n.a.	n.a.	NO
7.700	25.262	288.74	423.19	1.97	146.35	146.35	291.05	0.47	1.34		unsaturated	25.00			423.19	0.91	383.74	532.78	0.88	0.54	0.89	2.00	n.a.	n.a.	NO
7.800	25.591	288.41	388.54	1.73	148.25	148.25	263.70	0.45	1.36		unsaturated	25.00			388.54	0.90	351.12	489.83	0.88	0.54	0.88	2.00	n.a.	n.a.	NO
7.900	25.919	288.08	337.32	1.15	150.15	150.15	225.89	0.34	1.35		unsaturated	25.00			337.32	0.90	303.81	427.51	0.88	0.54	0.88	2.00	n.a.	n.a.	NO
8.000	26.247	287.75	224.49	1.41	152.06	152.06	148.11	0.63	1.65		unsaturated	25.00			224.49	0.90	201.52	292.80	0.88	0.54	0.88	2.00	n.a.	n.a.	NO
8.100	26.575	287.43	157.39	2.39	153.96	153.96	102.25	1.54	2.03		unsaturated	25.00			157.39	0.87	137.63	208.66	0.88	0.54	0.88	1.76	n.a.	n.a.	NO
8.200	26.903	287.10	198.71	2.35	155.86	155.86	127.77	1.19	1.88		unsaturated	25.00			198.71	0.89	177.22	260.80	0.87	0.53	0.87	2.00	n.a.	n.a.	NO
8.300	27.231	286.77	249.63	2.64	157.76	157.76	158.82	1.06	1.78		unsaturated	25.00			249.63	0.89	221.92	319.66	0.87	0.53	0.87	2.00	n.a.	n.a.	NO
8.400	27.559	286.44	296.14	2.89	159.66	159.66	186.34	0.98	1.71		unsaturated	25.00			296.14	0.89	262.44	373.02	0.87	0.53	0.86	2.00	n.a.	n.a.	NO
8.500	27.887	286.11	311.98	2.89	161.56	161.56	194.04	0.93	1.68		unsaturated	25.00			311.98	0.88	275.61	390.38	0.87	0.53	0.86	2.00	n.a.	n.a.	NO
8.600	28.215	285.78	353.22	1.69	163.46	163.46	217.25	0.48	1.45		unsaturated	25.00			353.22	0.88	311.09	437.10	0.87	0.53	0.86	2.00	n.a.	n.a.	NO
8.700	28.543	285.46	378.70	1.74	165.36	165.36	230.31	0.46	1.42		unsaturated	25.00			378.70	0.88	332.52	465.32	0.86	0.53	0.85	2.00	n.a.	n.a.	NO
8.800	28.871	285.13	390.33	2.07	167.26	167.26	234.70	0.53	1.45		unsaturated	25.00			390.33	0.88	341.69	477.40	0.86	0.53	0.85	2.00	n.a.	n.a.	NO
8.900	29.199	284.80	367.50	2.83	169.16	169.16	218.42	0.77	1.58		unsaturated	25.00			367.50	0.87	320.75	449.82	0.86	0.53	0.85	2.00	n.a.	n.a.	NO
9.000	29.528	284.47	371.07	2.68	171.06	171.06	218.09	0.72	1.56		unsaturated	25.00			371.07	0.87	322.91	452.67	0.86	0.52	0.84	2.00	n.a.	n.a.	NO
9.100	29.856	284.14	584.93	2.22	172.96	172.96	340.57	0.38	1.23		unsaturated	25.00			584.93	0.87	507.54	695.82	0.86	0.52	0.84	2.00	n.a.	n.a.	NO
9.200	30.184	283.82	673.49	1.78	174.86	174.86	388.00	0.27	1.09		unsaturated	25.00			673.49	0.87	582.69	794.80	0.85	0.52	0.84	2.00	n.a.	n.a.	NO

CPTu-1 (high)

LIQUEFACTION TRIGGERING ANALYSIS
LOS ANGELES WATER WHEEL
LOS ANGELES, CALIFORNIA

Geosyntec consultants

Input Parameters

Boring Designation	CPTu-1 (high)
Ground Surface Elevation (ft)	314
Peak Ground Acceleration (g)	0.94
Earthquake Magnitude, M=	6.6
Water Table Depth (m)	6.25
Historic High Water Table Elevation =	293.5
Unit Weight above Water Table (pcf)	120.9
Unit Weight below Water Table (pcf)	127.2

Intermediate Parameters

Unit Weight above Water Table (kN/m^3)	19.0
Unit Weight below Water Table (kN/m^3)	20.0
Magnitude scaling factor, MSF	1.27

Legend

= Manual Input
= Calculated Value
= Calculated Factor of Safety against Liquefaction is over 1.0
= Calculated Factor of Safety against Liquefaction is 1.0 or Lower
red text = Manual input cell with formula used as input (and subject to change)
= Cell value not relevant for this sheet

NOTE: There is a significant difference between field water table elevation and assumed historic high water elevation (i.e., about 18 ft). qc1N should be calculated for field conditions (using "field" sheet), then used to calculate FS for historic high conditions (using "high" sheet).

Depth (m b.g.s.)	Depth (ft b.g.s.)	Elevation (ft)	Tip q_{cN}	F_{sN}	σ_{vc} (kPa)	σ_{vc}' (kPa)	Q	F	I_c	Layer	Flag "clay" or "Unsaturated"	Fines (%)	Interpreted q_{cn} near interfaces	Thin layer factor	Interpreted q_{cn}	C_N	q_{c1N}	qcN1-cs	Stress reduc. coeff, r_d	CSR	K_α for sand	CRR for M=7.5 & σ_{vc}'=1 atm	CRR	Factor of Safety	Potential For Liquefaction
0.100	0.328	313.67	0.00	0.00	1.90	1.90	-1.00	0.00	#NUM!	0.00	unsaturated	25.00	0.00	0.00	0.00	#NUM!	#NUM!	#NUM!	1.01	0.61	#NUM!	#NUM!	n.a.	2.00	NO
0.200	0.656	314.34	0.00	0.00	3.80	3.80	-1.00	0.00	#NUM!	0.00	unsaturated	25.00	0.00	0.00	0.00	1.70	0.00	27.39	1.01	0.61	1.10	0.06	n.a.	2.00	NO
0.300	0.984	313.02	0.00	0.00	5.70	5.70	-1.00	0.00	#NUM!	0.00	unsaturated	25.00	0.00	0.00	0.00	1.70	0.00	27.39	1.00	0.61	1.10	0.06	n.a.	2.00	NO
0.400	1.312	312.69	0.00	0.00	7.60	7.60	-1.00	0.00	#NUM!	0.00	unsaturated	25.00	0.00	0.00	0.00	1.70	0.00	27.39	1.00	0.61	1.10	0.06	n.a.	2.00	NO
0.500	1.640	312.36	0.00	0.00	9.50	9.50	-1.00	0.00	#NUM!	0.00	unsaturated	25.00	0.00	0.00	0.00	1.70	0.00	27.39	1.00	0.61	1.10	0.06	n.a.	2.00	NO
0.600	1.969	312.03	0.00	0.00	11.40	11.40	-1.00	0.00	#NUM!	0.00	unsaturated	25.00	0.00	0.00	0.00	1.70	0.00	27.39	1.00	0.61	1.10	0.06	n.a.	2.00	NO
0.700	2.297	311.70	0.00	0.00	13.30	13.30	-1.00	0.00	#NUM!	0.00	unsaturated	25.00	0.00	0.00	0.00	1.70	0.00	27.39	1.00	0.61	1.10	0.06	n.a.	2.00	NO
0.800	2.625	311.38	0.00	0.00	15.21	15.21	-1.00	0.00	#NUM!	0.00	unsaturated	25.00	0.00	0.00	0.00	1.70	0.00	27.39	1.00	0.61	1.10	0.06	n.a.	2.00	NO
0.900	2.953	311.05	0.00	0.00	17.11	17.11	-1.00	0.00	#NUM!	0.00	unsaturated	25.00	0.00	0.00	0.00	1.70	0.00	27.39	1.00	0.61	1.10	0.06	n.a.	2.00	NO
1.000	3.281	310.72	0.00	0.00	19.01	19.01	-1.00	0.00	#NUM!	0.00	unsaturated	25.00	0.00	0.00	0.00	1.70	0.00	27.39	1.00	0.61	1.10	0.06	n.a.	2.00	NO
1.100	3.609	310.39	0.00	0.00	20.91	20.91	-1.00	0.00	#NUM!	0.00	unsaturated	25.00	0.00	0.00	0.00	1.70	0.00	27.39	0.99	0.61	1.09	0.06	n.a.	2.00	NO
1.200	3.937	310.06	0.00	0.00	22.81	22.81	-1.00	0.00	#NUM!	0.00	unsaturated	25.00	0.00	0.00	0.00	1.70	0.00	27.39	0.99	0.61	1.09	0.06	n.a.	2.00	NO
1.300	4.265	309.73	0.00	0.00	24.71	24.71	-1.00	0.00	#NUM!	0.00	unsaturated	25.00	0.00	0.00	0.00	1.70	0.00	27.39	0.99	0.61	1.08	0.06	n.a.	2.00	NO
1.400	4.593	309.41	37.98	0.46	26.61	26.61	143.15	1.21	1.85	0.00	unsaturated	25.00	0.00	0.00	37.98	1.70	64.56	112.42	0.99	0.61	1.10	0.16	n.a.	2.00	NO
1.500	4.921	309.08	127.22	1.19	28.51	28.51	449.68	0.94	1.45	0.00	unsaturated	25.00	0.00	0.00	127.22	1.40	177.61	261.31	0.99	0.60	1.10	2.00	n.a.	2.00	NO
1.600	5.249	308.75	127.39	2.34	30.41	30.41	422.08	1.84	1.71	0.00	unsaturated	25.00	0.00	0.00	127.39	1.37	174.85	257.66	0.99	0.60	1.10	2.00	n.a.	2.00	NO
1.700	5.577	308.42	121.16	2.49	32.31	32.31	377.73	2.06	1.77	0.00	unsaturated	25.00	0.00	0.00	121.16	1.37	165.50	245.35	0.99	0.60	1.10	2.00	n.a.	2.00	NO
1.800	5.906	308.09	138.03	2.45	34.21	34.21	406.47	1.78	1.70	0.00	unsaturated	25.00	0.00	0.00	138.03	1.33	183.65	269.26	0.99	0.60	1.10	2.00	n.a.	2.00	NO
1.900	6.234	307.77	177.74	2.08	36.11	36.11	496.10	1.17	1.50	0.00	unsaturated	25.00	0.00	0.00	177.74	1.31	233.14	334.44	0.98	0.60	1.10	2.00	n.a.	2.00	NO
2.000	6.562	307.44	194.92	2.40	38.01	38.01	516.90	1.23	1.51	0.00	unsaturated	25.00	0.00	0.00	194.92	1.29	252.25	359.60	0.98	0.60	1.10	2.00	n.a.	2.00	NO
2.100	6.890	307.11	102.95	2.52	39.91	39.91	259.52	2.45	1.92	0.00	unsaturated	25.00	0.00	0.00	102.95	1.34	138.21	209.41	0.98	0.60	1.10	1.83	n.a.	2.00	NO
2.200	7.218	306.78	113.24	1.82	41.82	41.82	272.53	1.62	1.76	0.00	unsaturated	25.00	0.00	0.00	113.24	1.30	147.72	221.95	0.98	0.60	1.10	2.00	n.a.	2.00	NO
2.300	7.546	306.45	101.59	1.91	43.72	43.72	233.72	1.89	1.86	0.00	unsaturated	25.00	0.00	0.00	101.59	1.31	133.42	203.10	0.98	0.60	1.10	1.32	n.a.	2.00	NO
2.400	7.874	306.13	66.15	1.52	45.62	45.62	145.46	2.32	2.05	0.00	unsaturated	25.00	0.00	0.00	66.15	1.38	91.41	147.78	0.98	0.60	1.10	0.26	n.a.	2.00	NO
2.500	8.202	305.80	84.86	1.05	47.52	47.52	179.38	1.25	1.79	0.00	unsaturated	25.00	0.00	0.00	84.86	1.32	111.76	174.57	0.98	0.60	1.10	0.46	n.a.	2.00	NO
2.600	8.530	305.47	179.38	1.28	49.42	49.42	365.61	0.71	1.41	0.00	unsaturated	25.00	0.00	0.00	179.38	1.21	216.60	312.66	0.97	0.60	1.10	2.00	n.a.	2.00	NO
2.700	8.858	305.14	294.33	2.26	51.32	51.32	578.27	0.77	1.31	0.00	unsaturated	25.00	0.00	0.00	294.33	1.20	351.89	490.84	0.97	0.59	1.10	2.00	n.a.	2.00	NO
2.800	9.186	304.81	370.94	4.75	53.22	53.22	702.97	1.28	1.47	0.00	unsaturated	25.00	0.00	0.00	370.94	1.18	439.25	605.89	0.97	0.59	1.10	2.00	n.a.	2.00	NO
2.900	9.514	304.49	337.11	2.93	55.12	55.12	616.71	0.87	1.34	0.00	unsaturated	25.00	0.00	0.00	337.11	1.17	395.52	548.29	0.97	0.59	1.10	2.00	n.a.	2.00	NO
3.000	9.843	304.16	299.19	1.00	57.02	57.02	528.95	0.34	1.06	0.00	unsaturated	25.00	0.00	0.00	299.19	1.16	347.89	485.57	0.97	0.59	1.10	2.00	n.a.	2.00	NO
3.100	10.171	303.83	292.63	0.72	58.92	58.92	500.60	0.25	0.98	0.00	unsaturated	25.00	0.00	0.00	292.63	1.15	337.33	471.66	0.97	0.59	1.10	2.00	n.a.	2.00	NO
3.200	10.499	303.50	258.40	1.05	60.82	60.82	428.10	0.41	1.18	0.00	unsaturated	25.00	0.00	0.00	258.40	1.14	295.40	416.44	0.97	0.59	1.10	2.00	n.a.	2.00	NO
3.300	10.827	303.17	261.01	1.11	62.72	62.72	419.30	0.43	1.20	0.00	unsaturated	25.00	0.00	0.00	261.01	1.13	295.97	417.18	0.96	0.59	1.10	2.00	n.a.	2.00	NO
3.400	11.155	302.85	272.27	1.19	64.62	64.62	424.53	0.44	1.21	0.00	unsaturated	25.00	0.00	0.00	272.27	1.13	306.31	430.81	0.96	0.59	1.10	2.00	n.a.	2.00	NO
3.500	11.483	302.52	282.46	1.78	66.52	66.52	427.85	0.63	1.32	0.00	unsaturated	25.00	0.00	0.00	282.46	1.12	315.36	442.72	0.96	0.59	1.10	2.00	n.a.	2.00	NO
3.600	11.811	302.19	369.40	1.45	68.42	68.42	544.26	0.39	1.10	0.00	unsaturated	25.00	0.00	0.00	369.40	1.11	409.37	566.53	0.96	0.59	1.10	2.00	n.a.	2.00	NO
3.700	12.139	301.86	344.18	1.03	70.33	70.33	493.31	0.30	1.04	0.00	unsaturated	25.00	0.00	0.00	344.18	1.10	378.67	526.11	0.96	0.58	1.10	2.00	n.a.	2.00	NO
3.800	12.467	301.53	282.23	2.34	72.23	72.23	393.67	0.83	1.44	0.00	unsaturated	25.00	0.00	0.00	282.23	1.09	308.34	433.48	0.96	0.58	1.10	2.00	n.a.	2.00	NO
3.900	12.795	301.20	293.01	1.97	74.13	74.13	398.24	0.67	1.36	0.00	unsaturated	25.00	0.00	0.00	293.01	1.09	317.93	446.11	0.95	0.58	1.09	2.00	n.a.	2.00	NO
4.000	13.123	300.88	271.20	1.51	76.03	76.03	359.29	0.56	1.33	0.00	unsaturated	25.00	0.00	0.00	271.20	1.08	292.31	412.36	0.95	0.58	1.09	2.00	n.a.	2.00	NO
4.100	13.451	300.55	264.22	1.50	77.93	77.93	341.45	0.57	1.35	0.00	unsaturated	25.00	0.00	0.00	264.22	1.07	282.93	400.02	0.95	0.58	1.08	2.00	n.a.	2.00	NO
4.200	13.780	300.22	311.93	2.01	79.83	79.83	393.66	0.65	1.35	0.00	unsaturated	25.00	0.00	0.00	311.93	1.06	331.90	464.51	0.95	0.58	1.07	2.00	n.a.	2.00	NO
4.300	14.108	299.89	351.90	2.38	81.73	81.73	433.87	0.68	1.34	0.00	unsaturated	25.00	0.00	0.00	351.90	1.06	372.11	517.46	0.95	0.58	1.06	2.00	n.a.	2.00	NO
4.400	14.436	299.56	278.47	2.60	83.63	83.63	335.31	0.94	1.52	0.00	unsaturated	25.00	0.00	0.00	278.47	1.05	292.69	412.86	0.95	0.58	1.06	2.00	n.a.	2.00	NO
4.500	14.764	299.24	294.56	1.69	85.53	85.53	346.83	0.58	1.35	0.00	unsaturated	25.00	0.00	0.00	294.56	1.04	307.77	432.72	0.94	0.58	1.05	2.00	n.a.	2.00	NO
4.600	15.092	298.91	339.75	2.37	87.43	87.43	391.47	0.70	1.38	0.00	unsaturated	25.00	0.00	0.00	339.75	1.04	352.93	492.20	0.94	0.58	1.04	2.00	n.a.	2.00	NO
4.700	15.420	298.58	295.98	1.85	89.33	89.33	333.63	0.63	1.39	0.00	unsaturated	25.00	0.00	0.00	295.98	1.03	305.72	430.02	0.94	0.57	1.04	2.00	n.a.	2.00	NO
4.800	15.748	298.25	306.36	1.10	91.23	91.23	338.16	0.36	1.22	0.00	unsaturated	25.00	0.00	0.00	306.36	1.03	314.70	441.85	0.94	0.57	1.03	2.00	n.a.	2.00	NO
4.900	16.076	297.92	322.27	1.02	93.13	93.13	348.49	0.32	1.18	0.00	unsaturated	25.00	0.00	0.00	322.27	1.02	329.24	461.00	0.94	0.57	1.02	2.00	n.a.	2.00	NO
5.000	16.404	297.60	290.26	1.52	95.03	95.03	307.48	0.53	1.36	0.00	unsaturated	25.00	0.00	0.00	290.26	1.02	294.96	415.85	0.94	0.57	1.02	2.00	n.a.	2.00	NO
5.100	16.732	297.27	273.19	2.42	96.94	96.94	283.64	0.89	1.55	0.00	unsaturated	25.00	0.00	0.00	273.19	1.01	276.16	391.10	0.93	0.57	1.01	2.00	n.a.	2.00	NO

LIQUEFACTION TRIGGERING ANALYSIS
LOS ANGELES WATER WHEEL
LOS ANGELES, CALIFORNIA

Geosyntec consultants

5.200	17.060	296.94	392.17	1.69	98.84	98.84	399.76	0.43	1.22	0.00	unsaturated	25.00	0.00	0.00	392.17	1.01	394.42	546.84	0.93	0.57	1.01	2.00	n.a.	2.00	NO
5.300	17.388	296.61	415.78	2.71	100.74	100.74	415.86	0.65	1.34	0.00	unsaturated	25.00	0.00	0.00	415.78	1.00	416.06	575.35	0.93	0.57	1.00	2.00	n.a.	2.00	NO
5.400	17.717	296.28	365.18	3.67	102.64	102.64	358.36	1.01	1.53	0.00	unsaturated	25.00	0.00	0.00	365.18	1.00	363.64	506.31	0.93	0.57	1.00	2.00	n.a.	2.00	NO
5.500	18.045	295.96	317.08	2.73	104.54	104.54	305.35	0.86	1.52	0.00	unsaturated	25.00	0.00	0.00	317.08	0.99	314.22	441.22	0.93	0.57	0.99	2.00	n.a.	2.00	NO
5.600	18.373	295.63	346.03	2.14	106.44	106.44	327.35	0.62	1.39	0.00	unsaturated	25.00	0.00	0.00	346.03	0.99	341.28	476.86	0.92	0.56	0.98	2.00	n.a.	2.00	NO
5.700	18.701	295.30	411.96	2.18	108.34	108.34	383.05	0.53	1.30	0.00	unsaturated	25.00	0.00	0.00	411.96	0.98	404.40	559.99	0.92	0.56	0.98	2.00	n.a.	2.00	NO
5.800	19.029	294.97	506.25	2.12	110.24	110.24	462.82	0.42	1.17	0.00	unsaturated	25.00	0.00	0.00	506.25	0.98	494.69	678.91	0.92	0.56	0.97	2.00	n.a.	2.00	NO
5.900	19.357	294.64	500.10	2.40	112.14	112.14	449.42	0.48	1.22	0.00	unsaturated	25.00	0.00	0.00	500.10	0.97	486.49	668.10	0.92	0.56	0.97	2.00	n.a.	2.00	NO
6.000	19.685	294.31	472.67	1.41	114.04	114.04	417.62	0.30	1.10	0.00	unsaturated	25.00	0.00	0.00	472.67	0.97	457.77	630.28	0.92	0.56	0.96	2.00	n.a.	2.00	NO
6.100	20.013	293.99	428.93	0.62	115.94	115.94	372.65	0.15	0.98	0.00	unsaturated	25.00	0.00	0.00	428.93	0.96	413.60	572.10	0.91	0.56	0.96	2.00	n.a.	2.00	NO
6.200	20.341	293.66	438.62	1.02	117.84	117.84	374.93	0.23	1.07	0.00	unsaturated	25.00	0.00	0.00	438.62	0.96	421.13	582.02	0.91	0.56	0.95	2.00	n.a.	2.00	NO
6.300	20.669	293.33	472.15	0.90	119.74	119.24	397.24	0.19	1.01	0.00		25.00	0.00	0.00	472.15	0.96	451.41	621.91	0.91	0.56	0.95	2.00	2.00	2.00	NO
6.400	20.997	293.00	468.89	1.74	121.64	120.16	388.31	0.37	1.18	0.00		25.00	0.00	0.00	468.89	0.96	446.43	615.35	0.91	0.56	0.95	2.00	2.00	2.00	NO
6.500	21.325	292.67	452.62	2.07	123.54	121.08	369.02	0.46	1.26	0.00		25.00	0.00	0.00	452.62	0.95	429.19	592.63	0.91	0.57	0.95	2.00	2.00	2.00	NO
6.600	21.654	292.35	421.90	2.05	125.45	122.00	338.69	0.49	1.31	0.00		25.00	0.00	0.00	421.90	0.95	398.46	552.16	0.91	0.57	0.94	2.00	2.00	2.00	NO
6.700	21.982	292.02	478.58	2.02	127.35	122.92	378.57	0.42	1.23	0.00		25.00	0.00	0.00	478.58	0.95	450.19	620.30	0.90	0.57	0.94	2.00	2.00	2.00	NO
6.800	22.310	291.69	494.05	4.59	129.25	123.84	385.07	0.93	1.48	0.00		25.00	0.00	0.00	494.05	0.95	462.93	637.07	0.90	0.57	0.94	2.00	2.00	2.00	NO
6.900	22.638	291.36	440.65	3.55	131.15	124.76	338.36	0.81	1.47	0.00		25.00	0.00	0.00	440.65	0.95	411.31	569.09	0.90	0.58	0.94	2.00	2.00	2.00	NO
7.000	22.966	291.03	424.94	3.13	133.05	125.67	321.58	0.74	1.45	0.00		25.00	0.00	0.00	424.94	0.94	395.14	547.79	0.90	0.58	0.93	2.00	2.00	2.00	NO
7.100	23.294	290.71	369.43	3.87	134.95	126.59	275.50	1.05	1.61	0.00		25.00	0.00	0.00	369.43	0.94	342.24	478.13	0.90	0.58	0.93	2.00	2.00	2.00	NO
7.200	23.622	290.38	364.80	3.85	136.85	127.51	268.24	1.06	1.62	0.00		25.00	0.00	0.00	364.80	0.94	336.71	470.84	0.89	0.59	0.93	2.00	2.00	2.00	NO
7.300	23.950	290.05	351.75	2.79	138.75	128.43	255.05	0.80	1.55	0.00		25.00	0.00	0.00	351.75	0.94	323.48	453.42	0.89	0.59	0.93	2.00	2.00	2.00	NO
7.400	24.278	289.72	384.23	2.16	140.65	129.35	274.91	0.56	1.42	0.00		25.00	0.00	0.00	384.23	0.94	352.08	491.09	0.89	0.59	0.93	2.00	2.00	2.00	NO
7.500	24.606	289.39	420.88	1.29	142.55	130.27	297.20	0.31	1.22	0.00		25.00	0.00	0.00	420.88	0.94	384.31	533.53	0.89	0.59	0.92	2.00	2.00	2.00	NO
7.600	24.934	289.07	417.61	1.33	144.45	131.19	290.99	0.32	1.24	0.00		25.00	0.00	0.00	417.61	0.93	379.99	527.84	0.89	0.60	0.92	2.00	2.00	2.00	NO
7.700	25.262	288.74	423.19	1.97	146.35	132.11	291.05	0.47	1.34	0.00		25.00	0.00	0.00	423.19	0.93	383.74	532.78	0.88	0.60	0.92	2.00	2.00	2.00	NO
7.800	25.591	288.41	388.54	1.73	148.25	133.03	263.70	0.45	1.36	0.00		25.00	0.00	0.00	388.54	0.93	351.12	489.83	0.88	0.60	0.92	2.00	2.00	2.00	NO
7.900	25.919	288.08	337.32	1.15	150.15	133.95	225.89	0.34	1.35	0.00		25.00	0.00	0.00	337.32	0.93	303.81	427.51	0.88	0.60	0.92	2.00	2.00	2.00	NO
8.000	26.247	287.75	224.49	1.41	152.06	134.87	148.11	0.63	1.65	0.00		25.00	0.00	0.00	224.49	0.93	201.52	292.80	0.88	0.60	0.91	2.00	2.00	2.00	NO
8.100	26.575	287.43	157.39	2.39	153.96	135.79	102.25	1.54	2.03	0.00		25.00	0.00	0.00	157.39	0.91	137.63	208.66	0.88	0.61	0.91	1.76	2.00	2.00	NO
8.200	26.903	287.10	198.71	2.35	155.86	136.71	127.77	1.19	1.88	0.00		25.00	0.00	0.00	198.71	0.92	177.22	260.80	0.87	0.61	0.91	2.00	2.00	2.00	NO
8.300	27.231	286.77	249.63	2.64	157.76	137.63	158.82	1.06	1.78	0.00		25.00	0.00	0.00	249.63	0.92	221.92	319.66	0.87	0.61	0.91	2.00	2.00	2.00	NO
8.400	27.559	286.44	296.14	2.89	159.66	138.55	186.34	0.98	1.71	0.00		25.00	0.00	0.00	296.14	0.92	262.44	373.02	0.87	0.61	0.91	2.00	2.00	2.00	NO
8.500	27.887	286.11	311.98	2.89	161.56	139.47	194.04	0.93	1.68	0.00		25.00	0.00	0.00	311.98	0.92	275.61	390.38	0.87	0.61	0.90	2.00	2.00	2.00	NO
8.600	28.215	285.78	353.22	1.69	163.46	140.39	217.25	0.48	1.45	0.00		25.00	0.00	0.00	353.22	0.92	311.09	437.10	0.87	0.62	0.90	2.00	2.00	2.00	NO
8.700	28.543	285.46	378.70	1.74	165.36	141.31	230.31	0.46	1.42	0.00		25.00	0.00	0.00	378.70	0.92	332.52	465.32	0.86	0.62	0.90	2.00	2.00	2.00	NO
8.800	28.871	285.13	390.33	2.07	167.26	142.23	234.70	0.53	1.45	0.00		25.00	0.00	0.00	390.33	0.91	341.69	477.40	0.86	0.62	0.90	2.00	2.00	2.00	NO
8.900	29.199	284.80	367.50	2.83	169.16	143.15	218.42	0.77	1.58	0.00		25.00	0.00	0.00	367.50	0.91	320.75	449.82	0.86	0.62	0.90	2.00	2.00	2.00	NO
9.000	29.528	284.47	371.07	2.68	171.06	144.07	218.09	0.72	1.56	0.00		25.00	0.00	0.00	371.07	0.91	322.91	452.67	0.86	0.62	0.89	2.00	2.00	2.00	NO
9.100	29.856	284.14	584.93	2.22	172.96	144.99	340.57	0.38	1.23	0.00		25.00	0.00	0.00	584.93	0.91	507.54	695.82	0.86	0.62	0.89	2.00	2.00	2.00	NO
9.200	30.184	283.82	673.49	1.78	174.86	145.91	388.00	0.27	1.09	0.00		25.00	0.00	0.00	673.49	0.91	582.69	794.80	0.85	0.62	0.89	2.00	2.00	2.00	NO

SCPTu-2 (field)

LIQUEFACTION TRIGGERING ANALYSIS
LOS ANGELES WATER WHEEL
LOS ANGELES, CALIFORNIA

Geosyntec consultants

Input Parameters

Boring Designation	SCPTu-2 (field)
Ground Surface Elevation (ft)	313
Peak Ground Acceleration (g)	0.94
Earthquake Magnitude, M=	6.6
Water Table Depth (m)	11.28
Field Water Table Elevation =	276
Unit Weight above Water Table (pcf)	120.9
Unit Weight below Water Table (pcf)	127.2

Intermediate Parameters

Unit Weight above Water Table (kN/m^3)	19.0
Unit Weight below Water Table (kN/m^3)	20.0
Magnitude scaling factor, MSF	1.27

Legend

= Manual Input
= Calculated Value
= Calculated Factor of Safety against Liquefaction is over 1.0
= Calculated Factor of Safety against Liquefaction is 1.0 or Lower
red text = Manual input cell with formula used as input (and subject to change)
= Cell value not relevant for this sheet

NOTE: There is a significant difference between field water table elevation and assumed historic high water elevation (i.e., about 18 ft). qc1N should be calculated for field conditions (using "field" sheet), then used to calculate FS for historic high conditions (using "high" sheet).

Depth (m b.g.s.)	Depth (ft b.g.s.)	Elevation (ft)	Tip q_{cN}	F_{sN}	σ_{vc} (kPa)	σ_{vc}' (kPa)	Q	F	I_c	Layer	Flag "clay" or "Unsaturated"	Fines (%)	Interpreted q_{cn} near interfaces	Thin layer factor	Interpreted q_{cn}	C_N	q_{c1N}	qcN1-cs	Stress reduc. coeff, r_d	CSR	K_α for sand	CRR for M=7.5 & σ_{vc}'=1 atm	CRR	Factor of Safety	Potential For Liquefaction
0.100	0.328	312.67			1.90	1.90	-1.00	0.00	#NUM!		unsaturated	25.00			0.00	1.70	0.00	27.39	1.01	0.61	1.10	0.06	n.a.	n.a.	NO
0.200	0.656	314.34			3.80	3.80	-1.00	0.00	#NUM!		unsaturated	25.00			0.00	1.70	0.00	27.39	1.01	0.61	1.10	0.06	n.a.	n.a.	NO
0.300	0.984	312.02			5.70	5.70	-1.00	0.00	#NUM!		unsaturated	25.00			0.00	1.70	0.00	27.39	1.00	0.61	1.10	0.06	n.a.	n.a.	NO
0.400	1.312	311.69			7.60	7.60	-1.00	0.00	#NUM!		unsaturated	25.00			0.00	1.70	0.00	27.39	1.00	0.61	1.10	0.06	n.a.	n.a.	NO
0.500	1.640	311.36			9.50	9.50	-1.00	0.00	#NUM!		unsaturated	25.00			0.00	1.70	0.00	27.39	1.00	0.61	1.10	0.06	n.a.	n.a.	NO
0.600	1.969	311.03			11.40	11.40	-1.00	0.00	#NUM!		unsaturated	25.00			0.00	1.70	0.00	27.39	1.00	0.61	1.10	0.06	n.a.	n.a.	NO
0.700	2.297	310.70			13.30	13.30	-1.00	0.00	#NUM!		unsaturated	25.00			0.00	1.70	0.00	27.39	1.00	0.61	1.10	0.06	n.a.	n.a.	NO
0.800	2.625	310.38			15.21	15.21	-1.00	0.00	#NUM!		unsaturated	25.00			0.00	1.70	0.00	27.39	1.00	0.61	1.10	0.06	n.a.	n.a.	NO
0.900	2.953	310.05			17.11	17.11	-1.00	0.00	#NUM!		unsaturated	25.00			0.00	1.70	0.00	27.39	1.00	0.61	1.10	0.06	n.a.	n.a.	NO
1.000	3.281	309.72			19.01	19.01	-1.00	0.00	#NUM!		unsaturated	25.00			0.00	1.70	0.00	27.39	1.00	0.61	1.10	0.06	n.a.	n.a.	NO
1.100	3.609	309.39			20.91	20.91	-1.00	0.00	#NUM!		unsaturated	25.00			0.00	1.70	0.00	27.39	0.99	0.61	1.09	0.06	n.a.	n.a.	NO
1.200	3.937	309.06			22.81	22.81	-1.00	0.00	#NUM!		unsaturated	25.00			0.00	1.70	0.00	27.39	0.99	0.61	1.09	0.06	n.a.	n.a.	NO
1.300	4.265	308.73			24.71	24.71	-1.00	0.00	#NUM!		unsaturated	25.00			0.00	1.70	0.00	27.39	0.99	0.61	1.08	0.06	n.a.	n.a.	NO
1.400	4.593	308.41			26.61	26.61	-1.00	0.00	#NUM!		unsaturated	25.00			0.00	1.70	0.00	27.39	0.99	0.61	1.08	0.06	n.a.	n.a.	NO
1.500	4.921	308.08	143.54	0.91	28.51	28.51	507.52	0.63	1.28		unsaturated	25.00			143.54	1.40	200.41	291.33	0.99	0.60	1.10	2.00	n.a.	n.a.	NO
1.600	5.249	307.75	414.12	2.35	30.41	30.41	1374.36	0.57	1.03		unsaturated	25.00			414.12	1.37	568.40	775.98	0.99	0.60	1.10	2.00	n.a.	n.a.	NO
1.700	5.577	307.42	373.85	2.32	32.31	32.31	1167.58	0.62	1.09		unsaturated	25.00			373.85	1.35	504.99	692.46	0.99	0.60	1.10	2.00	n.a.	n.a.	NO
1.800	5.906	307.09	318.15	2.07	34.21	34.21	938.22	0.65	1.15		unsaturated	25.00			318.15	1.33	423.31	584.90	0.99	0.60	1.10	2.00	n.a.	n.a.	NO
1.900	6.234	306.77	269.86	1.23	36.11	36.11	753.75	0.46	1.06		unsaturated	25.00			269.86	1.31	353.98	493.59	0.98	0.60	1.10	2.00	n.a.	n.a.	NO
2.000	6.562	306.44	228.59	1.43	38.01	38.01	606.34	0.63	1.23		unsaturated	25.00			228.59	1.29	295.81	416.97	0.98	0.60	1.10	2.00	n.a.	n.a.	NO
2.100	6.890	306.11	205.23	1.20	39.91	39.91	518.31	0.59	1.24		unsaturated	25.00			205.23	1.28	262.18	372.69	0.98	0.60	1.10	2.00	n.a.	n.a.	NO
2.200	7.218	305.78	176.84	0.71	41.82	41.82	426.15	0.40	1.18		unsaturated	25.00			176.84	1.26	223.17	321.31	0.98	0.60	1.10	2.00	n.a.	n.a.	NO
2.300	7.546	305.45	150.79	0.90	43.72	43.72	347.39	0.60	1.36		unsaturated	25.00			150.79	1.25	188.07	275.09	0.98	0.60	1.10	2.00	n.a.	n.a.	NO
2.400	7.874	305.13	133.92	1.06	45.62	45.62	295.51	0.80	1.50		unsaturated	25.00			133.92	1.24	166.29	246.40	0.98	0.60	1.10	2.00	n.a.	n.a.	NO
2.500	8.202	304.80	119.83	0.91	47.52	47.52	253.70	0.76	1.53		unsaturated	25.00			119.83	1.25	149.99	224.93	0.98	0.60	1.10	2.00	n.a.	n.a.	NO
2.600	8.530	304.47	112.53	0.70	49.42	49.42	228.99	0.62	1.50		unsaturated	25.00			112.53	1.25	140.74	212.75	0.97	0.60	1.10	2.00	n.a.	n.a.	NO
2.700	8.858	304.14	108.65	0.67	51.32	51.32	212.84	0.62	1.52		unsaturated	25.00			108.65	1.24	135.16	205.39	0.97	0.59	1.10	1.48	n.a.	n.a.	NO
2.800	9.186	303.81	102.37	0.61	53.22	53.22	193.29	0.60	1.55		unsaturated	25.00			102.37	1.24	127.02	194.68	0.97	0.59	1.10	0.90	n.a.	n.a.	NO
2.900	9.514	303.49	95.78	0.98	55.12	55.12	174.51	1.03	1.74		unsaturated	25.00			95.78	1.24	118.55	183.52	0.97	0.59	1.10	0.60	n.a.	n.a.	NO
3.000	9.843	303.16	107.50	1.26	57.02	57.02	189.41	1.18	1.76		unsaturated	25.00			107.50	1.21	129.93	198.51	0.97	0.59	1.10	1.06	n.a.	n.a.	NO
3.100	10.171	302.83	122.55	0.36	58.92	58.92	209.08	0.30	1.34		unsaturated	25.00			122.55	1.18	144.57	217.79	0.97	0.59	1.10	2.00	n.a.	n.a.	NO
3.200	10.499	302.50	136.87	0.02	60.82	60.82	226.28	0.01	1.28		unsaturated	25.00			136.87	1.16	158.14	235.67	0.97	0.59	1.10	2.00	n.a.	n.a.	NO
3.300	10.827	302.17	140.66	0.02	62.72	62.72	225.50	0.01	1.29		unsaturated	25.00			140.66	1.14	160.79	239.16	0.96	0.59	1.10	2.00	n.a.	n.a.	NO
3.400	11.155	301.85	152.06	0.24	64.62	64.62	236.65	0.16	1.17		unsaturated	25.00			152.06	1.13	171.17	252.82	0.96	0.59	1.10	2.00	n.a.	n.a.	NO
3.500	11.483	301.52	169.64	0.97	66.52	66.52	256.55	0.57	1.44		unsaturated	25.00			169.64	1.12	189.39	276.82	0.96	0.59	1.10	2.00	n.a.	n.a.	NO
3.600	11.811	301.19	160.19	1.81	68.42	68.42	235.45	1.13	1.68		unsaturated	25.00			160.19	1.11	177.52	261.19	0.96	0.59	1.10	2.00	n.a.	n.a.	NO
3.700	12.139	300.86	173.15	2.04	70.33	70.33	247.68	1.18	1.68		unsaturated	25.00			173.15	1.10	190.50	278.29	0.96	0.58	1.10	2.00	n.a.	n.a.	NO
3.800	12.467	300.53	240.47	2.46	72.23	72.23	335.27	1.03	1.55		unsaturated	25.00			240.47	1.09	262.71	373.39	0.96	0.58	1.10	2.00	n.a.	n.a.	NO
3.900	12.795	300.20	247.46	2.63	74.13	74.13	336.17	1.06	1.56		unsaturated	25.00			247.46	1.09	268.50	381.01	0.95	0.58	1.09	2.00	n.a.	n.a.	NO
4.000	13.123	299.88	235.60	1.21	76.03	76.03	311.99	0.52	1.35		unsaturated	25.00			235.60	1.08	253.93	361.82	0.95	0.58	1.09	2.00	n.a.	n.a.	NO
4.100	13.451	299.55	207.76	0.86	77.93	77.93	268.27	0.41	1.34		unsaturated	25.00			207.76	1.07	222.47	320.39	0.95	0.58	1.08	2.00	n.a.	n.a.	NO
4.200	13.780	299.22	214.25	1.00	79.83	79.83	270.08	0.47	1.37		unsaturated	25.00			214.25	1.06	227.97	327.63	0.95	0.58	1.07	2.00	n.a.	n.a.	NO
4.300	14.108	298.89	222.82	1.05	81.73	81.73	274.36	0.47	1.37		unsaturated	25.00			222.82	1.06	235.62	337.71	0.95	0.58	1.06	2.00	n.a.	n.a.	NO
4.400	14.436	298.56	246.29	1.43	83.63	83.63	296.44	0.58	1.40		unsaturated	25.00			246.29	1.05	258.86	368.31	0.95	0.58	1.06	2.00	n.a.	n.a.	NO
4.500	14.764	298.24	268.36	1.91	85.53	85.53	315.89	0.71	1.45		unsaturated	25.00			268.36	1.04	280.39	396.67	0.94	0.58	1.05	2.00	n.a.	n.a.	NO
4.600	15.092	297.91	327.73	2.40	87.43	87.43	377.59	0.73	1.41		unsaturated	25.00			327.73	1.04	340.44	475.75	0.94	0.58	1.04	2.00	n.a.	n.a.	NO
4.700	15.420	297.58	308.29	1.77	89.33	89.33	347.56	0.57	1.35		unsaturated	25.00			308.29	1.03	318.44	446.78	0.94	0.57	1.04	2.00	n.a.	n.a.	NO
4.800	15.748	297.25	312.22	1.39	91.23	91.23	344.65	0.45	1.28		unsaturated	25.00			312.22	1.03	320.71	449.77	0.94	0.57	1.03	2.00	n.a.	n.a.	NO
4.900	16.076	296.92	350.47	1.77	93.13	93.13	379.07	0.51	1.28		unsaturated	25.00			350.47	1.02	358.05	498.95	0.94	0.57	1.02	2.00	n.a.	n.a.	NO
5.000	16.404	296.60	321.70	2.74	95.03	95.03	340.90	0.86	1.49		unsaturated	25.00			321.70	1.02	326.91	457.94	0.94	0.57	1.02	2.00	n.a.	n.a.	NO
5.100	16.732	296.27	326.70	2.37	96.94	96.94	339.40	0.73	1.43		unsaturated	25.00			326.70	1.01	330.26	462.35	0.93	0.57	1.01	2.00	n.a.	n.a.	NO

LIQUEFACTION TRIGGERING ANALYSIS
LOS ANGELES WATER WHEEL
LOS ANGELES, CALIFORNIA

Geosyntec consultants

5.200	17.060	295.94	333.61	2.27	98.84	98.84	339.91	0.68	1.41		unsaturated	25.00			333.61	1.01	335.52	469.27	0.93	0.57	1.01	2.00	n.a.	n.a.	NO
5.300	17.388	295.61	388.78	2.01	100.74	100.74	388.80	0.52	1.28		unsaturated	25.00			388.78	1.00	389.05	539.77	0.93	0.57	1.00	2.00	n.a.	n.a.	NO
5.400	17.717	295.28	391.78	1.52	102.64	102.64	384.53	0.39	1.20		unsaturated	25.00			391.78	1.00	390.12	541.18	0.93	0.57	1.00	2.00	n.a.	n.a.	NO
5.500	18.045	294.96	400.76	1.96	104.54	104.54	386.20	0.49	1.27		unsaturated	25.00			400.76	0.99	397.14	550.43	0.93	0.57	0.99	2.00	n.a.	n.a.	NO
5.600	18.373	294.63	349.17	2.27	106.44	106.44	330.33	0.65	1.40		unsaturated	25.00			349.17	0.99	344.37	480.93	0.92	0.56	0.98	2.00	n.a.	n.a.	NO
5.700	18.701	294.30	414.11	2.40	108.34	108.34	385.06	0.58	1.32		unsaturated	25.00			414.11	0.98	406.52	562.78	0.92	0.56	0.98	2.00	n.a.	n.a.	NO
5.800	19.029	293.97	537.14	2.24	110.24	110.24	491.12	0.42	1.15		unsaturated	25.00			537.14	0.98	524.88	718.66	0.92	0.56	0.97	2.00	n.a.	n.a.	NO
5.900	19.357	293.64	491.71	2.15	112.14	112.14	441.86	0.44	1.19		unsaturated	25.00			491.71	0.97	478.32	657.35	0.92	0.56	0.97	2.00	n.a.	n.a.	NO
6.000	19.685	293.31	511.54	2.68	114.04	114.04	452.04	0.53	1.24		unsaturated	25.00			511.54	0.97	495.41	679.85	0.92	0.56	0.96	2.00	n.a.	n.a.	NO
6.100	20.013	292.99	530.60	2.25	115.94	115.94	461.22	0.42	1.17		unsaturated	25.00			530.60	0.96	511.64	701.22	0.91	0.56	0.96	2.00	n.a.	n.a.	NO
6.200	20.341	292.66	471.79	2.30	117.84	117.84	403.36	0.49	1.25		unsaturated	25.00			471.79	0.96	452.98	623.97	0.91	0.56	0.95	2.00	n.a.	n.a.	NO
6.300	20.669	292.33	443.19	2.30	119.74	119.74	372.82	0.52	1.30		unsaturated	25.00			443.19	0.96	423.73	585.45	0.91	0.56	0.95	2.00	n.a.	n.a.	NO
6.400	20.997	292.00	428.60	2.27	121.64	121.64	354.86	0.53	1.32		unsaturated	25.00			428.60	0.95	408.08	564.83	0.91	0.56	0.94	2.00	n.a.	n.a.	NO
6.500	21.325	291.67	421.47	1.55	123.54	123.54	343.56	0.37	1.22		unsaturated	25.00			421.47	0.95	399.65	553.73	0.91	0.55	0.94	2.00	n.a.	n.a.	NO
6.600	21.654	291.35	382.12	1.48	125.45	125.45	306.65	0.39	1.27		unsaturated	25.00			382.12	0.94	360.88	502.67	0.91	0.55	0.93	2.00	n.a.	n.a.	NO
6.700	21.982	291.02	359.63	1.91	127.35	127.35	284.23	0.53	1.39		unsaturated	25.00			359.63	0.94	338.30	472.93	0.90	0.55	0.93	2.00	n.a.	n.a.	NO
6.800	22.310	290.69	358.15	1.87	129.25	129.25	278.88	0.52	1.39		unsaturated	25.00			358.15	0.94	335.59	469.37	0.90	0.55	0.93	2.00	n.a.	n.a.	NO
6.900	22.638	290.36	340.69	1.88	131.15	131.15	261.38	0.55	1.43		unsaturated	25.00			340.69	0.93	318.01	446.21	0.90	0.55	0.92	2.00	n.a.	n.a.	NO
7.000	22.966	290.03	339.81	2.55	133.05	133.05	256.96	0.75	1.53		unsaturated	25.00			339.81	0.93	315.98	443.54	0.90	0.55	0.92	2.00	n.a.	n.a.	NO
7.100	23.294	289.71	424.87	2.91	134.95	134.95	316.99	0.69	1.43		unsaturated	25.00			424.87	0.93	393.60	545.76	0.90	0.55	0.91	2.00	n.a.	n.a.	NO
7.200	23.622	289.38	413.62	1.69	136.85	136.85	304.27	0.41	1.29		unsaturated	25.00			413.62	0.92	381.76	530.18	0.89	0.55	0.91	2.00	n.a.	n.a.	NO
7.300	23.950	289.05	309.34	1.97	138.75	138.75	224.18	0.64	1.52		unsaturated	25.00			309.34	0.92	284.48	402.05	0.89	0.54	0.90	2.00	n.a.	n.a.	NO
7.400	24.278	288.72	290.96	1.84	140.65	140.65	207.94	0.63	1.54		unsaturated	25.00			290.96	0.92	266.62	378.53	0.89	0.54	0.90	2.00	n.a.	n.a.	NO
7.500	24.606	288.39	278.71	1.10	142.55	142.55	196.47	0.40	1.43		unsaturated	25.00			278.71	0.91	254.49	362.55	0.89	0.54	0.90	2.00	n.a.	n.a.	NO
7.600	24.934	288.07	264.16	0.66	144.45	144.45	183.70	0.25	1.36		unsaturated	25.00			264.16	0.91	240.36	343.95	0.89	0.54	0.89	2.00	n.a.	n.a.	NO
7.700	25.262	287.74	213.44	0.76	146.35	146.35	146.30	0.36	1.52		unsaturated	25.00			213.44	0.91	193.54	282.29	0.88	0.54	0.89	2.00	n.a.	n.a.	NO
7.800	25.591	287.41	183.38	1.10	148.25	148.25	123.93	0.61	1.70		unsaturated	25.00			183.38	0.90	165.06	244.77	0.88	0.54	0.88	2.00	n.a.	n.a.	NO
7.900	25.919	287.08	190.55	1.26	150.15	150.15	127.17	0.67	1.72		unsaturated	25.00			190.55	0.90	171.57	253.35	0.88	0.54	0.88	2.00	n.a.	n.a.	NO
8.000	26.247	286.75	210.28	1.01	152.06	152.06	138.67	0.48	1.61		unsaturated	25.00			210.28	0.90	188.76	275.99	0.88	0.54	0.88	2.00	n.a.	n.a.	NO
8.100	26.575	286.43	251.15	1.11	153.96	153.96	163.76	0.44	1.53		unsaturated	25.00			251.15	0.89	224.72	323.34	0.88	0.54	0.87	2.00	n.a.	n.a.	NO
8.200	26.903	286.10	294.86	1.08	155.86	155.86	190.08	0.37	1.43		unsaturated	25.00			294.86	0.89	262.97	373.73	0.87	0.53	0.87	2.00	n.a.	n.a.	NO
8.300	27.231	285.77	277.29	1.24	157.76	157.76	176.53	0.45	1.50		unsaturated	25.00			277.29	0.89	246.51	352.05	0.87	0.53	0.87	2.00	n.a.	n.a.	NO
8.400	27.559	285.44	224.97	1.01	159.66	159.66	141.31	0.45	1.58		unsaturated	25.00			224.97	0.89	199.36	289.96	0.87	0.53	0.86	2.00	n.a.	n.a.	NO
8.500	27.887	285.11	228.64	0.51	161.56	161.56	141.94	0.23	1.44		unsaturated	25.00			228.64	0.88	201.99	293.41	0.87	0.53	0.86	2.00	n.a.	n.a.	NO
8.600	28.215	284.78	271.41	0.93	163.46	163.46	166.70	0.34	1.46		unsaturated	25.00			271.41	0.88	239.04	342.20	0.87	0.53	0.86	2.00	n.a.	n.a.	NO
8.700	28.543	284.46	280.10	1.04	165.36	165.36	170.08	0.37	1.47		unsaturated	25.00			280.10	0.88	245.94	351.30	0.86	0.53	0.85	2.00	n.a.	n.a.	NO
8.800	28.871	284.13	271.86	0.97	167.26	167.26	163.16	0.36	1.48		unsaturated	25.00			271.86	0.88	237.99	340.82	0.86	0.53	0.85	2.00	n.a.	n.a.	NO
8.900	29.199	283.80	293.86	0.84	169.16	169.16	174.45	0.29	1.40		unsaturated	25.00			293.86	0.87	256.48	365.17	0.86	0.53	0.85	2.00	n.a.	n.a.	NO
9.000	29.528	283.47	319.70	0.94	171.06	171.06	187.76	0.30	1.38		unsaturated	25.00			319.70	0.87	278.21	393.80	0.86	0.52	0.84	2.00	n.a.	n.a.	NO
9.100	29.856	283.14	276.98	1.70	172.96	172.96	160.74	0.62	1.62		unsaturated	25.00			276.98	0.87	240.33	343.91	0.86	0.52	0.84	2.00	n.a.	n.a.	NO
9.200	30.184	282.82	250.99	1.56	174.86	174.86	143.97	0.62	1.66		unsaturated	25.00			250.99	0.87	217.15	313.38	0.85	0.52	0.84	2.00	n.a.	n.a.	NO
9.300	30.512	282.49	235.26	1.29	176.76	176.76	133.42	0.55	1.65		unsaturated	25.00			235.26	0.86	202.96	294.69	0.85	0.52	0.83	2.00	n.a.	n.a.	NO
9.400	30.840	282.16	228.89	1.24	178.66	178.66	128.39	0.55	1.66		unsaturated	25.00			228.89	0.86	196.91	286.73	0.85	0.52	0.83	2.00	n.a.	n.a.	NO
9.500	31.168	281.83	221.84	1.25	180.57	180.57	123.09	0.57	1.69		unsaturated	25.00			221.84	0.86	190.32	278.04	0.85	0.52	0.83	2.00	n.a.	n.a.	NO
9.600	31.496	281.50	217.87	1.48	182.47	182.47	119.60	0.68	1.75		unsaturated	25.00			217.87	0.86	186.39	272.87	0.84	0.52	0.82	2.00	n.a.	n.a.	NO
9.700	31.824	281.18	402.36	1.10	184.37	184.37	219.42	0.27	1.31		unsaturated	25.00			402.36	0.85	343.29	479.51	0.84	0.52	0.82	2.00	n.a.	n.a.	NO
9.800	32.152	280.85	522.44	2.44	186.27	186.27	282.28	0.47	1.35		unsaturated	25.00			522.44	0.85	444.53	612.85	0.84	0.51	0.82	2.00	n.a.	n.a.	NO
9.900	32.480	280.52	497.15	2.25	188.17	188.17	265.85	0.46	1.37		unsaturated	25.00			497.15	0.85	421.89	583.02	0.84	0.51	0.81	2.00	n.a.	n.a.	NO
10.000	32.808	280.19	435.96	2.25	190.07	190.07	230.66	0.52	1.45		unsaturated	25.00			435.96	0.85	368.98	513.35	0.84	0.51	0.81	2.00	n.a.	n.a.	NO
10.100	33.136	279.86	395.50	2.57	191.97	191.97	207.08	0.65	1.55		unsaturated	25.00			395.50	0.84	333.86	467.08	0.83	0.51	0.81	2.00	n.a.	n.a.	NO
10.200	33.465	279.54	369.40	1.52	193.87	193.87	191.45	0.41	1.45		unsaturated	25.00			369.40	0.84	311.02	437.00	0.83	0.51	0.80	2.00	n.a.	n.a.	NO
10.300	33.793	279.21	295.95	1.25	195.77	195.77	151.68	0.42	1.54		unsaturated	25.00			295.95	0.84	248.53	354.71	0.83	0.51	0.80	2.00	n.a.	n.a.	NO
10.400	34.121	278.88	171.17	0.81	197.67	197.67	86.46	0.48	1.78		unsaturated	25.00			171.17	0.81	138.36	209.61	0.83	0.51	0.80	1.85	n.a.	n.a.	NO
10.500	34.449	278.55	99.15	0.31	199.57	199.57	49.18	0.32	1.92		unsaturated	25.00			99.15	0.74	72.98	123.50	0.83	0.50	0.91	0.19	n.a.	n.a.	NO
10.600	34.777	278.22	69.67	0.14	201.47	201.47	33.93	0.20	2.01		unsaturated	25.00			69.67	0.70	48.74	91.58	0.82	0.50	0.93	0.13	n.a.	n.a.	NO
10.700	35.105	277.90	56.78	0.17	203.37	203.37	27.20	0.31	2.15		unsaturated	25.00			56.78	0.68	38.61	78.24	0.82	0.50	0.94	0.11	n.a.	n.a.	NO
10.800	35.433	277.57	50.39	0.38	205.27	205.27	23.79	0.79	2.37		unsaturated	25.00			50.39	0.67	33.67	71.73	0.82	0.50	0.94	0.10	n.a.	n.a.	NO
10.900	35.761	277.24	47.18	0.50	207.17	207.17	22.00	1.11	2.48		unsaturated	25.00			47.18	0.66	31.14	68.41	0.82	0.50	0.94	0.10	n.a.	n.a.	NO
11.000	36.089	276.91	41.21	0.20	209.08	209.08	18.91	0.50	2.38		unsaturated	25.00			41.21	0.65	26.71	62.56	0.82	0.50	0.94	0.09	n.a.	n.a.	NO
11.100	36.417	276.58	26.35	0.04	210.98	210.98	11.61	0.18	2.45		unsaturated	25.00			26.35	0.62	16.42	49.01	0.81	0.50	0.95	0.08	n.a.	n.a.	NO
11.200	36.745	276.25	17.69	0.03	212.88	212.88	7.39	0.19	2.65		clay	25.00			17.69	0.82	n.a.	n.a.	0.81	0.50	0.78	n.a.	n.a.	2.00	NO
11.300	37.073	275.93	15.94	0.02	214.78	214.56	6.50	0.17	2.70		clay	25.00			15.94	0.82	n.a.	n.a.	0.81	0.50	0.77	n.a.	n.a.	2.00	NO
11.400	37.402	275.60	14.24	0.02	216.68	215.48	5.67	0.16	2.75		clay	25.00			14.24	0.82	n.a.	n.a.	0.81	0.50	0.77	n.a.	n.a.	2.00	NO
11.500	37.730	275.27	13.05	0.02	218.58	216.40	5.08	0.17	2.80		clay	25.00			13.05	0.82	n.a.	n.a.	0.81	0.50	0.77	n.a.	n.a.	2.00	NO
11.600	38.058	274.94	11.98	0.02	220.48	217.32	4.55	0.19	2.86		clay	25.00			11.98	0.82	n.a.	n.a.	0.80	0.50	0.77	n.a.	n.a.	2.00	NO
11.700	38.386	274.61	11.57	0.02	222.38	218.24	4.34	0.20	2.88		clay	25.00			11.57	0.82	n.a.	n.a.	0.80	0.50	0.77	n.a.	n.a.	2.00	NO
11.800	38.714	274.29	11.81	0.02	224.28	219.16	4.42	0.20	2.87		clay	25.00			11.81	0.82	n.a.	n.a.	0.80	0.50	0.77	n.a.	n.a.	2.00	NO
11.900	39.042	273.96	11.54	0.02	226.18	220.08	4.27	0.20	2.89		clay	25.00			11.54	0.81	n.a.	n.a.	0.80	0.50	0.77	n.a.	n.a.	2.00	NO
12.000	39.370	273.63	12.39	0.09	228.08	221.00	4.63	0.90	3.04		clay	25.00			12.39	0.81	n.a.	n.a.	0.79	0.50	0.76	n.a.	n.a.	2.00	NO
12.100	39.698	273.30	45.72	0.41	229.98	221.92	19.77	0.95	2.48			25.00			45.72	0.63	28.79	65.31	0.79	0.50	0.94	0.09	0.11	0.22	YES
12.200	40.026	272.97	222.32	0.94	231.88	222.84	99.72	0.43	1.70			25.00			222.32	0.81	180.43	265.02	0.79	0.50	0.76	2.00	1.93	2.00	NO
12.300	40.354	272.65	367.14	1.18	233.78	223.75	164.68	0.32	1.45			25.00			367.14	0.81	297.64	419.39	0.79	0.50	0.76	2.00	1.93	2.00	NO

LIQUEFACTION TRIGGERING ANALYSIS
LOS ANGELES WATER WHEEL
LOS ANGELES, CALIFORNIA

Geosyntec consultants

12.400	40.682	272.32	423.18	1.23	235.69	224.67	189.19	0.29	1.38			25.00			423.18	0.81	342.70	478.73	0.79	0.50	0.76	2.00	1.93	2.00	NO
12.500	41.010	271.99	442.14	1.37	237.59	225.59	196.90	0.31	1.38			25.00			442.14	0.81	357.67	498.45	0.78	0.50	0.76	2.00	1.92	2.00	NO
12.600	41.339	271.66	422.83	1.59	239.49	226.51	187.48	0.38	1.44			25.00			422.83	0.81	341.68	477.39	0.78	0.51	0.76	2.00	1.92	2.00	NO
12.700	41.667	271.33	438.75	1.74	241.39	227.43	193.78	0.40	1.44			25.00			438.75	0.81	354.17	493.83	0.78	0.51	0.76	2.00	1.92	2.00	NO
12.800	41.995	271.01	408.92	1.75	243.29	228.35	179.80	0.43	1.49			25.00			408.92	0.81	329.74	461.66	0.78	0.51	0.75	2.00	1.91	2.00	NO
12.900	42.323	270.68	199.67	2.79	245.19	229.27	86.89	1.42	2.06			25.00			199.67	0.79	158.07	235.57	0.78	0.51	0.75	2.00	1.91	2.00	NO
13.000	42.651	270.35	72.77	1.97	247.09	230.19	30.85	2.80	2.59		clay	25.00			72.77	0.80	n.a.	n.a.	0.77	0.51	0.75	n.a.	n.a.	2.00	NO
13.100	42.979	270.02	51.24	1.37	248.99	231.11	21.31	2.81	2.71		clay	25.00			51.24	0.80	n.a.	n.a.	0.77	0.51	0.75	n.a.	n.a.	2.00	NO
13.200	43.307	269.69	78.40	1.94	250.89	232.03	33.05	2.55	2.54		clay	25.00			78.40	0.80	n.a.	n.a.	0.77	0.51	0.75	n.a.	n.a.	2.00	NO
13.300	43.635	269.36	116.08	2.42	252.79	232.95	49.24	2.13	2.36			25.00			116.08	0.70	81.00	134.07	0.77	0.51	0.88	0.21	0.24	0.47	YES
13.400	43.963	269.04	121.80	2.25	254.69	233.87	51.51	1.89	2.31			25.00			121.80	0.70	85.61	140.14	0.77	0.51	0.88	0.23	0.26	0.51	YES
13.500	44.291	268.71	129.12	2.60	256.59	234.79	54.45	2.05	2.31			25.00			129.12	0.71	91.64	148.08	0.76	0.51	0.87	0.26	0.29	0.57	YES
13.600	44.619	268.38	152.11	2.94	258.49	235.71	64.08	1.96	2.25			25.00			152.11	0.73	111.60	174.37	0.76	0.51	0.83	0.46	0.48	0.94	YES
13.700	44.948	268.05	225.97	2.74	260.39	236.63	95.35	1.23	1.98			25.00			225.97	0.80	180.51	265.13	0.76	0.51	0.74	2.00	1.89	2.00	NO
13.800	45.276	267.72	426.76	1.21	262.29	237.55	180.34	0.29	1.39			25.00			426.76	0.80	340.56	475.91	0.76	0.51	0.74	2.00	1.88	2.00	NO
13.900	45.604	267.40	604.70	1.66	264.20	238.47	255.00	0.28	1.25			25.00			604.70	0.80	482.07	662.28	0.76	0.51	0.74	2.00	1.88	2.00	NO
14.000	45.932	267.07	609.06	2.08	266.10	239.39	255.86	0.34	1.30			25.00			609.06	0.80	485.05	666.20	0.75	0.51	0.74	2.00	1.88	2.00	NO
14.100	46.260	266.74	618.63	2.42	268.00	240.31	258.89	0.39	1.33			25.00			618.63	0.80	492.17	675.59	0.75	0.51	0.74	2.00	1.87	2.00	NO
14.200	46.588	266.41	582.72	2.40	269.90	241.23	242.86	0.41	1.37			25.00			582.72	0.79	463.13	637.34	0.75	0.51	0.74	2.00	1.87	2.00	NO
14.300	46.916	266.08	574.61	1.66	271.80	242.15	238.55	0.29	1.29			25.00			574.61	0.79	456.23	628.25	0.75	0.51	0.74	2.00	1.87	2.00	NO
14.400	47.244	265.76	580.56	1.34	273.70	243.07	240.11	0.23	1.24			25.00			580.56	0.79	460.49	633.87	0.75	0.51	0.74	2.00	1.87	2.00	NO
14.500	47.572	265.43	601.61	1.37	275.60	243.99	247.91	0.23	1.22			25.00			601.61	0.79	476.72	655.23	0.74	0.51	0.74	2.00	1.86	2.00	NO
14.600	47.900	265.10	566.75	1.63	277.50	244.91	232.59	0.29	1.30			25.00			566.75	0.79	448.64	618.26	0.74	0.51	0.73	2.00	1.86	2.00	NO
14.700	48.228	264.77	533.72	2.38	279.40	245.83	218.15	0.45	1.43			25.00			533.72	0.79	422.08	583.28	0.74	0.51	0.73	2.00	1.86	2.00	NO
14.800	48.556	264.44	537.12	2.21	281.30	246.75	218.72	0.41	1.41			25.00			537.12	0.79	424.35	586.27	0.74	0.51	0.73	2.00	1.85	2.00	NO
14.900	48.885	264.12	508.33	2.14	283.20	247.67	206.16	0.42	1.43			25.00			508.33	0.79	401.22	555.80	0.73	0.51	0.73	2.00	1.85	2.00	NO
15.000	49.213	263.79	501.77	2.61	285.10	248.59	202.72	0.52	1.49			25.00			501.77	0.79	395.65	548.46	0.73	0.51	0.73	2.00	1.85	2.00	NO
15.100	49.541	263.46	528.96	2.65	287.00	249.51	212.97	0.50	1.47			25.00			528.96	0.79	416.68	576.17	0.73	0.51	0.73	2.00	1.85	2.00	NO
15.200	49.869	263.13	515.04	1.62	288.90	250.43	206.57	0.32	1.36			25.00			515.04	0.79	405.32	561.21	0.73	0.51	0.73	2.00	1.84	2.00	NO
15.300	50.197	262.80	430.87	1.27	290.81	251.35	171.98	0.30	1.42			25.00			430.87	0.79	338.75	473.53	0.73	0.51	0.73	2.00	1.84	2.00	NO
15.400	50.525	262.48	344.67	0.81	292.71	252.27	136.84	0.24	1.46			25.00			344.67	0.79	270.73	383.94	0.72	0.51	0.72	2.00	1.84	2.00	NO
15.500	50.853	262.15	309.76	0.95	294.61	253.18	122.41	0.31	1.55			25.00			309.76	0.78	243.07	347.52	0.72	0.51	0.72	2.00	1.83	2.00	NO
15.600	51.181	261.82	334.34	1.19	296.51	254.10	131.73	0.36	1.56			25.00			334.34	0.78	262.11	372.59	0.72	0.51	0.72	2.00	1.83	2.00	NO
15.700	51.509	261.49	354.04	1.11	298.41	255.02	139.04	0.32	1.51			25.00			354.04	0.78	277.28	392.58	0.72	0.51	0.72	2.00	1.83	2.00	NO
15.800	51.837	261.16	351.17	0.88	300.31	255.94	137.41	0.25	1.47			25.00			351.17	0.78	274.78	389.28	0.72	0.51	0.72	2.00	1.83	2.00	NO
15.900	52.165	260.83	364.38	1.33	302.21	256.86	142.10	0.37	1.53			25.00			364.38	0.78	284.84	402.53	0.72	0.51	0.72	2.00	1.82	2.00	NO
16.000	52.493	260.51	426.35	2.58	304.11	257.78	165.86	0.61	1.60			25.00			426.35	0.78	332.97	465.91	0.71	0.51	0.72	2.00	1.82	2.00	NO
16.100	52.822	260.18	556.69	3.25	306.01	258.70	216.15	0.59	1.51			25.00			556.69	0.78	434.36	599.44	0.71	0.51	0.72	2.00	1.82	2.00	NO
16.200	53.150	259.85	540.36	3.78	307.91	259.62	209.03	0.70	1.57			25.00			540.36	0.78	421.22	582.15	0.71	0.51	0.72	2.00	1.82	2.00	NO
16.300	53.478	259.52	473.79	2.36	309.81	260.54	182.48	0.50	1.52			25.00			473.79	0.78	368.99	513.35	0.71	0.51	0.72	2.00	1.81	2.00	NO
16.400	53.806	259.19	470.15	1.78	311.71	261.46	180.42	0.38	1.45			25.00			470.15	0.78	365.81	509.16	0.71	0.51	0.71	2.00	1.81	2.00	NO
16.500	54.134	258.87	492.47	1.74	313.61	262.38	188.37	0.35	1.42			25.00			492.47	0.78	382.82	531.57	0.70	0.51	0.71	2.00	1.81	2.00	NO
16.600	54.462	258.54	500.70	3.38	315.51	263.30	190.87	0.68	1.59			25.00			500.70	0.78	388.86	539.52	0.70	0.51	0.71	2.00	1.80	2.00	NO
16.700	54.790	258.21	509.64	2.36	317.41	264.22	193.61	0.47	1.48			25.00			509.64	0.78	395.44	548.19	0.70	0.51	0.71	2.00	1.80	2.00	NO
16.800	55.118	257.88	464.71	2.09	319.32	265.14	175.82	0.45	1.51			25.00			464.71	0.78	360.24	501.84	0.70	0.51	0.71	2.00	1.80	2.00	NO
16.900	55.446	257.55	276.37	2.81	321.22	266.06	103.71	1.03	1.91			25.00			276.37	0.77	214.05	309.30	0.70	0.51	0.71	2.00	1.80	2.00	NO
17.000	55.774	257.23	96.26	2.34	323.12	266.98	35.21	2.51	2.51		clay	25.00			96.26	0.77	n.a.	n.a.	0.69	0.51	0.71	n.a.	n.a.	2.00	NO
17.100	56.102	256.90	77.85	1.67	325.02	267.90	28.14	2.24	2.56		clay	25.00			77.85	0.77	n.a.	n.a.	0.69	0.51	0.71	n.a.	n.a.	2.00	NO
17.200	56.430	256.57	65.13	1.78	326.92	268.82	23.25	2.87	2.69		clay	25.00			65.13	0.77	n.a.	n.a.	0.69	0.51	0.71	n.a.	n.a.	2.00	NO
17.300	56.759	256.24	71.19	1.86	328.82	269.74	25.44	2.74	2.65		clay	25.00			71.19	0.77	n.a.	n.a.	0.69	0.51	0.70	n.a.	n.a.	2.00	NO
17.400	57.087	255.91	158.35	2.61	330.72	270.66	57.87	1.68	2.24			25.00			158.35	0.70	110.15	172.46	0.69	0.51	0.81	0.43	0.44	0.86	YES
17.500	57.415	255.59	348.19	2.13	332.62	271.58	128.27	0.62	1.70			25.00			348.19	0.77	268.21	380.63	0.68	0.51	0.70	2.00	1.78	2.00	NO
17.600	57.743	255.26	396.50	3.52	334.52	272.50	145.73	0.90	1.76			25.00			396.50	0.77	305.16	429.29	0.68	0.51	0.70	2.00	1.78	2.00	NO
17.700	58.071	254.93	365.03	3.82	336.42	273.42	133.61	1.06	1.83			25.00			365.03	0.77	280.69	397.06	0.68	0.51	0.70	2.00	1.78	2.00	NO
17.800	58.399	254.60	324.50	2.94	338.32	274.34	118.24	0.91	1.83			25.00			324.50	0.77	249.30	355.73	0.68	0.51	0.70	2.00	1.77	2.00	NO
17.900	58.727	254.27	265.37	2.54	340.22	275.26	96.14	0.97	1.92			25.00			265.37	0.77	203.69	295.66	0.68	0.51	0.70	2.00	1.77	2.00	NO
18.000	59.055	253.94	198.91	3.60	342.12	276.18	71.50	1.84	2.19			25.00			198.91	0.74	146.62	220.49	0.68	0.51	0.70	2.00	1.77	2.00	NO
18.100	59.383	253.62	124.15	4.41	344.02	277.10	44.01	3.66	2.55		clay	25.00			124.15	0.77	n.a.	n.a.	0.67	0.51	0.70	n.a.	n.a.	2.00	NO
18.200	59.711	253.29	171.41	3.47	345.93	278.02	61.03	2.07	2.28			25.00			171.41	0.70	120.42	185.99	0.67	0.51	0.77	0.65	0.64	1.25	NO
18.300	60.039	252.96	292.99	3.33	347.83	278.94	104.84	1.15	1.93			25.00			292.99	0.76	224.11	322.54	0.67	0.51	0.69	2.00	1.76	2.00	NO
18.400	60.367	252.63	266.43	3.10	349.73	279.86	94.91	1.18	1.97			25.00			266.43	0.76	203.62	295.56	0.67	0.51	0.69	2.00	1.76	2.00	NO
18.500	60.696	252.30	220.15	2.52	351.63	280.78	77.94	1.16	2.04			25.00			220.15	0.76	166.75	247.00	0.67	0.51	0.69	2.00	1.76	2.00	NO
18.600	61.024	251.98	194.24	2.71	353.53	281.70	68.39	1.42	2.14			25.00			194.24	0.73	140.97	213.04	0.66	0.51	0.69	2.00	1.75	2.00	NO
18.700	61.352	251.65	184.09	3.11	355.43	282.61	64.53	1.72	2.21			25.00			184.09	0.71	131.18	200.16	0.66	0.51	0.73	1.15	1.06	2.00	NO
18.800	61.680	251.32	196.67	3.55	357.33	283.53	68.80	1.84	2.21			25.00			196.67	0.73	142.92	215.62	0.66	0.51	0.69	2.00	1.75	2.00	NO
18.900	62.008	250.99	260.04	3.02	359.23	284.45	91.07	1.18	1.99			25.00			260.04	0.76	197.88	288.00	0.66	0.51	0.69	2.00	1.75	2.00	NO
19.000	62.336	250.66	368.70	2.93	361.13	285.37	129.22	0.80	1.76			25.00			368.70	0.76	280.33	396.58	0.66	0.51	0.69	2.00	1.74	2.00	NO
19.100	62.664	250.34	418.52	2.59	363.03	286.29	146.38	0.62	1.65			25.00			418.52	0.76	317.94	446.12	0.66	0.51	0.69	2.00	1.74	2.00	NO
19.200	62.992	250.01	417.64	3.14	364.93	287.21	145.59	0.76	1.71			25.00			417.64	0.76	317.00	444.88	0.65	0.51	0.69	2.00	1.74	2.00	NO
19.300	63.320	249.68	323.83	4.97	366.83	288.13	112.24	1.55	2.00			25.00			323.83	0.76	245.59	350.83	0.65	0.51	0.69	2.00	1.74	2.00	NO
19.400	63.648	249.35	258.76	3.70	368.73	289.05	89.14	1.45	2.05			25.00			258.76	0.76	196.07	285.62	0.65	0.51	0.68	2.00	1.73	2.00	NO
19.500	63.976	249.02	306.62	2.17	370.63	289.97	105.52	0.72	1.80			25.00			306.62	0.76	232.15	333.13	0.65	0.51	0.68	2.00	1.73	2.00	NO

LIQUEFACTION TRIGGERING ANALYSIS
LOS ANGELES WATER WHEEL
LOS ANGELES, CALIFORNIA

Geosyntec consultants

19.600	64.304	248.70	328.62	2.08	372.53	290.89	112.82	0.64	1.75			25.00			328.62	0.76	248.60	354.80	0.65	0.51	0.68	2.00	1.73	2.00	NO
19.700	64.633	248.37	327.96	3.57	374.44	291.81	112.23	1.10	1.90			25.00			327.96	0.76	247.89	353.86	0.65	0.51	0.68	2.00	1.73	2.00	NO
19.800	64.961	248.04	341.00	4.24	376.34	292.73	116.37	1.26	1.93			25.00			341.00	0.76	257.53	366.56	0.64	0.51	0.68	2.00	1.72	2.00	NO
19.900	65.289	247.71	361.86	2.45	378.24	293.65	123.17	0.68	1.74			25.00			361.86	0.75	273.06	387.02	0.64	0.51	0.68	2.00	1.72	2.00	NO
20.000	65.617	247.38	462.53	1.53	380.14	294.57	157.30	0.33	1.47			25.00			462.53	0.75	348.73	486.68	0.64	0.50	0.68	2.00	1.72	2.00	NO
20.100	65.945	247.06	445.19	1.65	382.04	295.49	150.88	0.37	1.51			25.00			445.19	0.75	335.39	469.10	0.64	0.50	0.68	2.00	1.72	2.00	NO
20.200	66.273	246.73	247.22	3.19	383.94	296.41	82.95	1.31	2.05			25.00			247.22	0.75	186.10	272.48	0.64	0.50	0.68	2.00	1.71	2.00	NO
20.300	66.601	246.40	111.97	2.42	385.84	297.33	36.74	2.24	2.47			25.00			111.97	0.61	67.93	116.85	0.64	0.50	0.87	0.17	0.19	0.38	YES
20.400	66.929	246.07	100.22	1.48	387.74	298.25	32.64	1.54	2.41			25.00			100.22	0.59	59.17	105.32	0.63	0.50	0.88	0.15	0.17	0.34	YES
20.500	67.257	245.74	116.57	1.88	389.64	299.17	38.05	1.66	2.38			25.00			116.57	0.61	71.16	121.10	0.63	0.50	0.86	0.18	0.20	0.40	YES
20.600	67.585	245.41	85.24	2.10	391.54	300.09	27.38	2.58	2.61		clay	25.00			85.24	0.75	n.a.	n.a.	0.63	0.50	0.67	n.a.	n.a.	2.00	NO
20.700	67.913	245.09	65.11	1.60	393.44	301.01	20.54	2.61	2.71		clay	25.00			65.11	0.75	n.a.	n.a.	0.63	0.50	0.67	n.a.	n.a.	2.00	NO
20.800	68.241	244.76	89.14	1.49	395.34	301.93	28.51	1.75	2.49			25.00			89.14	0.57	50.96	94.51	0.63	0.50	0.89	0.13	0.15	0.30	YES
20.900	68.570	244.43	73.24	1.56	397.24	302.85	23.11	2.25	2.63		clay	25.00			73.24	0.75	n.a.	n.a.	0.63	0.50	0.67	n.a.	n.a.	2.00	NO
21.000	68.898	244.10	128.61	1.31	399.14	303.77	41.45	1.05	2.23			25.00			128.61	0.62	79.80	132.49	0.62	0.50	0.85	0.21	0.23	0.45	YES
21.100	69.226	243.77	219.01	1.66	401.05	304.69	71.28	0.77	1.96			25.00			219.01	0.73	160.57	238.87	0.62	0.50	0.67	2.00	1.69	2.00	NO
21.200	69.554	243.45	148.94	3.49	402.95	305.61	47.90	2.41	2.40			25.00			148.94	0.64	95.95	153.76	0.62	0.50	0.82	0.29	0.30	0.60	YES
21.300	69.882	243.12	94.10	4.45	404.85	306.53	29.68	4.94	2.77		clay	25.00			94.10	0.75	n.a.	n.a.	0.62	0.50	0.67	n.a.	n.a.	2.00	NO
21.400	70.210	242.79	126.29	3.66	406.75	307.45	40.17	2.99	2.52		clay	25.00			126.29	0.75	n.a.	n.a.	0.62	0.50	0.67	n.a.	n.a.	2.00	NO
21.500	70.538	242.46	65.86	2.30	408.65	308.37	20.25	3.72	2.81		clay	25.00			65.86	0.74	n.a.	n.a.	0.62	0.50	0.66	n.a.	n.a.	2.00	NO
21.600	70.866	242.13	31.50	0.80	410.55	309.29	8.96	2.92	3.03		clay	25.00			31.50	0.74	n.a.	n.a.	0.62	0.50	0.66	n.a.	n.a.	2.00	NO
21.700	71.194	241.81	30.62	0.38	412.45	310.21	8.64	1.42	2.88		clay	25.00			30.62	0.74	n.a.	n.a.	0.61	0.50	0.66	n.a.	n.a.	2.00	NO
21.800	71.522	241.48	30.92	0.37	414.35	311.13	8.71	1.38	2.87		clay	25.00			30.92	0.74	n.a.	n.a.	0.61	0.50	0.66	n.a.	n.a.	2.00	NO
21.900	71.850	241.15	30.17	0.42	416.25	312.04	8.43	1.62	2.92		clay	25.00			30.17	0.74	n.a.	n.a.	0.61	0.50	0.66	n.a.	n.a.	2.00	NO
22.000	72.178	240.82	27.88	0.39	418.15	312.96	7.66	1.65	2.96		clay	25.00			27.88	0.74	n.a.	n.a.	0.61	0.50	0.66	n.a.	n.a.	2.00	NO
22.100	72.507	240.49	34.16	0.60	420.05	313.88	9.65	2.01	2.91		clay	25.00			34.16	0.74	n.a.	n.a.	0.61	0.50	0.66	n.a.	n.a.	2.00	NO
22.200	72.835	240.17	90.88	1.07	421.95	314.80	27.82	1.24	2.41			25.00			90.88	0.56	50.84	94.34	0.61	0.50	0.88	0.13	0.15	0.30	YES
22.300	73.163	239.84	76.60	1.03	423.85	315.72	23.16	1.43	2.51		clay	25.00			76.60	0.74	n.a.	n.a.	0.60	0.50	0.66	n.a.	n.a.	2.00	NO
22.400	73.491	239.51	31.64	0.51	425.75	316.64	8.75	1.86	2.93		clay	25.00			31.64	0.74	n.a.	n.a.	0.60	0.50	0.66	n.a.	n.a.	2.00	NO
22.500	73.819	239.18	36.79	0.59	427.65	317.56	10.36	1.80	2.86		clay	25.00			36.79	0.74	n.a.	n.a.	0.60	0.50	0.66	n.a.	n.a.	2.00	NO
22.600	74.147	238.85	37.25	0.80	429.56	318.48	10.47	2.41	2.93		clay	25.00			37.25	0.74	n.a.	n.a.	0.60	0.49	0.65	n.a.	n.a.	2.00	NO
22.700	74.475	238.52	32.41	0.52	431.46	319.40	8.90	1.85	2.93		clay	25.00			32.41	0.74	n.a.	n.a.	0.60	0.49	0.65	n.a.	n.a.	2.00	NO
22.800	74.803	238.20	28.19	0.35	433.36	320.32	7.54	1.48	2.94		clay	25.00			28.19	0.74	n.a.	n.a.	0.60	0.49	0.65	n.a.	n.a.	2.00	NO
22.900	75.131	237.87	28.56	0.43	435.26	321.24	7.63	1.76	2.97		clay	25.00			28.56	0.74	n.a.	n.a.	0.60	0.49	0.65	n.a.	n.a.	2.00	NO
23.000	75.459	237.54	32.31	0.46	437.16	322.16	8.77	1.66	2.91		clay	25.00			32.31	0.74	n.a.	n.a.	0.59	0.49	0.65	n.a.	n.a.	2.00	NO
23.100	75.787	237.21	29.97	0.57	439.06	323.08	8.01	2.23	3.01		clay	25.00			29.97	0.74	n.a.	n.a.	0.59	0.49	0.65	n.a.	n.a.	2.00	NO
23.200	76.115	236.88	158.46	1.37	440.96	324.00	48.04	0.89	2.14			25.00			158.46	0.64	100.97	160.37	0.59	0.49	0.80	0.33	0.33	0.67	YES
23.300	76.444	236.56	478.67	1.54	442.86	324.92	147.43	0.33	1.49			25.00			478.67	0.73	351.69	490.57	0.59	0.49	0.65	2.00	1.64	2.00	NO

SCPTu-2 (high)

LIQUEFACTION TRIGGERING ANALYSIS
LOS ANGELES WATER WHEEL
LOS ANGELES, CALIFORNIA

Geosyntec consultants

Input Parameters

Boring Designation	SCPTu-2 (high)
Ground Surface Elevation (ft)	313
Peak Ground Acceleration (g)	0.94
Earthquake Magnitude, M=	6.6
Water Table Depth (m)	5.94
Historic High Water Table Elevation =	293.5
Unit Weight above Water Table (pcf)	120.9
Unit Weight below Water Table (pcf)	127.2

Intermediate Parameters

Unit Weight above Water Table (kN/m^3)	19.0
Unit Weight below Water Table (kN/m^3)	20.0
Magnitude scaling factor, MSF	1.27

Legend

= Manual Input
= Calculated Value
= Calculated Factor of Safety against Liquefaction is over 1.0
= Calculated Factor of Safety against Liquefaction is 1.0 or Lower
red text = Manual input cell with formula used as input (and subject to change)
= Cell value not relevant for this sheet

NOTE: There is a significant difference between field water table elevation and assumed historic high water elevation (i.e., about 18 ft). qc1N should be calculated for field conditions (using "field" sheet), then used to calculate FS for historic high conditions (using "high" sheet).

Depth (m b.g.s.)	Depth (ft b.g.s.)	Elevation (ft)	Tip q_{cN}	F_{sN}	σ_{vc} (kPa)	σ_{vc}' (kPa)	Q	F	I_c	Layer	Flag "clay" or "Unsaturated"	Fines (%)	Interpreted q_{cn} near interfaces	Thin layer factor	Interpreted q_{cn}	C_N	q_{c1N}	qcN1-cs	Stress reduc. coeff, r_d	CSR	K_α for sand	CRR for M=7.5 & σ_{vc}'=1 atm	CRR	Factor of Safety	Potential For Liquefaction
0.100	0.328	312.67	0.00	0.00	1.90	1.90	-1.00	0.00	#NUM!	0.00	unsaturated	25.00	0.00	0.00	0.00	1.70	0.00	27.39	1.01	0.61	1.10	0.06	n.a.	2.00	NO
0.200	0.656	314.34	0.00	0.00	3.80	3.80	-1.00	0.00	#NUM!	0.00	unsaturated	25.00	0.00	0.00	0.00	1.70	0.00	27.39	1.01	0.61	1.10	0.06	n.a.	2.00	NO
0.300	0.984	312.02	0.00	0.00	5.70	5.70	-1.00	0.00	#NUM!	0.00	unsaturated	25.00	0.00	0.00	0.00	1.70	0.00	27.39	1.00	0.61	1.10	0.06	n.a.	2.00	NO
0.400	1.312	311.69	0.00	0.00	7.60	7.60	-1.00	0.00	#NUM!	0.00	unsaturated	25.00	0.00	0.00	0.00	1.70	0.00	27.39	1.00	0.61	1.10	0.06	n.a.	2.00	NO
0.500	1.640	311.36	0.00	0.00	9.50	9.50	-1.00	0.00	#NUM!	0.00	unsaturated	25.00	0.00	0.00	0.00	1.70	0.00	27.39	1.00	0.61	1.10	0.06	n.a.	2.00	NO
0.600	1.969	311.03	0.00	0.00	11.40	11.40	-1.00	0.00	#NUM!	0.00	unsaturated	25.00	0.00	0.00	0.00	1.70	0.00	27.39	1.00	0.61	1.10	0.06	n.a.	2.00	NO
0.700	2.297	310.70	0.00	0.00	13.30	13.30	-1.00	0.00	#NUM!	0.00	unsaturated	25.00	0.00	0.00	0.00	1.70	0.00	27.39	1.00	0.61	1.10	0.06	n.a.	2.00	NO
0.800	2.625	310.38	0.00	0.00	15.21	15.21	-1.00	0.00	#NUM!	0.00	unsaturated	25.00	0.00	0.00	0.00	1.70	0.00	27.39	1.00	0.61	1.10	0.06	n.a.	2.00	NO
0.900	2.953	310.05	0.00	0.00	17.11	17.11	-1.00	0.00	#NUM!	0.00	unsaturated	25.00	0.00	0.00	0.00	1.70	0.00	27.39	1.00	0.61	1.10	0.06	n.a.	2.00	NO
1.000	3.281	309.72	0.00	0.00	19.01	19.01	-1.00	0.00	#NUM!	0.00	unsaturated	25.00	0.00	0.00	0.00	1.70	0.00	27.39	1.00	0.61	1.10	0.06	n.a.	2.00	NO
1.100	3.609	309.39	0.00	0.00	20.91	20.91	-1.00	0.00	#NUM!	0.00	unsaturated	25.00	0.00	0.00	0.00	1.70	0.00	27.39	0.99	0.61	1.09	0.06	n.a.	2.00	NO
1.200	3.937	309.06	0.00	0.00	22.81	22.81	-1.00	0.00	#NUM!	0.00	unsaturated	25.00	0.00	0.00	0.00	1.70	0.00	27.39	0.99	0.61	1.09	0.06	n.a.	2.00	NO
1.300	4.265	308.73	0.00	0.00	24.71	24.71	-1.00	0.00	#NUM!	0.00	unsaturated	25.00	0.00	0.00	0.00	1.70	0.00	27.39	0.99	0.61	1.08	0.06	n.a.	2.00	NO
1.400	4.593	308.41	0.00	0.00	26.61	26.61	-1.00	0.00	#NUM!	0.00	unsaturated	25.00	0.00	0.00	0.00	1.70	0.00	27.39	0.99	0.61	1.08	0.06	n.a.	2.00	NO
1.500	4.921	308.08	143.54	0.91	28.51	28.51	507.52	0.63	1.28	0.00	unsaturated	25.00	0.00	0.00	143.54	1.40	200.41	291.33	0.99	0.60	1.10	2.00	n.a.	2.00	NO
1.600	5.249	307.75	414.12	2.35	30.41	30.41	1374.36	0.57	1.03	0.00	unsaturated	25.00	0.00	0.00	414.12	1.37	568.40	775.98	0.99	0.60	1.10	2.00	n.a.	2.00	NO
1.700	5.577	307.42	373.85	2.32	32.31	32.31	1167.58	0.62	1.09	0.00	unsaturated	25.00	0.00	0.00	373.85	1.35	504.99	692.46	0.99	0.60	1.10	2.00	n.a.	2.00	NO
1.800	5.906	307.09	318.15	2.07	34.21	34.21	938.22	0.65	1.15	0.00	unsaturated	25.00	0.00	0.00	318.15	1.33	423.31	584.90	0.99	0.60	1.10	2.00	n.a.	2.00	NO
1.900	6.234	306.77	269.86	1.23	36.11	36.11	753.75	0.46	1.06	0.00	unsaturated	25.00	0.00	0.00	269.86	1.31	353.98	493.59	0.98	0.60	1.10	2.00	n.a.	2.00	NO
2.000	6.562	306.44	228.59	1.43	38.01	38.01	606.34	0.63	1.23	0.00	unsaturated	25.00	0.00	0.00	228.59	1.29	295.81	416.97	0.98	0.60	1.10	2.00	n.a.	2.00	NO
2.100	6.890	306.11	205.23	1.20	39.91	39.91	518.31	0.59	1.24	0.00	unsaturated	25.00	0.00	0.00	205.23	1.28	262.18	372.69	0.98	0.60	1.10	2.00	n.a.	2.00	NO
2.200	7.218	305.78	176.84	0.71	41.82	41.82	426.15	0.40	1.18	0.00	unsaturated	25.00	0.00	0.00	176.84	1.26	223.17	321.31	0.98	0.60	1.10	2.00	n.a.	2.00	NO
2.300	7.546	305.45	150.79	0.90	43.72	43.72	347.39	0.60	1.36	0.00	unsaturated	25.00	0.00	0.00	150.79	1.25	188.07	275.09	0.98	0.60	1.10	2.00	n.a.	2.00	NO
2.400	7.874	305.13	133.92	1.06	45.62	45.62	295.51	0.80	1.50	0.00	unsaturated	25.00	0.00	0.00	133.92	1.24	166.29	246.40	0.98	0.60	1.10	2.00	n.a.	2.00	NO
2.500	8.202	304.80	119.83	0.91	47.52	47.52	253.70	0.76	1.53	0.00	unsaturated	25.00	0.00	0.00	119.83	1.25	149.99	224.93	0.98	0.60	1.10	2.00	n.a.	2.00	NO
2.600	8.530	304.47	112.53	0.70	49.42	49.42	228.99	0.62	1.50	0.00	unsaturated	25.00	0.00	0.00	112.53	1.25	140.74	212.75	0.97	0.60	1.10	2.00	n.a.	2.00	NO
2.700	8.858	304.14	108.65	0.67	51.32	51.32	212.84	0.62	1.52	0.00	unsaturated	25.00	0.00	0.00	108.65	1.24	135.16	205.39	0.97	0.59	1.10	1.48	n.a.	2.00	NO
2.800	9.186	303.81	102.37	0.61	53.22	53.22	193.29	0.60	1.55	0.00	unsaturated	25.00	0.00	0.00	102.37	1.24	127.02	194.68	0.97	0.59	1.10	0.90	n.a.	2.00	NO
2.900	9.514	303.49	95.78	0.98	55.12	55.12	174.51	1.03	1.74	0.00	unsaturated	25.00	0.00	0.00	95.78	1.24	118.55	183.52	0.97	0.59	1.10	0.60	n.a.	2.00	NO
3.000	9.843	303.16	107.50	1.26	57.02	57.02	189.41	1.18	1.76	0.00	unsaturated	25.00	0.00	0.00	107.50	1.21	129.93	198.51	0.97	0.59	1.10	1.06	n.a.	2.00	NO
3.100	10.171	302.83	122.55	0.36	58.92	58.92	209.08	0.30	1.34	0.00	unsaturated	25.00	0.00	0.00	122.55	1.18	144.57	217.79	0.97	0.59	1.10	2.00	n.a.	2.00	NO
3.200	10.499	302.50	136.87	0.02	60.82	60.82	226.28	0.01	1.28	0.00	unsaturated	25.00	0.00	0.00	136.87	1.16	158.14	235.67	0.97	0.59	1.10	2.00	n.a.	2.00	NO
3.300	10.827	302.17	140.66	0.02	62.72	62.72	225.50	0.01	1.29	0.00	unsaturated	25.00	0.00	0.00	140.66	1.14	160.79	239.16	0.96	0.59	1.10	2.00	n.a.	2.00	NO
3.400	11.155	301.85	152.06	0.24	64.62	64.62	236.65	0.16	1.17	0.00	unsaturated	25.00	0.00	0.00	152.06	1.13	171.17	252.82	0.96	0.59	1.10	2.00	n.a.	2.00	NO
3.500	11.483	301.52	169.64	0.97	66.52	66.52	256.55	0.57	1.44	0.00	unsaturated	25.00	0.00	0.00	169.64	1.12	189.39	276.82	0.96	0.59	1.10	2.00	n.a.	2.00	NO
3.600	11.811	301.19	160.19	1.81	68.42	68.42	235.45	1.13	1.68	0.00	unsaturated	25.00	0.00	0.00	160.19	1.11	177.52	261.19	0.96	0.59	1.10	2.00	n.a.	2.00	NO
3.700	12.139	300.86	173.15	2.04	70.33	70.33	247.68	1.18	1.68	0.00	unsaturated	25.00	0.00	0.00	173.15	1.10	190.50	278.29	0.96	0.58	1.10	2.00	n.a.	2.00	NO
3.800	12.467	300.53	240.47	2.46	72.23	72.23	335.27	1.03	1.55	0.00	unsaturated	25.00	0.00	0.00	240.47	1.09	262.71	373.39	0.96	0.58	1.10	2.00	n.a.	2.00	NO
3.900	12.795	300.20	247.46	2.63	74.13	74.13	336.17	1.06	1.56	0.00	unsaturated	25.00	0.00	0.00	247.46	1.09	268.50	381.01	0.95	0.58	1.09	2.00	n.a.	2.00	NO
4.000	13.123	299.88	235.60	1.21	76.03	76.03	311.99	0.52	1.35	0.00	unsaturated	25.00	0.00	0.00	235.60	1.08	253.93	361.82	0.95	0.58	1.09	2.00	n.a.	2.00	NO
4.100	13.451	299.55	207.76	0.86	77.93	77.93	268.27	0.41	1.34	0.00	unsaturated	25.00	0.00	0.00	207.76	1.07	222.47	320.39	0.95	0.58	1.08	2.00	n.a.	2.00	NO
4.200	13.780	299.22	214.25	1.00	79.83	79.83	270.08	0.47	1.37	0.00	unsaturated	25.00	0.00	0.00	214.25	1.06	227.97	327.63	0.95	0.58	1.07	2.00	n.a.	2.00	NO
4.300	14.108	298.89	222.82	1.05	81.73	81.73	274.36	0.47	1.37	0.00	unsaturated	25.00	0.00	0.00	222.82	1.06	235.62	337.71	0.95	0.58	1.06	2.00	n.a.	2.00	NO
4.400	14.436	298.56	246.29	1.43	83.63	83.63	296.44	0.58	1.40	0.00	unsaturated	25.00	0.00	0.00	246.29	1.05	258.86	368.31	0.95	0.58	1.06	2.00	n.a.	2.00	NO
4.500	14.764	298.24	268.36	1.91	85.53	85.53	315.89	0.71	1.45	0.00	unsaturated	25.00	0.00	0.00	268.36	1.04	280.39	396.67	0.94	0.58	1.05	2.00	n.a.	2.00	NO
4.600	15.092	297.91	327.73	2.40	87.43	87.43	377.59	0.73	1.41	0.00	unsaturated	25.00	0.00	0.00	327.73	1.04	340.44	475.75	0.94	0.58	1.04	2.00	n.a.	2.00	NO
4.700	15.420	297.58	308.29	1.77	89.33	89.33	347.56	0.57	1.35	0.00	unsaturated	25.00	0.00	0.00	308.29	1.03	318.44	446.78	0.94	0.57	1.04	2.00	n.a.	2.00	NO
4.800	15.748	297.25	312.22	1.39	91.23	91.23	344.65	0.45	1.28	0.00	unsaturated	25.00	0.00	0.00	312.22	1.03	320.71	449.77	0.94	0.57	1.03	2.00	n.a.	2.00	NO
4.900	16.076	296.92	350.47	1.77	93.13	93.13	379.07	0.51	1.28	0.00	unsaturated	25.00	0.00	0.00	350.47	1.02	358.05	498.95	0.94	0.57	1.02	2.00	n.a.	2.00	NO
5.000	16.404	296.60	321.70	2.74	95.03	95.03	340.90	0.86	1.49	0.00	unsaturated	25.00	0.00	0.00	321.70	1.02	326.91	457.94	0.94	0.57	1.02	2.00	n.a.	2.00	NO
5.100	16.732	296.27	326.70	2.37	96.94	96.94	339.40	0.73	1.43	0.00	unsaturated	25.00	0.00	0.00	326.70	1.01	330.26	462.35	0.93	0.57	1.01	2.00	n.a.	2.00	NO

LIQUEFACTION TRIGGERING ANALYSIS
LOS ANGELES WATER WHEEL
LOS ANGELES, CALIFORNIA

Geosyntec consultants

5.200	17.060	295.94	333.61	2.27	98.84	98.84	339.91	0.68	1.41	0.00	unsaturated	25.00	0.00	0.00	333.61	1.01	335.52	469.27	0.93	0.57	1.01	2.00	n.a.	2.00	NO
5.300	17.388	295.61	388.78	2.01	100.74	100.74	388.80	0.52	1.28	0.00	unsaturated	25.00	0.00	0.00	388.78	1.00	389.05	539.77	0.93	0.57	1.00	2.00	n.a.	2.00	NO
5.400	17.717	295.28	391.78	1.52	102.64	102.64	384.53	0.39	1.20	0.00	unsaturated	25.00	0.00	0.00	391.78	1.00	390.12	541.18	0.93	0.57	1.00	2.00	n.a.	2.00	NO
5.500	18.045	294.96	400.76	1.96	104.54	104.54	386.20	0.49	1.27	0.00	unsaturated	25.00	0.00	0.00	400.76	0.99	397.14	550.43	0.93	0.57	0.99	2.00	n.a.	2.00	NO
5.600	18.373	294.63	349.17	2.27	106.44	106.44	330.33	0.65	1.40	0.00	unsaturated	25.00	0.00	0.00	349.17	0.99	344.37	480.93	0.92	0.56	0.98	2.00	n.a.	2.00	NO
5.700	18.701	294.30	414.11	2.40	108.34	108.34	385.06	0.58	1.32	0.00	unsaturated	25.00	0.00	0.00	414.11	0.98	406.52	562.78	0.92	0.56	0.98	2.00	n.a.	2.00	NO
5.800	19.029	293.97	537.14	2.24	110.24	110.24	491.12	0.42	1.15	0.00	unsaturated	25.00	0.00	0.00	537.14	0.98	524.88	718.66	0.92	0.56	0.97	2.00	n.a.	2.00	NO
5.900	19.357	293.64	491.71	2.15	112.14	112.14	441.86	0.44	1.19	0.00	unsaturated	25.00	0.00	0.00	491.71	0.97	478.32	657.35	0.92	0.56	0.97	2.00	n.a.	2.00	NO
6.000	19.685	293.31	511.54	2.68	114.04	113.49	452.04	0.53	1.24	0.00		25.00	0.00	0.00	511.54	0.97	495.41	679.85	0.92	0.56	0.96	2.00	2.00	2.00	NO
6.100	20.013	292.99	530.60	2.25	115.94	114.41	461.22	0.42	1.17	0.00		25.00	0.00	0.00	530.60	0.97	511.64	701.22	0.91	0.57	0.96	2.00	2.00	2.00	NO
6.200	20.341	292.66	471.79	2.30	117.84	115.33	403.36	0.49	1.25	0.00		25.00	0.00	0.00	471.79	0.97	452.98	623.97	0.91	0.57	0.96	2.00	2.00	2.00	NO
6.300	20.669	292.33	443.19	2.30	119.74	116.25	372.82	0.52	1.30	0.00		25.00	0.00	0.00	443.19	0.96	423.73	585.45	0.91	0.57	0.96	2.00	2.00	2.00	NO
6.400	20.997	292.00	428.60	2.27	121.64	117.17	354.86	0.53	1.32	0.00		25.00	0.00	0.00	428.60	0.96	408.08	564.83	0.91	0.58	0.96	2.00	2.00	2.00	NO
6.500	21.325	291.67	421.47	1.55	123.54	118.09	343.56	0.37	1.22	0.00		25.00	0.00	0.00	421.47	0.96	399.65	553.73	0.91	0.58	0.95	2.00	2.00	2.00	NO
6.600	21.654	291.35	382.12	1.48	125.45	119.01	306.65	0.39	1.27	0.00		25.00	0.00	0.00	382.12	0.96	360.88	502.67	0.91	0.58	0.95	2.00	2.00	2.00	NO
6.700	21.982	291.02	359.63	1.91	127.35	119.93	284.23	0.53	1.39	0.00		25.00	0.00	0.00	359.63	0.96	338.30	472.93	0.90	0.59	0.95	2.00	2.00	2.00	NO
6.800	22.310	290.69	358.15	1.87	129.25	120.85	278.88	0.52	1.39	0.00		25.00	0.00	0.00	358.15	0.95	335.59	469.37	0.90	0.59	0.95	2.00	2.00	2.00	NO
6.900	22.638	290.36	340.69	1.88	131.15	121.77	261.38	0.55	1.43	0.00		25.00	0.00	0.00	340.69	0.95	318.01	446.21	0.90	0.59	0.94	2.00	2.00	2.00	NO
7.000	22.966	290.03	339.81	2.55	133.05	122.68	256.96	0.75	1.53	0.00		25.00	0.00	0.00	339.81	0.95	315.98	443.54	0.90	0.59	0.94	2.00	2.00	2.00	NO
7.100	23.294	289.71	424.87	2.91	134.95	123.60	316.99	0.69	1.43	0.00		25.00	0.00	0.00	424.87	0.95	393.60	545.76	0.90	0.60	0.94	2.00	2.00	2.00	NO
7.200	23.622	289.38	413.62	1.69	136.85	124.52	304.27	0.41	1.29	0.00		25.00	0.00	0.00	413.62	0.95	381.76	530.18	0.89	0.60	0.94	2.00	2.00	2.00	NO
7.300	23.950	289.05	309.34	1.97	138.75	125.44	224.18	0.64	1.52	0.00		25.00	0.00	0.00	309.34	0.94	284.48	402.05	0.89	0.60	0.93	2.00	2.00	2.00	NO
7.400	24.278	288.72	290.96	1.84	140.65	126.36	207.94	0.63	1.54	0.00		25.00	0.00	0.00	290.96	0.94	266.62	378.53	0.89	0.61	0.93	2.00	2.00	2.00	NO
7.500	24.606	288.39	278.71	1.10	142.55	127.28	196.47	0.40	1.43	0.00		25.00	0.00	0.00	278.71	0.94	254.49	362.55	0.89	0.61	0.93	2.00	2.00	2.00	NO
7.600	24.934	288.07	264.16	0.66	144.45	128.20	183.70	0.25	1.36	0.00		25.00	0.00	0.00	264.16	0.94	240.36	343.95	0.89	0.61	0.93	2.00	2.00	2.00	NO
7.700	25.262	287.74	213.44	0.76	146.35	129.12	146.30	0.36	1.52	0.00		25.00	0.00	0.00	213.44	0.94	193.54	282.29	0.88	0.61	0.93	2.00	2.00	2.00	NO
7.800	25.591	287.41	183.38	1.10	148.25	130.04	123.93	0.61	1.70	0.00		25.00	0.00	0.00	183.38	0.93	165.06	244.77	0.88	0.61	0.92	2.00	2.00	2.00	NO
7.900	25.919	287.08	190.55	1.26	150.15	130.96	127.17	0.67	1.72	0.00		25.00	0.00	0.00	190.55	0.93	171.57	253.35	0.88	0.62	0.92	2.00	2.00	2.00	NO
8.000	26.247	286.75	210.28	1.01	152.06	131.88	138.67	0.48	1.61	0.00		25.00	0.00	0.00	210.28	0.93	188.76	275.99	0.88	0.62	0.92	2.00	2.00	2.00	NO
8.100	26.575	286.43	251.15	1.11	153.96	132.80	163.76	0.44	1.53	0.00		25.00	0.00	0.00	251.15	0.93	224.72	323.34	0.88	0.62	0.92	2.00	2.00	2.00	NO
8.200	26.903	286.10	294.86	1.08	155.86	133.72	190.08	0.37	1.43	0.00		25.00	0.00	0.00	294.86	0.93	262.97	373.73	0.87	0.62	0.92	2.00	2.00	2.00	NO
8.300	27.231	285.77	277.29	1.24	157.76	134.64	176.53	0.45	1.50	0.00		25.00	0.00	0.00	277.29	0.93	246.51	352.05	0.87	0.62	0.91	2.00	2.00	2.00	NO
8.400	27.559	285.44	224.97	1.01	159.66	135.56	141.31	0.45	1.58	0.00		25.00	0.00	0.00	224.97	0.93	199.36	289.96	0.87	0.63	0.91	2.00	2.00	2.00	NO
8.500	27.887	285.11	228.64	0.51	161.56	136.48	141.94	0.23	1.44	0.00		25.00	0.00	0.00	228.64	0.92	201.99	293.41	0.87	0.63	0.91	2.00	2.00	2.00	NO
8.600	28.215	284.78	271.41	0.93	163.46	137.40	166.70	0.34	1.46	0.00		25.00	0.00	0.00	271.41	0.92	239.04	342.20	0.87	0.63	0.91	2.00	2.00	2.00	NO
8.700	28.543	284.46	280.10	1.04	165.36	138.32	170.08	0.37	1.47	0.00		25.00	0.00	0.00	280.10	0.92	245.94	351.30	0.86	0.63	0.91	2.00	2.00	2.00	NO
8.800	28.871	284.13	271.86	0.97	167.26	139.24	163.16	0.36	1.48	0.00		25.00	0.00	0.00	271.86	0.92	237.99	340.82	0.86	0.63	0.90	2.00	2.00	2.00	NO
8.900	29.199	283.80	293.86	0.84	169.16	140.16	174.45	0.29	1.40	0.00		25.00	0.00	0.00	293.86	0.92	256.48	365.17	0.86	0.63	0.90	2.00	2.00	2.00	NO
9.000	29.528	283.47	319.70	0.94	171.06	141.08	187.76	0.30	1.38	0.00		25.00	0.00	0.00	319.70	0.92	278.21	393.80	0.86	0.64	0.90	2.00	2.00	2.00	NO
9.100	29.856	283.14	276.98	1.70	172.96	142.00	160.74	0.62	1.62	0.00		25.00	0.00	0.00	276.98	0.91	240.33	343.91	0.86	0.64	0.90	2.00	2.00	2.00	NO
9.200	30.184	282.82	250.99	1.56	174.86	142.92	143.97	0.62	1.66	0.00		25.00	0.00	0.00	250.99	0.91	217.15	313.38	0.85	0.64	0.90	2.00	2.00	2.00	NO
9.300	30.512	282.49	235.26	1.29	176.76	143.84	133.42	0.55	1.65	0.00		25.00	0.00	0.00	235.26	0.91	202.96	294.69	0.85	0.64	0.89	2.00	2.00	2.00	NO
9.400	30.840	282.16	228.89	1.24	178.66	144.76	128.39	0.55	1.66	0.00		25.00	0.00	0.00	228.89	0.91	196.91	286.73	0.85	0.64	0.89	2.00	2.00	2.00	NO
9.500	31.168	281.83	221.84	1.25	180.57	145.68	123.09	0.57	1.69	0.00		25.00	0.00	0.00	221.84	0.91	190.32	278.04	0.85	0.64	0.89	2.00	2.00	2.00	NO
9.600	31.496	281.50	217.87	1.48	182.47	146.60	119.60	0.68	1.75	0.00		25.00	0.00	0.00	217.87	0.91	186.39	272.87	0.84	0.64	0.89	2.00	2.00	2.00	NO
9.700	31.824	281.18	402.36	1.10	184.37	147.52	219.42	0.27	1.31	0.00		25.00	0.00	0.00	402.36	0.90	343.29	479.51	0.84	0.64	0.89	2.00	2.00	2.00	NO
9.800	32.152	280.85	522.44	2.44	186.27	148.44	282.28	0.47	1.35	0.00		25.00	0.00	0.00	522.44	0.90	444.53	612.85	0.84	0.64	0.88	2.00	2.00	2.00	NO
9.900	32.480	280.52	497.15	2.25	188.17	149.36	265.85	0.46	1.37	0.00		25.00	0.00	0.00	497.15	0.90	421.89	583.02	0.84	0.65	0.88	2.00	2.00	2.00	NO
10.000	32.808	280.19	435.96	2.25	190.07	150.28	230.66	0.52	1.45	0.00		25.00	0.00	0.00	435.96	0.90	368.98	513.35	0.84	0.65	0.88	2.00	2.00	2.00	NO
10.100	33.136	279.86	395.50	2.57	191.97	151.20	207.08	0.65	1.55	0.00		25.00	0.00	0.00	395.50	0.90	333.86	467.08	0.83	0.65	0.88	2.00	2.00	2.00	NO
10.200	33.465	279.54	369.40	1.52	193.87	152.11	191.45	0.41	1.45	0.00		25.00	0.00	0.00	369.40	0.90	311.02	437.00	0.83	0.65	0.88	2.00	2.00	2.00	NO
10.300	33.793	279.21	295.95	1.25	195.77	153.03	151.68	0.42	1.54	0.00		25.00	0.00	0.00	295.95	0.90	248.53	354.71	0.83	0.65	0.88	2.00	2.00	2.00	NO
10.400	34.121	278.88	171.17	0.81	197.67	153.95	86.46	0.48	1.78	0.00		25.00	0.00	0.00	171.17	0.87	138.36	209.61	0.83	0.65	0.88	1.85	2.00	2.00	NO
10.500	34.449	278.55	99.15	0.31	199.57	154.87	49.18	0.32	1.92	0.00		25.00	0.00	0.00	99.15	0.82	72.98	123.50	0.83	0.65	0.95	0.19	0.22	0.34	YES
10.600	34.777	278.22	69.67	0.14	201.47	155.79	33.93	0.20	2.01	0.00		25.00	0.00	0.00	69.67	0.80	48.74	91.58	0.82	0.65	0.96	0.13	0.16	0.24	YES
10.700	35.105	277.90	56.78	0.17	203.37	156.71	27.20	0.31	2.15	0.00		25.00	0.00	0.00	56.78	0.79	38.61	78.24	0.82	0.65	0.96	0.11	0.13	0.21	YES
10.800	35.433	277.57	50.39	0.38	205.27	157.63	23.79	0.79	2.37	0.00		25.00	0.00	0.00	50.39	0.78	33.67	71.73	0.82	0.65	0.96	0.10	0.12	0.19	YES
10.900	35.761	277.24	47.18	0.50	207.17	158.55	22.00	1.11	2.48	0.00		25.00	0.00	0.00	47.18	0.77	31.14	68.41	0.82	0.65	0.96	0.10	0.12	0.18	YES
11.000	36.089	276.91	41.21	0.20	209.08	159.47	18.91	0.50	2.38	0.00		25.00	0.00	0.00	41.21	0.76	26.71	62.56	0.82	0.65	0.96	0.09	0.11	0.17	YES
11.100	36.417	276.58	26.35	0.04	210.98	160.39	11.61	0.18	2.45	0.00		25.00	0.00	0.00	26.35	0.74	16.42	49.01	0.81	0.65	0.97	0.08	0.09	0.14	YES
11.200	36.745	276.25	17.69	0.03	212.88	161.31	7.39	0.19	2.65	0.00	clay	25.00	0.00	0.00	17.69	0.88	n.a.	n.a.	0.81	0.65	0.86	n.a.	n.a.	2.00	NO
11.300	37.073	275.93	15.94	0.02	214.78	162.23	6.50	0.17	2.70	0.00	clay	25.00	0.00	0.00	15.94	0.88	n.a.	n.a.	0.81	0.65	0.86	n.a.	n.a.	2.00	NO
11.400	37.402	275.60	14.24	0.02	216.68	163.15	5.67	0.16	2.75	0.00	clay	25.00	0.00	0.00	14.24	0.88	n.a.	n.a.	0.81	0.66	0.86	n.a.	n.a.	2.00	NO
11.500	37.730	275.27	13.05	0.02	218.58	164.07	5.08	0.17	2.80	0.00	clay	25.00	0.00	0.00	13.05	0.88	n.a.	n.a.	0.81	0.66	0.85	n.a.	n.a.	2.00	NO
11.600	38.058	274.94	11.98	0.02	220.48	164.99	4.55	0.19	2.86	0.00	clay	25.00	0.00	0.00	11.98	0.88	n.a.	n.a.	0.80	0.66	0.85	n.a.	n.a.	2.00	NO
11.700	38.386	274.61	11.57	0.02	222.38	165.91	4.34	0.20	2.88	0.00	clay	25.00	0.00	0.00	11.57	0.88	n.a.	n.a.	0.80	0.66	0.85	n.a.	n.a.	2.00	NO
11.800	38.714	274.29	11.81	0.02	224.28	166.83	4.42	0.20	2.87	0.00	clay	25.00	0.00	0.00	11.81	0.88	n.a.	n.a.	0.80	0.66	0.85	n.a.	n.a.	2.00	NO
11.900	39.042	273.96	11.54	0.02	226.18	167.75	4.27	0.20	2.89	0.00	clay	25.00	0.00	0.00	11.54	0.87	n.a.	n.a.	0.80	0.66	0.85	n.a.	n.a.	2.00	NO
12.000	39.370	273.63	12.39	0.09	228.08	168.67	4.63	0.90	3.04	0.00	clay	25.00	0.00	0.00	12.39	0.87	n.a.	n.a.	0.79	0.66	0.85	n.a.	n.a.	2.00	NO
12.100	39.698	273.30	45.72	0.41	229.98	169.59	19.77	0.95	2.48	0.00		25.00	0.00	0.00	45.72	0.74	28.79	65.31	0.79	0.66	0.96	0.09	0.11	0.17	YES
12.200	40.026	272.97	222.32	0.94	231.88	170.51	99.72	0.43	1.70	0.00		25.00	0.00	0.00	222.32	0.87	180.43	265.02	0.79	0.66	0.84	2.00	2.00	2.00	NO
12.300	40.354	272.65	367.14	1.18	233.78	171.43	164.68	0.32	1.45	0.00		25.00	0.00	0.00	367.14	0.87	297.64	419.39	0.79	0.66	0.84	2.00	2.00	2.00	NO

LIQUEFACTION TRIGGERING ANALYSIS
LOS ANGELES WATER WHEEL
LOS ANGELES, CALIFORNIA

Geosyntec consultants

12.400	40.682	272.32	423.18	1.23	235.69	172.35	189.19	0.29	1.38	0.00		25.00	0.00	0.00	423.18	0.87	342.70	478.73	0.79	0.66	0.84	2.00	2.00	2.00	NO
12.500	41.010	271.99	442.14	1.37	237.59	173.27	196.90	0.31	1.38	0.00		25.00	0.00	0.00	442.14	0.87	357.67	498.45	0.78	0.66	0.84	2.00	2.00	2.00	NO
12.600	41.339	271.66	422.83	1.59	239.49	174.19	187.48	0.38	1.44	0.00		25.00	0.00	0.00	422.83	0.87	341.68	477.39	0.78	0.66	0.84	2.00	2.00	2.00	NO
12.700	41.667	271.33	438.75	1.74	241.39	175.11	193.78	0.40	1.44	0.00		25.00	0.00	0.00	438.75	0.86	354.17	493.83	0.78	0.66	0.83	2.00	2.00	2.00	NO
12.800	41.995	271.01	408.92	1.75	243.29	176.03	179.80	0.43	1.49	0.00		25.00	0.00	0.00	408.92	0.86	329.74	461.66	0.78	0.66	0.83	2.00	2.00	2.00	NO
12.900	42.323	270.68	199.67	2.79	245.19	176.95	86.89	1.42	2.06	0.00		25.00	0.00	0.00	199.67	0.85	158.07	235.57	0.78	0.66	0.83	2.00	2.00	2.00	NO
13.000	42.651	270.35	72.77	1.97	247.09	177.87	30.85	2.80	2.59	0.00	clay	25.00	0.00	0.00	72.77	0.86	n.a.	n.a.	0.77	0.66	0.83	n.a.	n.a.	2.00	NO
13.100	42.979	270.02	51.24	1.37	248.99	178.79	21.31	2.81	2.71	0.00	clay	25.00	0.00	0.00	51.24	0.86	n.a.	n.a.	0.77	0.66	0.83	n.a.	n.a.	2.00	NO
13.200	43.307	269.69	78.40	1.94	250.89	179.71	33.05	2.55	2.54	0.00	clay	25.00	0.00	0.00	78.40	0.86	n.a.	n.a.	0.77	0.66	0.83	n.a.	n.a.	2.00	NO
13.300	43.635	269.36	116.08	2.42	252.79	180.63	49.24	2.13	2.36	0.00		25.00	0.00	0.00	116.08	0.78	81.00	134.07	0.77	0.66	0.92	0.21	0.25	0.38	YES
13.400	43.963	269.04	121.80	2.25	254.69	181.54	51.51	1.89	2.31	0.00		25.00	0.00	0.00	121.80	0.78	85.61	140.14	0.77	0.66	0.91	0.23	0.27	0.41	YES
13.500	44.291	268.71	129.12	2.60	256.59	182.46	54.45	2.05	2.31	0.00		25.00	0.00	0.00	129.12	0.79	91.64	148.08	0.76	0.66	0.91	0.26	0.30	0.46	YES
13.600	44.619	268.38	152.11	2.94	258.49	183.38	64.08	1.96	2.25	0.00		25.00	0.00	0.00	152.11	0.80	111.60	174.37	0.76	0.66	0.88	0.46	0.51	0.78	YES
13.700	44.948	268.05	225.97	2.74	260.39	184.30	95.35	1.23	1.98	0.00		25.00	0.00	0.00	225.97	0.85	180.51	265.13	0.76	0.66	0.82	2.00	2.00	2.00	NO
13.800	45.276	267.72	426.76	1.21	262.29	185.22	180.34	0.29	1.39	0.00		25.00	0.00	0.00	426.76	0.85	340.56	475.91	0.76	0.66	0.82	2.00	2.00	2.00	NO
13.900	45.604	267.40	604.70	1.66	264.20	186.14	255.00	0.28	1.25	0.00		25.00	0.00	0.00	604.70	0.85	482.07	662.28	0.76	0.65	0.82	2.00	2.00	2.00	NO
14.000	45.932	267.07	609.06	2.08	266.10	187.06	255.86	0.34	1.30	0.00		25.00	0.00	0.00	609.06	0.85	485.05	666.20	0.75	0.65	0.81	2.00	2.00	2.00	NO
14.100	46.260	266.74	618.63	2.42	268.00	187.98	258.89	0.39	1.33	0.00		25.00	0.00	0.00	618.63	0.85	492.17	675.59	0.75	0.65	0.81	2.00	2.00	2.00	NO
14.200	46.588	266.41	582.72	2.40	269.90	188.90	242.86	0.41	1.37	0.00		25.00	0.00	0.00	582.72	0.85	463.13	637.34	0.75	0.65	0.81	2.00	2.00	2.00	NO
14.300	46.916	266.08	574.61	1.66	271.80	189.82	238.55	0.29	1.29	0.00		25.00	0.00	0.00	574.61	0.85	456.23	628.25	0.75	0.65	0.81	2.00	2.00	2.00	NO
14.400	47.244	265.76	580.56	1.34	273.70	190.74	240.11	0.23	1.24	0.00		25.00	0.00	0.00	580.56	0.85	460.49	633.87	0.75	0.65	0.81	2.00	2.00	2.00	NO
14.500	47.572	265.43	601.61	1.37	275.60	191.66	247.91	0.23	1.22	0.00		25.00	0.00	0.00	601.61	0.84	476.72	655.23	0.74	0.65	0.81	2.00	2.00	2.00	NO
14.600	47.900	265.10	566.75	1.63	277.50	192.58	232.59	0.29	1.30	0.00		25.00	0.00	0.00	566.75	0.84	448.64	618.26	0.74	0.65	0.81	2.00	2.00	2.00	NO
14.700	48.228	264.77	533.72	2.38	279.40	193.50	218.15	0.45	1.43	0.00		25.00	0.00	0.00	533.72	0.84	422.08	583.28	0.74	0.65	0.80	2.00	2.00	2.00	NO
14.800	48.556	264.44	537.12	2.21	281.30	194.42	218.72	0.41	1.41	0.00		25.00	0.00	0.00	537.12	0.84	424.35	586.27	0.74	0.65	0.80	2.00	2.00	2.00	NO
14.900	48.885	264.12	508.33	2.14	283.20	195.34	206.16	0.42	1.43	0.00		25.00	0.00	0.00	508.33	0.84	401.22	555.80	0.73	0.65	0.80	2.00	2.00	2.00	NO
15.000	49.213	263.79	501.77	2.61	285.10	196.26	202.72	0.52	1.49	0.00		25.00	0.00	0.00	501.77	0.84	395.65	548.46	0.73	0.65	0.80	2.00	2.00	2.00	NO
15.100	49.541	263.46	528.96	2.65	287.00	197.18	212.97	0.50	1.47	0.00		25.00	0.00	0.00	528.96	0.84	416.68	576.17	0.73	0.65	0.80	2.00	2.00	2.00	NO
15.200	49.869	263.13	515.04	1.62	288.90	198.10	206.57	0.32	1.36	0.00		25.00	0.00	0.00	515.04	0.84	405.32	561.21	0.73	0.65	0.80	2.00	2.00	2.00	NO
15.300	50.197	262.80	430.87	1.27	290.81	199.02	171.98	0.30	1.42	0.00		25.00	0.00	0.00	430.87	0.84	338.75	473.53	0.73	0.65	0.80	2.00	2.00	2.00	NO
15.400	50.525	262.48	344.67	0.81	292.71	199.94	136.84	0.24	1.46	0.00		25.00	0.00	0.00	344.67	0.84	270.73	383.94	0.72	0.65	0.79	2.00	2.00	2.00	NO
15.500	50.853	262.15	309.76	0.95	294.61	200.86	122.41	0.31	1.55	0.00		25.00	0.00	0.00	309.76	0.83	243.07	347.52	0.72	0.65	0.79	2.00	2.00	2.00	NO
15.600	51.181	261.82	334.34	1.19	296.51	201.78	131.73	0.36	1.56	0.00		25.00	0.00	0.00	334.34	0.83	262.11	372.59	0.72	0.65	0.79	2.00	2.00	2.00	NO
15.700	51.509	261.49	354.04	1.11	298.41	202.70	139.04	0.32	1.51	0.00		25.00	0.00	0.00	354.04	0.83	277.28	392.58	0.72	0.65	0.79	2.00	2.00	2.00	NO
15.800	51.837	261.16	351.17	0.88	300.31	203.62	137.41	0.25	1.47	0.00		25.00	0.00	0.00	351.17	0.83	274.78	389.28	0.72	0.65	0.79	2.00	2.00	2.00	NO
15.900	52.165	260.83	364.38	1.33	302.21	204.54	142.10	0.37	1.53	0.00		25.00	0.00	0.00	364.38	0.83	284.84	402.53	0.72	0.65	0.79	2.00	2.00	2.00	NO
16.000	52.493	260.51	426.35	2.58	304.11	205.46	165.86	0.61	1.60	0.00		25.00	0.00	0.00	426.35	0.83	332.97	465.91	0.71	0.64	0.79	2.00	1.99	2.00	NO
16.100	52.822	260.18	556.69	3.25	306.01	206.38	216.15	0.59	1.51	0.00		25.00	0.00	0.00	556.69	0.83	434.36	599.44	0.71	0.64	0.79	2.00	1.99	2.00	NO
16.200	53.150	259.85	540.36	3.78	307.91	207.30	209.03	0.70	1.57	0.00		25.00	0.00	0.00	540.36	0.83	421.22	582.15	0.71	0.64	0.78	2.00	1.99	2.00	NO
16.300	53.478	259.52	473.79	2.36	309.81	208.22	182.48	0.50	1.52	0.00		25.00	0.00	0.00	473.79	0.83	368.99	513.35	0.71	0.64	0.78	2.00	1.98	2.00	NO
16.400	53.806	259.19	470.15	1.78	311.71	209.14	180.42	0.38	1.45	0.00		25.00	0.00	0.00	470.15	0.83	365.81	509.16	0.71	0.64	0.78	2.00	1.98	2.00	NO
16.500	54.134	258.87	492.47	1.74	313.61	210.06	188.37	0.35	1.42	0.00		25.00	0.00	0.00	492.47	0.82	382.82	531.57	0.70	0.64	0.78	2.00	1.98	2.00	NO
16.600	54.462	258.54	500.70	3.38	315.51	210.97	190.87	0.68	1.59	0.00		25.00	0.00	0.00	500.70	0.82	388.86	539.52	0.70	0.64	0.78	2.00	1.97	2.00	NO
16.700	54.790	258.21	509.64	2.36	317.41	211.89	193.61	0.47	1.48	0.00		25.00	0.00	0.00	509.64	0.82	395.44	548.19	0.70	0.64	0.78	2.00	1.97	2.00	NO
16.800	55.118	257.88	464.71	2.09	319.32	212.81	175.82	0.45	1.51	0.00		25.00	0.00	0.00	464.71	0.82	360.24	501.84	0.70	0.64	0.78	2.00	1.97	2.00	NO
16.900	55.446	257.55	276.37	2.81	321.22	213.73	103.71	1.03	1.91	0.00		25.00	0.00	0.00	276.37	0.82	214.05	309.30	0.70	0.64	0.77	2.00	1.96	2.00	NO
17.000	55.774	257.23	96.26	2.34	323.12	214.65	35.21	2.51	2.51	0.00	clay	25.00	0.00	0.00	96.26	0.82	n.a.	n.a.	0.69	0.64	0.77	n.a.	n.a.	2.00	NO
17.100	56.102	256.90	77.85	1.67	325.02	215.57	28.14	2.24	2.56	0.00	clay	25.00	0.00	0.00	77.85	0.82	n.a.	n.a.	0.69	0.64	0.77	n.a.	n.a.	2.00	NO
17.200	56.430	256.57	65.13	1.78	326.92	216.49	23.25	2.87	2.69	0.00	clay	25.00	0.00	0.00	65.13	0.82	n.a.	n.a.	0.69	0.64	0.77	n.a.	n.a.	2.00	NO
17.300	56.759	256.24	71.19	1.86	328.82	217.41	25.44	2.74	2.65	0.00	clay	25.00	0.00	0.00	71.19	0.82	n.a.	n.a.	0.69	0.64	0.77	n.a.	n.a.	2.00	NO
17.400	57.087	255.91	158.35	2.61	330.72	218.33	57.87	1.68	2.24	0.00		25.00	0.00	0.00	158.35	0.75	110.15	172.46	0.69	0.64	0.85	0.43	0.47	0.73	YES
17.500	57.415	255.59	348.19	2.13	332.62	219.25	128.27	0.62	1.70	0.00		25.00	0.00	0.00	348.19	0.82	268.21	380.63	0.68	0.63	0.77	2.00	1.94	2.00	NO
17.600	57.743	255.26	396.50	3.52	334.52	220.17	145.73	0.90	1.76	0.00		25.00	0.00	0.00	396.50	0.81	305.16	429.29	0.68	0.63	0.77	2.00	1.94	2.00	NO
17.700	58.071	254.93	365.03	3.82	336.42	221.09	133.61	1.06	1.83	0.00		25.00	0.00	0.00	365.03	0.81	280.69	397.06	0.68	0.63	0.76	2.00	1.94	2.00	NO
17.800	58.399	254.60	324.50	2.94	338.32	222.01	118.24	0.91	1.83	0.00		25.00	0.00	0.00	324.50	0.81	249.30	355.73	0.68	0.63	0.76	2.00	1.93	2.00	NO
17.900	58.727	254.27	265.37	2.54	340.22	222.93	96.14	0.97	1.92	0.00		25.00	0.00	0.00	265.37	0.81	203.69	295.66	0.68	0.63	0.76	2.00	1.93	2.00	NO
18.000	59.055	253.94	198.91	3.60	342.12	223.85	71.50	1.84	2.19	0.00		25.00	0.00	0.00	198.91	0.79	146.62	220.49	0.68	0.63	0.76	2.00	1.93	2.00	NO
18.100	59.383	253.62	124.15	4.41	344.02	224.77	44.01	3.66	2.55	0.00	clay	25.00	0.00	0.00	124.15	0.81	n.a.	n.a.	0.67	0.63	0.76	n.a.	n.a.	2.00	NO
18.200	59.711	253.29	171.41	3.47	345.93	225.69	61.03	2.07	2.28	0.00		25.00	0.00	0.00	171.41	0.76	120.42	185.99	0.67	0.63	0.82	0.65	0.67	1.07	NO
18.300	60.039	252.96	292.99	3.33	347.83	226.61	104.84	1.15	1.93	0.00		25.00	0.00	0.00	292.99	0.81	224.11	322.54	0.67	0.63	0.76	2.00	1.92	2.00	NO
18.400	60.367	252.63	266.43	3.10	349.73	227.53	94.91	1.18	1.97	0.00		25.00	0.00	0.00	266.43	0.81	203.62	295.56	0.67	0.63	0.76	2.00	1.92	2.00	NO
18.500	60.696	252.30	220.15	2.52	351.63	228.45	77.94	1.16	2.04	0.00		25.00	0.00	0.00	220.15	0.80	166.75	247.00	0.67	0.63	0.75	2.00	1.91	2.00	NO
18.600	61.024	251.98	194.24	2.71	353.53	229.37	68.39	1.42	2.14	0.00		25.00	0.00	0.00	194.24	0.77	140.97	213.04	0.66	0.63	0.75	2.00	1.91	2.00	NO
18.700	61.352	251.65	184.09	3.11	355.43	230.29	64.53	1.72	2.21	0.00		25.00	0.00	0.00	184.09	0.76	131.18	200.16	0.66	0.62	0.78	1.15	1.14	1.82	NO
18.800	61.680	251.32	196.67	3.55	357.33	231.21	68.80	1.84	2.21	0.00		25.00	0.00	0.00	196.67	0.77	142.92	215.62	0.66	0.62	0.75	2.00	1.90	2.00	NO
18.900	62.008	250.99	260.04	3.02	359.23	232.13	91.07	1.18	1.99	0.00		25.00	0.00	0.00	260.04	0.80	197.88	288.00	0.66	0.62	0.75	2.00	1.90	2.00	NO
19.000	62.336	250.66	368.70	2.93	361.13	233.05	129.22	0.80	1.76	0.00		25.00	0.00	0.00	368.70	0.80	280.33	396.58	0.66	0.62	0.75	2.00	1.90	2.00	NO
19.100	62.664	250.34	418.52	2.59	363.03	233.97	146.38	0.62	1.65	0.00		25.00	0.00	0.00	418.52	0.80	317.94	446.12	0.66	0.62	0.75	2.00	1.89	2.00	NO
19.200	62.992	250.01	417.64	3.14	364.93	234.89	145.59	0.76	1.71	0.00		25.00	0.00	0.00	417.64	0.80	317.00	444.88	0.65	0.62	0.75	2.00	1.89	2.00	NO
19.300	63.320	249.68	323.83	4.97	366.83	235.81	112.24	1.55	2.00	0.00		25.00	0.00	0.00	323.83	0.80	245.59	350.83	0.65	0.62	0.75	2.00	1.89	2.00	NO
19.400	63.648	249.35	258.76	3.70	368.73	236.73	89.14	1.45	2.05	0.00		25.00	0.00	0.00	258.76	0.80	196.07	285.62	0.65	0.62	0.74	2.00	1.89	2.00	NO
19.500	63.976	249.02	306.62	2.17	370.63	237.65	105.52	0.72	1.80	0.00		25.00	0.00	0.00	306.62	0.80	232.15	333.13	0.65	0.62	0.74	2.00	1.88	2.00	NO

LIQUEFACTION TRIGGERING ANALYSIS
LOS ANGELES WATER WHEEL
LOS ANGELES, CALIFORNIA

Geosyntec consultants

19.600	64.304	248.70	328.62	2.08	372.53	238.57	112.82	0.64	1.75	0.00		25.00	0.00	0.00	328.62	0.80	248.60	354.80	0.65	0.62	0.74	2.00	1.88	2.00	NO
19.700	64.633	248.37	327.96	3.57	374.44	239.49	112.23	1.10	1.90	0.00		25.00	0.00	0.00	327.96	0.80	247.89	353.86	0.65	0.62	0.74	2.00	1.88	2.00	NO
19.800	64.961	248.04	341.00	4.24	376.34	240.40	116.37	1.26	1.93	0.00		25.00	0.00	0.00	341.00	0.80	257.53	366.56	0.64	0.62	0.74	2.00	1.87	2.00	NO
19.900	65.289	247.71	361.86	2.45	378.24	241.32	123.17	0.68	1.74	0.00		25.00	0.00	0.00	361.86	0.79	273.06	387.02	0.64	0.61	0.74	2.00	1.87	2.00	NO
20.000	65.617	247.38	462.53	1.53	380.14	242.24	157.30	0.33	1.47	0.00		25.00	0.00	0.00	462.53	0.79	348.73	486.68	0.64	0.61	0.74	2.00	1.87	2.00	NO
20.100	65.945	247.06	445.19	1.65	382.04	243.16	150.88	0.37	1.51	0.00		25.00	0.00	0.00	445.19	0.79	335.39	469.10	0.64	0.61	0.74	2.00	1.87	2.00	NO
20.200	66.273	246.73	247.22	3.19	383.94	244.08	82.95	1.31	2.05	0.00		25.00	0.00	0.00	247.22	0.79	186.10	272.48	0.64	0.61	0.73	2.00	1.86	2.00	NO
20.300	66.601	246.40	111.97	2.42	385.84	245.00	36.74	2.24	2.47	0.00		25.00	0.00	0.00	111.97	0.66	67.93	116.85	0.64	0.61	0.89	0.17	0.20	0.32	YES
20.400	66.929	246.07	100.22	1.48	387.74	245.92	32.64	1.54	2.41	0.00		25.00	0.00	0.00	100.22	0.65	59.17	105.32	0.63	0.61	0.90	0.15	0.17	0.28	YES
20.500	67.257	245.74	116.57	1.88	389.64	246.84	38.05	1.66	2.38	0.00		25.00	0.00	0.00	116.57	0.67	71.16	121.10	0.63	0.61	0.89	0.18	0.20	0.34	YES
20.600	67.585	245.41	85.24	2.10	391.54	247.76	27.38	2.58	2.61	0.00	clay	25.00	0.00	0.00	85.24	0.79	n.a.	n.a.	0.63	0.61	0.73	n.a.	n.a.	2.00	NO
20.700	67.913	245.09	65.11	1.60	393.44	248.68	20.54	2.61	2.71	0.00	clay	25.00	0.00	0.00	65.11	0.79	n.a.	n.a.	0.63	0.61	0.73	n.a.	n.a.	2.00	NO
20.800	68.241	244.76	89.14	1.49	395.34	249.60	28.51	1.75	2.49	0.00		25.00	0.00	0.00	89.14	0.63	50.96	94.51	0.63	0.61	0.91	0.13	0.15	0.25	YES
20.900	68.570	244.43	73.24	1.56	397.24	250.52	23.11	2.25	2.63	0.00	clay	25.00	0.00	0.00	73.24	0.79	n.a.	n.a.	0.63	0.61	0.73	n.a.	n.a.	2.00	NO
21.000	68.898	244.10	128.61	1.31	399.14	251.44	41.45	1.05	2.23	0.00		25.00	0.00	0.00	128.61	0.67	79.80	132.49	0.62	0.61	0.87	0.21	0.23	0.38	YES
21.100	69.226	243.77	219.01	1.66	401.05	252.36	71.28	0.77	1.96	0.00		25.00	0.00	0.00	219.01	0.77	160.57	238.87	0.62	0.60	0.72	2.00	1.84	2.00	NO
21.200	69.554	243.45	148.94	3.49	402.95	253.28	47.90	2.41	2.40	0.00		25.00	0.00	0.00	148.94	0.69	95.95	153.76	0.62	0.60	0.85	0.29	0.31	0.52	YES
21.300	69.882	243.12	94.10	4.45	404.85	254.20	29.68	4.94	2.77	0.00	clay	25.00	0.00	0.00	94.10	0.78	n.a.	n.a.	0.62	0.60	0.72	n.a.	n.a.	2.00	NO
21.400	70.210	242.79	126.29	3.66	406.75	255.12	40.17	2.99	2.52	0.00	clay	25.00	0.00	0.00	126.29	0.78	n.a.	n.a.	0.62	0.60	0.72	n.a.	n.a.	2.00	NO
21.500	70.538	242.46	65.86	2.30	408.65	256.04	20.25	3.72	2.81	0.00	clay	25.00	0.00	0.00	65.86	0.78	n.a.	n.a.	0.62	0.60	0.72	n.a.	n.a.	2.00	NO
21.600	70.866	242.13	31.50	0.80	410.55	256.96	8.96	2.92	3.03	0.00	clay	25.00	0.00	0.00	31.50	0.78	n.a.	n.a.	0.62	0.60	0.72	n.a.	n.a.	2.00	NO
21.700	71.194	241.81	30.62	0.38	412.45	257.88	8.64	1.42	2.88	0.00	clay	25.00	0.00	0.00	30.62	0.78	n.a.	n.a.	0.61	0.60	0.72	n.a.	n.a.	2.00	NO
21.800	71.522	241.48	30.92	0.37	414.35	258.80	8.71	1.38	2.87	0.00	clay	25.00	0.00	0.00	30.92	0.78	n.a.	n.a.	0.61	0.60	0.72	n.a.	n.a.	2.00	NO
21.900	71.850	241.15	30.17	0.42	416.25	259.72	8.43	1.62	2.92	0.00	clay	25.00	0.00	0.00	30.17	0.78	n.a.	n.a.	0.61	0.60	0.72	n.a.	n.a.	2.00	NO
22.000	72.178	240.82	27.88	0.39	418.15	260.64	7.66	1.65	2.96	0.00	clay	25.00	0.00	0.00	27.88	0.78	n.a.	n.a.	0.61	0.60	0.72	n.a.	n.a.	2.00	NO
22.100	72.507	240.49	34.16	0.60	420.05	261.56	9.65	2.01	2.91	0.00	clay	25.00	0.00	0.00	34.16	0.78	n.a.	n.a.	0.61	0.60	0.71	n.a.	n.a.	2.00	NO
22.200	72.835	240.17	90.88	1.07	421.95	262.48	27.82	1.24	2.41	0.00		25.00	0.00	0.00	90.88	0.61	50.84	94.34	0.61	0.60	0.90	0.13	0.15	0.26	YES
22.300	73.163	239.84	76.60	1.03	423.85	263.40	23.16	1.43	2.51	0.00	clay	25.00	0.00	0.00	76.60	0.78	n.a.	n.a.	0.60	0.59	0.71	n.a.	n.a.	2.00	NO
22.400	73.491	239.51	31.64	0.51	425.75	264.32	8.75	1.86	2.93	0.00	clay	25.00	0.00	0.00	31.64	0.78	n.a.	n.a.	0.60	0.59	0.71	n.a.	n.a.	2.00	NO
22.500	73.819	239.18	36.79	0.59	427.65	265.24	10.36	1.80	2.86	0.00	clay	25.00	0.00	0.00	36.79	0.78	n.a.	n.a.	0.60	0.59	0.71	n.a.	n.a.	2.00	NO
22.600	74.147	238.85	37.25	0.80	429.56	266.16	10.47	2.41	2.93	0.00	clay	25.00	0.00	0.00	37.25	0.77	n.a.	n.a.	0.60	0.59	0.71	n.a.	n.a.	2.00	NO
22.700	74.475	238.52	32.41	0.52	431.46	267.08	8.90	1.85	2.93	0.00	clay	25.00	0.00	0.00	32.41	0.77	n.a.	n.a.	0.60	0.59	0.71	n.a.	n.a.	2.00	NO
22.800	74.803	238.20	28.19	0.35	433.36	268.00	7.54	1.48	2.94	0.00	clay	25.00	0.00	0.00	28.19	0.77	n.a.	n.a.	0.60	0.59	0.71	n.a.	n.a.	2.00	NO
22.900	75.131	237.87	28.56	0.43	435.26	268.92	7.63	1.76	2.97	0.00	clay	25.00	0.00	0.00	28.56	0.77	n.a.	n.a.	0.60	0.59	0.71	n.a.	n.a.	2.00	NO
23.000	75.459	237.54	32.31	0.46	437.16	269.83	8.77	1.66	2.91	0.00	clay	25.00	0.00	0.00	32.31	0.77	n.a.	n.a.	0.59	0.59	0.70	n.a.	n.a.	2.00	NO
23.100	75.787	237.21	29.97	0.57	439.06	270.75	8.01	2.23	3.01	0.00	clay	25.00	0.00	0.00	29.97	0.77	n.a.	n.a.	0.59	0.59	0.70	n.a.	n.a.	2.00	NO
23.200	76.115	236.88	158.46	1.37	440.96	271.67	48.04	0.89	2.14	0.00		25.00	0.00	0.00	158.46	0.68	100.97	160.37	0.59	0.59	0.83	0.33	0.34	0.59	YES
23.300	76.444	236.56	478.67	1.54	442.86	272.59	147.43	0.33	1.49	0.00		25.00	0.00	0.00	478.67	0.77	351.69	490.57	0.59	0.59	0.70	2.00	1.78	2.00	NO

LIQUEFACTION TRIGGERING ANALYSIS
LOS ANGELES WATER WHEEL
LOS ANGELES, CALIFORNIA

Geosyntec consultants

Input Parameters

Boring Designation	SCPTu-2 (settlement)
Ground Surface Elevation (ft)	313
Peak Ground Acceleration (g)	0.94
Earthquake Magnitude, M=	6.6
Water Table Depth (m)	5.94
Historic High Water Table Elevation =	293.5
Unit Weight above Water Table (pcf)	120.9
Unit Weight below Water Table (pcf)	127.2

Intermediate Parameters

Unit Weight above Water Table (kN/m^3)	19.0
Unit Weight below Water Table (kN/m^3)	20.0
Magnitude scaling factor, MSF	1.27

Legend

= Manual Input
= Calculated Value
= Calculated Factor of Safety against Liquefaction is over 1.0
= Calculated Factor of Safety against Liquefaction is 1.0 or Lower
red text = Manual input cell with formula used as input (and subject to change)
= Cell value not relevant for this sheet

NOTE: There is a significant difference between field water table elevation and assumed historic high water elevation (i.e., about 18 ft). qc1N should be calculated for field conditions (using "field" sheet), then used to calculate FS for historic high conditions (using "high" sheet).

Depth (m b.g.s.)	Depth (ft b.g.s.)	Elevation (ft)	Tip q_{cN}	F_{sN}	σ_{vc} (kPa)	σ_{vc}' (kPa)	Q	F	I_c	Layer	Flag "clay" or "Unsaturated"	Fines (%)	Interpreted q_{c1N} near interfaces	Thin layer factor	Interpreted q_{c1N}	C_N	q_{c1N}	qcN1-cs	Stress reduc. coeff, r_d	CSR	K_α for sand	CRR for M=7.5 & σ_{vc}'=1 atm	CRR	Factor of Safety	Limiting shear strain γ_{lim}	Parameter F_α	Maximum shear strain γ_{max}	ΔH_i (m)	ΔLDI_i (m)	Vertical reconsol. Strain ε_c	ΔS_i (m)
0.100	0.328	312.67	0.00	0.00	1.90	1.90	-1.00	0.00	#NUM!	0.00	unsaturated	25.00	0.00	0.00	0.00	1.70	0.00	27.39	1.01	0.61	1.10	0.06	n.a.	2.00							
0.200	0.656	314.34	0.00	0.00	3.80	3.80	-1.00	0.00	#NUM!	0.00	unsaturated	25.00	0.00	0.00	0.00	1.70	0.00	27.39	1.01	0.61	1.10	0.06	n.a.	2.00	1.000	0.943	0.000	0.100	0.000	0.000	0.000
0.300	0.984	312.02	0.00	0.00	5.70	5.70	-1.00	0.00	#NUM!	0.00	unsaturated	25.00	0.00	0.00	0.00	1.70	0.00	27.39	1.00	0.61	1.10	0.06	n.a.	2.00	1.000	0.943	0.000	0.100	0.000	0.000	0.000
0.400	1.312	311.69	0.00	0.00	7.60	7.60	-1.00	0.00	#NUM!	0.00	unsaturated	25.00	0.00	0.00	0.00	1.70	0.00	27.39	1.00	0.61	1.10	0.06	n.a.	2.00	1.000	0.943	0.000	0.100	0.000	0.000	0.000
0.500	1.640	311.36	0.00	0.00	9.50	9.50	-1.00	0.00	#NUM!	0.00	unsaturated	25.00	0.00	0.00	0.00	1.70	0.00	27.39	1.00	0.61	1.10	0.06	n.a.	2.00	1.000	0.943	0.000	0.100	0.000	0.000	0.000
0.600	1.969	311.03	0.00	0.00	11.40	11.40	-1.00	0.00	#NUM!	0.00	unsaturated	25.00	0.00	0.00	0.00	1.70	0.00	27.39	1.00	0.61	1.10	0.06	n.a.	2.00	1.000	0.943	0.000	0.100	0.000	0.000	0.000
0.700	2.297	310.70	0.00	0.00	13.30	13.30	-1.00	0.00	#NUM!	0.00	unsaturated	25.00	0.00	0.00	0.00	1.70	0.00	27.39	1.00	0.61	1.10	0.06	n.a.	2.00	1.000	0.943	0.000	0.100	0.000	0.000	0.000
0.800	2.625	310.38	0.00	0.00	15.21	15.21	-1.00	0.00	#NUM!	0.00	unsaturated	25.00	0.00	0.00	0.00	1.70	0.00	27.39	1.00	0.61	1.10	0.06	n.a.	2.00	1.000	0.943	0.000	0.100	0.000	0.000	0.000
0.900	2.953	310.05	0.00	0.00	17.11	17.11	-1.00	0.00	#NUM!	0.00	unsaturated	25.00	0.00	0.00	0.00	1.70	0.00	27.39	1.00	0.61	1.10	0.06	n.a.	2.00	1.000	0.943	0.000	0.100	0.000	0.000	0.000
1.000	3.281	309.72	0.00	0.00	19.01	19.01	-1.00	0.00	#NUM!	0.00	unsaturated	25.00	0.00	0.00	0.00	1.70	0.00	27.39	1.00	0.61	1.10	0.06	n.a.	2.00	1.000	0.943	0.000	0.100	0.000	0.000	0.000
1.100	3.609	309.39	0.00	0.00	20.91	20.91	-1.00	0.00	#NUM!	0.00	unsaturated	25.00	0.00	0.00	0.00	1.70	0.00	27.39	0.99	0.61	1.09	0.06	n.a.	2.00	1.000	0.943	0.000	0.100	0.000	0.000	0.000
1.200	3.937	309.06	0.00	0.00	22.81	22.81	-1.00	0.00	#NUM!	0.00	unsaturated	25.00	0.00	0.00	0.00	1.70	0.00	27.39	0.99	0.61	1.09	0.06	n.a.	2.00	1.000	0.943	0.000	0.100	0.000	0.000	0.000
1.300	4.265	308.73	0.00	0.00	24.71	24.71	-1.00	0.00	#NUM!	0.00	unsaturated	25.00	0.00	0.00	0.00	1.70	0.00	27.39	0.99	0.61	1.08	0.06	n.a.	2.00	1.000	0.943	0.000	0.100	0.000	0.000	0.000
1.400	4.593	308.41	0.00	0.00	26.61	26.61	-1.00	0.00	#NUM!	0.00	unsaturated	25.00	0.00	0.00	0.00	1.70	0.00	27.39	0.99	0.61	1.08	0.06	n.a.	2.00	1.000	0.943	0.000	0.100	0.000	0.000	0.000
1.500	4.921	308.08	143.54	0.91	28.51	28.51	507.52	0.63	1.28	0.00	unsaturated	25.00	0.00	0.00	143.54	1.40	200.41	291.33	0.99	0.60	1.10	2.00	n.a.	2.00	0.000	-1.866	0.000	0.100	0.000	0.000	0.000
1.600	5.249	307.75	414.12	2.35	30.41	30.41	1374.36	0.57	1.03	0.00	unsaturated	25.00	0.00	0.00	414.12	1.37	568.40	775.98	0.99	0.60	1.10	2.00	n.a.	2.00	0.000	-9.437	0.000	0.100	0.000	0.000	0.000
1.700	5.577	307.42	373.85	2.32	32.31	32.31	1167.58	0.62	1.09	0.00	unsaturated	25.00	0.00	0.00	373.85	1.35	504.99	692.46	0.99	0.60	1.10	2.00	n.a.	2.00	0.000	-8.183	0.000	0.100	0.000	0.000	0.000
1.800	5.906	307.09	318.15	2.07	34.21	34.21	938.22	0.65	1.15	0.00	unsaturated	25.00	0.00	0.00	318.15	1.33	423.31	584.90	0.99	0.60	1.10	2.00	n.a.	2.00	0.000	-6.532	0.000	0.100	0.000	0.000	0.000
1.900	6.234	306.77	269.86	1.23	36.11	36.11	753.75	0.46	1.06	0.00	unsaturated	25.00	0.00	0.00	269.86	1.31	353.98	493.59	0.98	0.60	1.10	2.00	n.a.	2.00	0.000	-5.099	0.000	0.100	0.000	0.000	0.000
2.000	6.562	306.44	228.59	1.43	38.01	38.01	606.34	0.63	1.23	0.00	unsaturated	25.00	0.00	0.00	228.59	1.29	295.81	416.97	0.98	0.60	1.10	2.00	n.a.	2.00	0.000	-3.879	0.000	0.100	0.000	0.000	0.000
2.100	6.890	306.11	205.23	1.20	39.91	39.91	518.31	0.59	1.24	0.00	unsaturated	25.00	0.00	0.00	205.23	1.28	262.18	372.69	0.98	0.60	1.10	2.00	n.a.	2.00	0.000	-3.169	0.000	0.100	0.000	0.000	0.000
2.200	7.218	305.78	176.84	0.71	41.82	41.82	426.15	0.40	1.18	0.00	unsaturated	25.00	0.00	0.00	176.84	1.26	223.17	321.31	0.98	0.60	1.10	2.00	n.a.	2.00	0.000	-2.344	0.000	0.100	0.000	0.000	0.000
2.300	7.546	305.45	150.79	0.90	43.72	43.72	347.39	0.60	1.36	0.00	unsaturated	25.00	0.00	0.00	150.79	1.25	188.07	275.09	0.98	0.60	1.10	2.00	n.a.	2.00	0.000	-1.608	0.000	0.100	0.000	0.000	0.000
2.400	7.874	305.13	133.92	1.06	45.62	45.62	295.51	0.80	1.50	0.00	unsaturated	25.00	0.00	0.00	133.92	1.24	166.29	246.40	0.98	0.60	1.10	2.00	n.a.	2.00	0.003	-1.158	0.000	0.100	0.000	0.000	0.000
2.500	8.202	304.80	119.83	0.91	47.52	47.52	253.70	0.76	1.53	0.00	unsaturated	25.00	0.00	0.00	119.83	1.25	149.99	224.93	0.98	0.60	1.10	2.00	n.a.	2.00	0.009	-0.826	0.000	0.100	0.000	0.000	0.000
2.600	8.530	304.47	112.53	0.70	49.42	49.42	228.99	0.62	1.50	0.00	unsaturated	25.00	0.00	0.00	112.53	1.25	140.74	212.75	0.97	0.60	1.10	2.00	n.a.	2.00	0.014	-0.642	0.000	0.100	0.000	0.000	0.000
2.700	8.858	304.14	108.65	0.67	51.32	51.32	212.84	0.62	1.52	0.00	unsaturated	25.00	0.00	0.00	108.65	1.24	135.16	205.39	0.97	0.59	1.10	1.48	n.a.	2.00	0.018	-0.531	0.000	0.100	0.000	0.000	0.000
2.800	9.186	303.81	102.37	0.61	53.22	53.22	193.29	0.60	1.55	0.00	unsaturated	25.00	0.00	0.00	102.37	1.24	127.02	194.68	0.97	0.59	1.10	0.90	n.a.	2.00	0.026	-0.373	0.000	0.100	0.000	0.000	0.000
2.900	9.514	303.49	95.78	0.98	55.12	55.12	174.51	1.03	1.74	0.00	unsaturated	25.00	0.00	0.00	95.78	1.24	118.55	183.52	0.97	0.59	1.10	0.60	n.a.	2.00	0.037	-0.211	0.000	0.100	0.000	0.000	0.000
3.000	9.843	303.16	107.50	1.26	57.02	57.02	189.41	1.18	1.76	0.00	unsaturated	25.00	0.00	0.00	107.50	1.21	129.93	198.51	0.97	0.59	1.10	1.06	n.a.	2.00	0.023	-0.429	0.000	0.100	0.000	0.000	0.000
3.100	10.171	302.83	122.55	0.36	58.92	58.92	209.08	0.30	1.34	0.00	unsaturated	25.00	0.00	0.00	122.55	1.18	144.57	217.79	0.97	0.59	1.10	2.00	n.a.	2.00	0.011	-0.718	0.000	0.100	0.000	0.000	0.000
3.200	10.499	302.50	136.87	0.02	60.82	60.82	226.28	0.01	1.28	0.00	unsaturated	25.00	0.00	0.00	136.87	1.16	158.14	235.67	0.97	0.59	1.10	2.00	n.a.	2.00	0.005	-0.991	0.000	0.100	0.000	0.000	0.000
3.300	10.827	302.17	140.66	0.02	62.72	62.72	225.50	0.01	1.29	0.00	unsaturated	25.00	0.00	0.00	140.66	1.14	160.79	239.16	0.96	0.59	1.10	2.00	n.a.	2.00	0.004	-1.045	0.000	0.100	0.000	0.000	0.000
3.400	11.155	301.85	152.06	0.24	64.62	64.62	236.65	0.16	1.17	0.00	unsaturated	25.00	0.00	0.00	152.06	1.13	171.17	252.82	0.96	0.59	1.10	2.00	n.a.	2.00	0.002	-1.258	0.000	0.100	0.000	0.000	0.000
3.500	11.483	301.52	169.64	0.97	66.52	66.52	256.55	0.57	1.44	0.00	unsaturated	25.00	0.00	0.00	169.64	1.12	189.39	276.82	0.96	0.59	1.10	2.00	n.a.	2.00	0.000	-1.635	0.000	0.100	0.000	0.000	0.000
3.600	11.811	301.19	160.19	1.81	68.42	68.42	235.45	1.13	1.68	0.00	unsaturated	25.00	0.00	0.00	160.19	1.11	177.52	261.19	0.96	0.59	1.10	2.00	n.a.	2.00	0.001	-1.389	0.000	0.100	0.000	0.000	0.000
3.700	12.139	300.86	173.15	2.04	70.33	70.33	247.68	1.18	1.68	0.00	unsaturated	25.00	0.00	0.00	173.15	1.10	190.50	278.29	0.96	0.58	1.10	2.00	n.a.	2.00	0.000	-1.659	0.000	0.100	0.000	0.000	0.000
3.800	12.467	300.53	240.47	2.46	72.23	72.23	335.27	1.03	1.55	0.00	unsaturated	25.00	0.00	0.00	240.47	1.09	262.71	373.39	0.96	0.58	1.10	2.00	n.a.	2.00	0.000	-3.180	0.000	0.100	0.000	0.000	0.000
3.900	12.795	300.20	247.46	2.63	74.13	74.13	336.17	1.06	1.56	0.00	unsaturated	25.00	0.00	0.00	247.46	1.09	268.50	381.01	0.95	0.58	1.09	2.00	n.a.	2.00	0.000	-3.303	0.000	0.100	0.000	0.000	0.000
4.000	13.123	299.88	235.60	1.21	76.03	76.03	311.99	0.52	1.35	0.00	unsaturated	25.00	0.00	0.00	235.60	1.08	253.93	361.82	0.95	0.58	1.09	2.00	n.a.	2.00	0.000	-2.994	0.000	0.100	0.000	0.000	0.000
4.100	13.451	299.55	207.76	0.86	77.93	77.93	268.27	0.41	1.34	0.00	unsaturated	25.00	0.00	0.00	207.76	1.07	222.47	320.39	0.95	0.58	1.08	2.00	n.a.	2.00	0.000	-2.330	0.000	0.100	0.000	0.000	0.000
4.200	13.780	299.22	214.25	1.00	79.83	79.83	270.08	0.47	1.37	0.00	unsaturated	25.00	0.00	0.00	214.25	1.06	227.97	327.63	0.95	0.58	1.07	2.00	n.a.	2.00	0.000	-2.446	0.000	0.100	0.000	0.000	0.000
4.300	14.108	298.89	222.82	1.05	81.73	81.73	274.36	0.47	1.37	0.00	unsaturated	25.00	0.00	0.00	222.82	1.06	235.62	337.71	0.95	0.58	1.06	2.00	n.a.	2.00	0.000	-2.607	0.000	0.100	0.000	0.000	0.000
4.400	14.436	298.56	246.29	1.43	83.63	83.63	296.44	0.58	1.40	0.00	unsaturated	25.00	0.00	0.00	246.29	1.05	258.86	368.31	0.95	0.58	1.06	2.00	n.a.	2.00	0.000	-3.099	0.000	0.100	0.000	0.000	0.000
4.500	14.764	298.24	268.36	1.91	85.53	85.53	315.89	0.71	1.45	0.00	unsaturated	25.00	0.00	0.00	268.36	1.04	280.39	396.67	0.94	0.58	1.05	2.00	n.a.	2.00	0.000	-3.554	0.000	0.100	0.000	0.000	0.000
4.600	15.092	297.91	327.73	2.40	87.43	87.43	377.59	0.73	1.41	0.00	unsaturated	25.00	0.00	0.00	327.73	1.04	340.44	475.75	0.94	0.58	1.04	2.00	n.a.	2.00	0.000	-4.817	0.000	0.100	0.000	0.000	0.000
4.700	15.420	297.58	308.29	1.77	89.33	89.33	347.56	0.57	1.35	0.00	unsaturated	25.00	0.00	0.00	308.29	1.03	318.44	446.78	0.94	0.57	1.04	2.00	n.a.	2.00	0.000	-4.356	0.000	0.100	0.000	0.000	0.000
4.800	15.748	297.25	312.22	1.39	91.23	91.23	344.65	0.45	1.28	0.00	unsaturated	25.00	0.00	0.00	312.22	1.03	320.71	449.77	0.94	0.57	1.03	2.00	n.a.	2.00	0.000	-4.403	0.000	0.100	0.000	0.000	0.000
4.900	16.076	296.92	350.47	1.77	93.13	93.13	379.07	0.51	1.28	0.00	unsaturated	25.00	0.00	0.00	350.47	1.02	358.05	498.95	0.94	0.57	1.02	2.00	n.a.	2.00	0.000	-5.184	0.000	0.100	0.000	0.000	0.000
5.000	16.404	296.60	321.70	2.74	95.03	95.03	340.90	0.86	1.49	0.00	unsaturated	25.00	0.00	0.00	321.70	1.02	326.91	457.94	0.94	0.57	1.02	2.00	n.a.	2.00	0.000	-4.533	0.000	0.100	0.000	0.000	0.000
5.100	16.732	296.27	326.70	2.37	96.94	96.94	339.40	0.73	1.43	0.00	unsaturated	25.00	0.00	0.00	326.70	1.01	330.26	462.35	0.93	0.57	1.01	2.00	n.a.	2.00	0.000	-4.604	0.000	0.100	0.000	0.000	0.000
5.200	17.060	295.94	333.61	2.27	98.84	98.84	339.91	0.68	1.41	0.00	unsaturated	25.00	0.00	0.00	333.61	1.01	335.52	469.27	0.93	0.57	1.01	2.00	n.a.	2.00	0.000	-4.714	0.000	0.100	0.000	0.000	0.000
5.300	17.388	295.61	388.78	2.01	100.74	100.74	388.80	0.52	1.28	0.00	unsaturated	25.00	0.00	0.00	388.78	1.00	389.05	539.77	0.93	0.57	1.00	2.00	n.a.	2.00	0.000	-5.827	0.000	0.100	0.000	0.000	0.000
5.400	17.717	295.28	391.78	1.52	102.64	102.64	384.53	0.39	1.20	0.00	unsaturated	25.00	0.00	0.00	391.78	1.00	390.12	541.18	0.93	0.57	1.00	2.00	n.a.	2.00	0.000	-5.849	0.000	0.100	0.000	0.000	0.000
5.500	18.045	294.96	400.76	1.96	104.54	104.54	386.20	0.49	1.27	0.00	unsaturated	25.00	0.00	0.00	400.76	0.99	397.14	550.43	0.93	0.57	0.99	2.00	n.a.	2.00	0.000	-5.994	0.000	0.100	0.000	0.000	0.000
5.600	18.373	294.63	349.17	2.27	106.44	106.44	330.33	0.65	1.40	0.00	unsaturated	25.00	0.00	0.00	349.17	0.99	344.37	480.93	0.92	0.56	0.98	2.00	n.a.	2.00	0.000	-4.899	0.000	0.100	0.000	0.000	0.000
5.700	18.701	294.30	414.11	2.40	108.34	108.34	385.06	0.58	1.32	0.00	unsaturated	25.00	0.00	0.00	414.11	0.98	406.52	562.78	0.92	0.56	0.98	2.00	n.a.	2.00	0.000	-6.187	0.000	0.100	0.000	0.000	0.000
5.800	19.029	293.97	537.14	2.24	110.24	110.24	491.12	0.42	1.15	0.00	unsaturated	25.00	0.00	0.00	537.14	0.98	524.88	718.66	0.92	0.56	0.97	2.00	n.a.	2.00	0.000	-8.579	0.000	0.100	0.000	0.000	0.000
5.900	19.357	293.64	491.71	2.15	112.14	112.14	441.86	0.44	1.19	0.00	unsaturated	25.00	0.00	0.00	491.71	0.97	478.32	657.35	0.92	0.56	0.97	2.00	n.a.	2.00	0.000	-7.649	0.000	0.100	0.000	0.000	0.000
6.000	19.685	293.31	511.54	2.68	114.04	113.49	452.04	0.53	1.24	0.00		25.00	0.00	0.00	511.54	0.97	495.41	679.85	0.92	0.56	0.96	2.00	2.00	2.00	0.000	-7.992	0.000	0.100	0.000	0.000	0.000
6.100	20.013	292.99	530.60	2.25	115.94	114.41	461.22	0.42	1.17	0.00		25.00	0.00	0.00	530.60	0.97	511.64	701.22	0.91	0.57	0.96	2.00	2.00	2.00	0.000	-8.316	0.000	0.100	0.000	0.000	0.000
6.200	20.341	292.66	471.79	2.30	117.84	115.33	403.36	0.49	1.25	0.00		25.00	0.00	0.00	471.79	0.97	452.98	623.97	0.91	0.57	0.96	2.00	2.00	2.00	0.000	-7.136	0.000	0.100	0.000	0.000	0.000
6.300	20.669	292.33	443.19	2.30	119.74	116.25	372.82	0.52	1.30	0.00		25.00	0.00	0.00	443.19	0.96	423.73	585.45	0.91	0.57	0.96	2.00	2.00	2.00	0.000	-6.540	0.000	0.100	0.000	0.000	0.000
6.400	20.997	292.00	428.60	2.27	121.64	117.17	354.86	0.53	1.32	0.00		25.00	0.00	0.00	428.60	0.96	408.08	564.83	0.91	0.58	0.96	2.00	2.00	2.00	0.000	-6.219	0.000	0.100	0.000	0.000	0.000
6.500	21.325	291.67	421.47	1.55	123.54	118.09	343.56	0.37	1.22	0.00		25.00	0.00	0.00	421.47	0.96	399.65	553.73	0.91	0.58	0.95	2.00	2.00	2.00	0.000	-6.046	0.000	0.100	0.000	0.000	0.000
6.600	21.654	291.35	382.12	1.48	125.45	119.01	306.65	0.39	1.27	0.00		25.00	0.00	0.00	382.12	0.96	360.88	502.67	0.91	0.58	0.95	2.00	2.00	2.00	0.000	-5.243	0.000	0.100	0.000	0.000	0.000
6.700	21.982	291.02	359.63	1.91	127.35	119.93	284.23	0.53	1.39	0.00		25.00	0.00	0.00	359.63	0.96	338.30	472.93	0.90	0.59	0.95	2.00	2.00	2.00	0.000	-4.772	0.000	0.100	0.000	0.000	0.000
6.800	22.310	290.69	358.15	1.87	129.25	120.85	278.88	0.52	1.39	0.00		25.00	0.00	0.00	358.15	0.95	335.59	469.37	0.90	0.59	0.95	2.00	2.00	2.00	0.000	-4.715	0.000	0.100	0.000	0.000	0.000
6.900	22.638	290.36	340.69	1.88	131.15	121.77	261.38	0.55	1.43	0.00		25.00	0.00	0.00	340.69	0.95	318.01	446.21	0.90	0.59	0.94	2.00	2.00	2.00	0.000	-4.346	0.000	0.100	0.000	0.000	0.000
7.000	22.966	290.03	339.81	2.55	133.05	122.68	256.96	0.75	1.53	0.00		25.00	0.00	0.00	339.81	0.95	315.98	443.54	0.90	0.59	0.94	2.00	2.00	2.00	0.000	-4.304	0.000	0.100	0.000	0.000	0.000
7.100	23.294	289.71	424.87	2.91	134.95	123.60	316.99	0.69	1.43	0.00		25.00	0.00	0.00	424.87	0.95	393.60	545.76	0.90	0.60	0.94	2.00	2.00	2.00	0.000	-5.921	0.000	0.100	0.000	0.000	0.000
7.200	23.622	289.38	413.62	1.69	136.85	124.52	304.27	0.41	1.29	0.00		25.00	0.00	0.00	413.62	0.95	381.76	530.18	0.89	0.60	0.94	2.00	2.00	2.00	0.000	-5.677	0.000	0.100	0.000	0.000	0.000
7.300	23.950	289.05	309.34	1.97	138.75	125.44	224.18	0.64	1.52	0.00		25.00	0.00	0.00	309.34	0.94	284.48	402.05	0.89	0.60	0.93	2.00	2.00	2.00	0.000	-3.640	0.000	0.100	0.000	0.000	0.000
7.400	24.278	288.72	290.96	1.84	140.65	126.36	207.94	0.63	1.54	0.00		25.00	0.00	0.00	290.96	0.94	266.62	378.53	0.89	0.61	0.93	2.00	2.00	2.00	0.000	-3.263	0.000	0.100	0.000	0.000	0.000

LIQUEFACTION TRIGGERING ANALYSIS
LOS ANGELES WATER WHEEL
LOS ANGELES, CALIFORNIA

Geosyntec consultants

7.500	24.606	288.39	278.71	1.10	142.55	127.28	196.47	0.40	1.43	0.00		25.00	0.00	0.00	278.71	0.94	254.49	362.55	0.89	0.61	0.93	2.00	2.00	2.00	0.000	-3.006	0.000	0.100	0.000	0.000	0.000
7.600	24.934	288.07	264.16	0.66	144.45	128.20	183.70	0.25	1.36	0.00		25.00	0.00	0.00	264.16	0.94	240.36	343.95	0.89	0.61	0.93	2.00	2.00	2.00	0.000	-2.708	0.000	0.100	0.000	0.000	0.000
7.700	25.262	287.74	213.44	0.76	146.35	129.12	146.30	0.36	1.52	0.00		25.00	0.00	0.00	213.44	0.94	193.54	282.29	0.88	0.61	0.93	2.00	2.00	2.00	0.000	-1.722	0.000	0.100	0.000	0.000	0.000
7.800	25.591	287.41	183.38	1.10	148.25	130.04	123.93	0.61	1.70	0.00		25.00	0.00	0.00	183.38	0.93	165.06	244.77	0.88	0.61	0.92	2.00	2.00	2.00	0.003	-1.132	0.000	0.100	0.000	0.000	0.000
7.900	25.919	287.08	190.55	1.26	150.15	130.96	127.17	0.67	1.72	0.00		25.00	0.00	0.00	190.55	0.93	171.57	253.35	0.88	0.62	0.92	2.00	2.00	2.00	0.002	-1.266	0.000	0.100	0.000	0.000	0.000
8.000	26.247	286.75	210.28	1.01	152.06	131.88	138.67	0.48	1.61	0.00		25.00	0.00	0.00	210.28	0.93	188.76	275.99	0.88	0.62	0.92	2.00	2.00	2.00	0.000	-1.622	0.000	0.100	0.000	0.000	0.000
8.100	26.575	286.43	251.15	1.11	153.96	132.80	163.76	0.44	1.53	0.00		25.00	0.00	0.00	251.15	0.93	224.72	323.34	0.88	0.62	0.92	2.00	2.00	2.00	0.000	-2.377	0.000	0.100	0.000	0.000	0.000
8.200	26.903	286.10	294.86	1.08	155.86	133.72	190.08	0.37	1.43	0.00		25.00	0.00	0.00	294.86	0.93	262.97	373.73	0.87	0.62	0.92	2.00	2.00	2.00	0.000	-3.186	0.000	0.100	0.000	0.000	0.000
8.300	27.231	285.77	277.29	1.24	157.76	134.64	176.53	0.45	1.50	0.00		25.00	0.00	0.00	277.29	0.93	246.51	352.05	0.87	0.62	0.91	2.00	2.00	2.00	0.000	-2.838	0.000	0.100	0.000	0.000	0.000
8.400	27.559	285.44	224.97	1.01	159.66	135.56	141.31	0.45	1.58	0.00		25.00	0.00	0.00	224.97	0.93	199.36	289.96	0.87	0.63	0.91	2.00	2.00	2.00	0.000	-1.844	0.000	0.100	0.000	0.000	0.000
8.500	27.887	285.11	228.64	0.51	161.56	136.48	141.94	0.23	1.44	0.00		25.00	0.00	0.00	228.64	0.92	201.99	293.41	0.87	0.63	0.91	2.00	2.00	2.00	0.000	-1.899	0.000	0.100	0.000	0.000	0.000
8.600	28.215	284.78	271.41	0.93	163.46	137.40	166.70	0.34	1.46	0.00		25.00	0.00	0.00	271.41	0.92	239.04	342.20	0.87	0.63	0.91	2.00	2.00	2.00	0.000	-2.679	0.000	0.100	0.000	0.000	0.000
8.700	28.543	284.46	280.10	1.04	165.36	138.32	170.08	0.37	1.47	0.00		25.00	0.00	0.00	280.10	0.92	245.94	351.30	0.86	0.63	0.91	2.00	2.00	2.00	0.000	-2.825	0.000	0.100	0.000	0.000	0.000
8.800	28.871	284.13	271.86	0.97	167.26	139.24	163.16	0.36	1.48	0.00		25.00	0.00	0.00	271.86	0.92	237.99	340.82	0.86	0.63	0.90	2.00	2.00	2.00	0.000	-2.657	0.000	0.100	0.000	0.000	0.000
8.900	29.199	283.80	293.86	0.84	169.16	140.16	174.45	0.29	1.40	0.00		25.00	0.00	0.00	293.86	0.92	256.48	365.17	0.86	0.63	0.90	2.00	2.00	2.00	0.000	-3.048	0.000	0.100	0.000	0.000	0.000
9.000	29.528	283.47	319.70	0.94	171.06	141.08	187.76	0.30	1.38	0.00		25.00	0.00	0.00	319.70	0.92	278.21	393.80	0.86	0.64	0.90	2.00	2.00	2.00	0.000	-3.508	0.000	0.100	0.000	0.000	0.000
9.100	29.856	283.14	276.98	1.70	172.96	142.00	160.74	0.62	1.62	0.00		25.00	0.00	0.00	276.98	0.91	240.33	343.91	0.86	0.64	0.90	2.00	2.00	2.00	0.000	-2.707	0.000	0.100	0.000	0.000	0.000
9.200	30.184	282.82	250.99	1.56	174.86	142.92	143.97	0.62	1.66	0.00		25.00	0.00	0.00	250.99	0.91	217.15	313.38	0.85	0.64	0.90	2.00	2.00	2.00	0.000	-2.218	0.000	0.100	0.000	0.000	0.000
9.300	30.512	282.49	235.26	1.29	176.76	143.84	133.42	0.55	1.65	0.00		25.00	0.00	0.00	235.26	0.91	202.96	294.69	0.85	0.64	0.89	2.00	2.00	2.00	0.000	-1.919	0.000	0.100	0.000	0.000	0.000
9.400	30.840	282.16	228.89	1.24	178.66	144.76	128.39	0.55	1.66	0.00		25.00	0.00	0.00	228.89	0.91	196.91	286.73	0.85	0.64	0.89	2.00	2.00	2.00	0.000	-1.793	0.000	0.100	0.000	0.000	0.000
9.500	31.168	281.83	221.84	1.25	180.57	145.68	123.09	0.57	1.69	0.00		25.00	0.00	0.00	221.84	0.91	190.32	278.04	0.85	0.64	0.89	2.00	2.00	2.00	0.000	-1.655	0.000	0.100	0.000	0.000	0.000
9.600	31.496	281.50	217.87	1.48	182.47	146.60	119.60	0.68	1.75	0.00		25.00	0.00	0.00	217.87	0.91	186.39	272.87	0.84	0.64	0.89	2.00	2.00	2.00	0.000	-1.573	0.000	0.100	0.000	0.000	0.000
9.700	31.824	281.18	402.36	1.10	184.37	147.52	219.42	0.27	1.31	0.00		25.00	0.00	0.00	402.36	0.90	343.29	479.51	0.84	0.64	0.89	2.00	2.00	2.00	0.000	-4.876	0.000	0.100	0.000	0.000	0.000
9.800	32.152	280.85	522.44	2.44	186.27	148.44	282.28	0.47	1.35	0.00		25.00	0.00	0.00	522.44	0.90	444.53	612.85	0.84	0.64	0.88	2.00	2.00	2.00	0.000	-6.965	0.000	0.100	0.000	0.000	0.000
9.900	32.480	280.52	497.15	2.25	188.17	149.36	265.85	0.46	1.37	0.00		25.00	0.00	0.00	497.15	0.90	421.89	583.02	0.84	0.65	0.88	2.00	2.00	2.00	0.000	-6.503	0.000	0.100	0.000	0.000	0.000
10.000	32.808	280.19	435.96	2.25	190.07	150.28	230.66	0.52	1.45	0.00		25.00	0.00	0.00	435.96	0.90	368.98	513.35	0.84	0.65	0.88	2.00	2.00	2.00	0.000	-5.412	0.000	0.100	0.000	0.000	0.000
10.100	33.136	279.86	395.50	2.57	191.97	151.20	207.08	0.65	1.55	0.00		25.00	0.00	0.00	395.50	0.90	333.86	467.08	0.83	0.65	0.88	2.00	2.00	2.00	0.000	-4.679	0.000	0.100	0.000	0.000	0.000
10.200	33.465	279.54	369.40	1.52	193.87	152.11	191.45	0.41	1.45	0.00		25.00	0.00	0.00	369.40	0.90	311.02	437.00	0.83	0.65	0.88	2.00	2.00	2.00	0.000	-4.200	0.000	0.100	0.000	0.000	0.000
10.300	33.793	279.21	295.95	1.25	195.77	153.03	151.68	0.42	1.54	0.00		25.00	0.00	0.00	295.95	0.90	248.53	354.71	0.83	0.65	0.88	2.00	2.00	2.00	0.000	-2.880	0.000	0.100	0.000	0.000	0.000
10.400	34.121	278.88	171.17	0.81	197.67	153.95	86.46	0.48	1.78	0.00		25.00	0.00	0.00	171.17	0.87	138.36	209.61	0.83	0.65	0.88	1.85	2.00	2.00	0.016	-0.594	0.000	0.100	0.000	0.000	0.000
10.500	34.449	278.55	99.15	0.31	199.57	154.87	49.18	0.32	1.92	0.00		25.00	0.00	0.00	99.15	0.82	72.98	123.50	0.83	0.65	0.95	0.19	0.22	0.34	0.179	0.566	0.179	0.100	0.018	0.026	0.003
10.600	34.777	278.22	69.67	0.14	201.47	155.79	33.93	0.20	2.01	0.00		25.00	0.00	0.00	69.67	0.80	48.74	91.58	0.82	0.65	0.96	0.13	0.16	0.24	0.378	0.855	0.378	0.100	0.038	0.035	0.004
10.700	35.105	277.90	56.78	0.17	203.37	156.71	27.20	0.31	2.15	0.00		25.00	0.00	0.00	56.78	0.79	38.61	78.24	0.82	0.65	0.96	0.11	0.13	0.21	0.515	0.924	0.515	0.100	0.051	0.041	0.004
10.800	35.433	277.57	50.39	0.38	205.27	157.63	23.79	0.79	2.37	0.00		25.00	0.00	0.00	50.39	0.78	33.67	71.73	0.82	0.65	0.96	0.10	0.12	0.19	0.601	0.940	0.601	0.100	0.060	0.044	0.004
10.900	35.761	277.24	47.18	0.50	207.17	158.55	22.00	1.11	2.48	0.00		25.00	0.00	0.00	47.18	0.77	31.14	68.41	0.82	0.65	0.96	0.10	0.12	0.18	0.650	0.943	0.650	0.100	0.065	0.046	0.005
11.000	36.089	276.91	41.21	0.20	209.08	159.47	18.91	0.50	2.38	0.00		25.00	0.00	0.00	41.21	0.76	26.71	62.56	0.82	0.65	0.96	0.09	0.11	0.17	0.749	0.943	0.749	0.100	0.075	0.050	0.005
11.100	36.417	276.58	26.35	0.04	210.98	160.39	11.61	0.18	2.45	0.00		25.00	0.00	0.00	26.35	0.74	16.42	49.01	0.81	0.65	0.97	0.08	0.09	0.14	1.000	0.943	1.000	0.100	0.100	0.062	0.006
11.200	36.745	276.25	17.69	0.03	212.88	161.31	7.39	0.19	2.65	0.00	clay	25.00	0.00	0.00	17.69	0.88	n.a.	n.a.	0.81	0.65	0.86	n.a.	n.a.	2.00	0.000	0.000	0.000	0.100	0.000	0.000	0.000
11.300	37.073	275.93	15.94	0.02	214.78	162.23	6.50	0.17	2.70	0.00	clay	25.00	0.00	0.00	15.94	0.88	n.a.	n.a.	0.81	0.65	0.86	n.a.	n.a.	2.00	0.000	0.000	0.000	0.100	0.000	0.000	0.000
11.400	37.402	275.60	14.24	0.02	216.68	163.15	5.67	0.16	2.75	0.00	clay	25.00	0.00	0.00	14.24	0.88	n.a.	n.a.	0.81	0.66	0.86	n.a.	n.a.	2.00	0.000	0.000	0.000	0.100	0.000	0.000	0.000
11.500	37.730	275.27	13.05	0.02	218.58	164.07	5.08	0.17	2.80	0.00	clay	25.00	0.00	0.00	13.05	0.88	n.a.	n.a.	0.81	0.66	0.85	n.a.	n.a.	2.00	0.000	0.000	0.000	0.100	0.000	0.000	0.000
11.600	38.058	274.94	11.98	0.02	220.48	164.99	4.55	0.19	2.86	0.00	clay	25.00	0.00	0.00	11.98	0.88	n.a.	n.a.	0.80	0.66	0.85	n.a.	n.a.	2.00	0.000	0.000	0.000	0.100	0.000	0.000	0.000
11.700	38.386	274.61	11.57	0.02	222.38	165.91	4.34	0.20	2.88	0.00	clay	25.00	0.00	0.00	11.57	0.88	n.a.	n.a.	0.80	0.66	0.85	n.a.	n.a.	2.00	0.000	0.000	0.000	0.100	0.000	0.000	0.000
11.800	38.714	274.29	11.81	0.02	224.28	166.83	4.42	0.20	2.87	0.00	clay	25.00	0.00	0.00	11.81	0.88	n.a.	n.a.	0.80	0.66	0.85	n.a.	n.a.	2.00	0.000	0.000	0.000	0.100	0.000	0.000	0.000
11.900	39.042	273.96	11.54	0.02	226.18	167.75	4.27	0.20	2.89	0.00	clay	25.00	0.00	0.00	11.54	0.87	n.a.	n.a.	0.80	0.66	0.85	n.a.	n.a.	2.00	0.000	0.000	0.000	0.100	0.000	0.000	0.000
12.000	39.370	273.63	12.39	0.09	228.08	168.67	4.63	0.90	3.04	0.00	clay	25.00	0.00	0.00	12.39	0.87	n.a.	n.a.	0.79	0.66	0.85	n.a.	n.a.	2.00	0.000	0.000	0.000	0.100	0.000	0.000	0.000
12.100	39.698	273.30	45.72	0.41	229.98	169.59	19.77	0.95	2.48	0.00		25.00	0.00	0.00	45.72	0.74	28.79	65.31	0.79	0.66	0.96	0.09	0.11	0.17	0.701	0.943	0.701	0.100	0.070	0.048	0.005
12.200	40.026	272.97	222.32	0.94	231.88	170.51	99.72	0.43	1.70	0.00		25.00	0.00	0.00	222.32	0.87	180.43	265.02	0.79	0.66	0.84	2.00	2.00	2.00	0.001	-1.449	0.000	0.100	0.000	0.000	0.000
12.300	40.354	272.65	367.14	1.18	233.78	171.43	164.68	0.32	1.45	0.00		25.00	0.00	0.00	367.14	0.87	297.64	419.39	0.79	0.66	0.84	2.00	2.00	2.00	0.000	-3.918	0.000	0.100	0.000	0.000	0.000
12.400	40.682	272.32	423.18	1.23	235.69	172.35	189.19	0.29	1.38	0.00		25.00	0.00	0.00	423.18	0.87	342.70	478.73	0.79	0.66	0.84	2.00	2.00	2.00	0.000	-4.864	0.000	0.100	0.000	0.000	0.000
12.500	41.010	271.99	442.14	1.37	237.59	173.27	196.90	0.31	1.38	0.00		25.00	0.00	0.00	442.14	0.87	357.67	498.45	0.78	0.66	0.84	2.00	2.00	2.00	0.000	-5.176	0.000	0.100	0.000	0.000	0.000
12.600	41.339	271.66	422.83	1.59	239.49	174.19	187.48	0.38	1.44	0.00		25.00	0.00	0.00	422.83	0.87	341.68	477.39	0.78	0.66	0.84	2.00	2.00	2.00	0.000	-4.843	0.000	0.100	0.000	0.000	0.000
12.700	41.667	271.33	438.75	1.74	241.39	175.11	193.78	0.40	1.44	0.00		25.00	0.00	0.00	438.75	0.86	354.17	493.83	0.78	0.66	0.83	2.00	2.00	2.00	0.000	-5.103	0.000	0.100	0.000	0.000	0.000
12.800	41.995	271.01	408.92	1.75	243.29	176.03	179.80	0.43	1.49	0.00		25.00	0.00	0.00	408.92	0.86	329.74	461.66	0.78	0.66	0.83	2.00	2.00	2.00	0.000	-4.593	0.000	0.100	0.000	0.000	0.000
12.900	42.323	270.68	199.67	2.79	245.19	176.95	86.89	1.42	2.06	0.00		25.00	0.00	0.00	199.67	0.85	158.07	235.57	0.78	0.66	0.83	2.00	2.00	2.00	0.005	-0.990	0.000	0.100	0.000	0.000	0.000
13.000	42.651	270.35	72.77	1.97	247.09	177.87	30.85	2.80	2.59	0.00	clay	25.00	0.00	0.00	72.77	0.86	n.a.	n.a.	0.77	0.66	0.83	n.a.	n.a.	2.00	0.000	0.000	0.000	0.100	0.000	0.000	0.000
13.100	42.979	270.02	51.24	1.37	248.99	178.79	21.31	2.81	2.71	0.00	clay	25.00	0.00	0.00	51.24	0.86	n.a.	n.a.	0.77	0.66	0.83	n.a.	n.a.	2.00	0.000	0.000	0.000	0.100	0.000	0.000	0.000
13.200	43.307	269.69	78.40	1.94	250.89	179.71	33.05	2.55	2.54	0.00	clay	25.00	0.00	0.00	78.40	0.86	n.a.	n.a.	0.77	0.66	0.83	n.a.	n.a.	2.00	0.000	0.000	0.000	0.100	0.000	0.000	0.000
13.300	43.635	269.36	116.08	2.42	252.79	180.63	49.24	2.13	2.36	0.00		25.00	0.00	0.00	116.08	0.78	81.00	134.07	0.77	0.66	0.92	0.21	0.25	0.38	0.139	0.445	0.139	0.100	0.014	0.024	0.002
13.400	43.963	269.04	121.80	2.25	254.69	181.54	51.51	1.89	2.31	0.00		25.00	0.00	0.00	121.80	0.78	85.61	140.14	0.77	0.66	0.91	0.23	0.27	0.41	0.119	0.372	0.119	0.100	0.012	0.022	0.002
13.500	44.291	268.71	129.12	2.60	256.59	182.46	54.45	2.05	2.31	0.00		25.00	0.00	0.00	129.12	0.79	91.64	148.08	0.76	0.66	0.91	0.26	0.30	0.46	0.098	0.272	0.098	0.100	0.010	0.021	0.002
13.600	44.619	268.38	152.11	2.94	258.49	183.38	64.08	1.96	2.25	0.00		25.00	0.00	0.00	152.11	0.80	111.60	174.37	0.76	0.66	0.88	0.46	0.51	0.78	0.048	-0.081	0.048	0.100	0.005	0.010	0.001
13.700	44.948	268.05	225.97	2.74	260.39	184.30	95.35	1.23	1.98	0.00		25.00	0.00	0.00	225.97	0.85	180.51	265.13	0.76	0.66	0.82	2.00	2.00	2.00	0.001	-1.451	0.000	0.100	0.000	0.000	0.000
13.800	45.276	267.72	426.76	1.21	262.29	185.22	180.34	0.29	1.39	0.00		25.00	0.00	0.00	426.76	0.85	340.56	475.91	0.76	0.66	0.82	2.00	2.00	2.00	0.000	-4.819	0.000	0.100	0.000	0.000	0.000
13.900	45.604	267.40	604.70	1.66	264.20	186.14	255.00	0.28	1.25	0.00		25.00	0.00	0.00	604.70	0.85	482.07	662.28	0.76	0.65	0.82	2.00	2.00	2.00	0.000	-7.724	0.000	0.100	0.000	0.000	0.000
14.000	45.932	267.07	609.06	2.08	266.10	187.06	255.86	0.34	1.30	0.00		25.00	0.00	0.00	609.06	0.85	485.05	666.20	0.75	0.65	0.81	2.00	2.00	2.00	0.000	-7.784	0.000	0.100	0.000	0.000	0.000
14.100	46.260	266.74	618.63	2.42	268.00	187.98	258.89	0.39	1.33	0.00		25.00	0.00	0.00	618.63	0.85	492.17	675.59	0.75	0.65	0.81	2.00	2.00	2.00	0.000	-7.927	0.000	0.100	0.000	0.000	0.000
14.200	46.588	266.41	582.72	2.40	269.90	188.90	242.86	0.41	1.37	0.00		25.00	0.00	0.00	582.72	0.85	463.13	637.34	0.75	0.65	0.81	2.00	2.00	2.00	0.000	-7.342	0.000	0.100	0.000	0.000	0.000
14.300	46.916	266.08	574.61	1.66	271.80	189.82	238.55	0.29	1.29	0.00		25.00	0.00	0.00	574.61	0.85	456.23	628.25	0.75	0.65	0.81	2.00	2.00	2.00	0.000	-7.202	0.000	0.100	0.000	0.000	0.000
14.400	47.244	265.76	580.56	1.34	273.70	190.74	240.11	0.23	1.24	0.00		25.00	0.00	0.00	580.56	0.85	460.49	633.87	0.75	0.65	0.81	2.00	2.00	2.00	0.000	-7.289	0.000	0.100	0.000	0.000	0.000
14.500	47.572	265.43	601.61	1.37	275.60	191.66	247.91	0.23	1.22	0.00		25.00	0.00	0.00	601.61	0.84	476.72	655.23	0.74	0.65	0.81	2.00	2.00	2.00	0.000	-7.616	0.000	0.100	0.000	0.000	0.000
14.600	47.900	265.10	566.75	1.63	277.50	192.58	232.59	0.29	1.30	0.00		25.00	0.00	0.00	566.75	0.84	448.64	618.26	0.74	0.65	0.81	2.00	2.00	2.00	0.000	-7.048	0.000	0.100	0.000	0.000	0.000
14.700	48.228	264.77	533.72	2.38	279.40	193.50	218.15	0.45	1.43	0.00		25.00	0.00	0.00	533.72	0.84	422.08	583.28	0.74	0.65	0.80	2.00	2.00	2.00	0.000	-6.507	0.000	0.100	0.000	0.000	0.000
14.800	48.556	264.44	537.12	2.21	281.30	194.42	218.72	0.41	1.41	0.00		25.00	0.00	0.00	537.12	0.84	424.35	586.27	0.74	0.65	0.80	2.00	2.00	2.00	0.000	-6.553	0.000	0.100	0.000	0.000	0.000
14.900	48.885	264.12	508.33	2.14	283.20	195.34	206.16	0.42	1.43	0.00		25.00	0.00	0.00	508.33	0.84	401.22	555.80	0.73	0.65	0.80	2.00	2.00	2.00	0.000	-6.078	0.000	0.100	0.000	0.000	0.000
15.000	49.213	263.79	501.77	2.61	285.10	196.26	202.72	0.52	1.49	0.00		25.00	0.00	0.00	501.77	0.84	395.65	548.46	0.73	0.65	0.80	2.00	2.00	2.00	0.000	-5.964	0.000	0.100	0.000	0.000	0.000
15.100	49.541	263.46	528.96	2.65	287.00	197.18	212.97	0.50	1.47	0.00		25.00	0.00	0.00	528.96	0.84	416.68	576.17	0.73	0.65	0.80	2.00	2.00	2.00	0.000	-6.396	0.000	0.100	0.000	0.000	0.000
15.200	49.869	263.13	515.04	1.62	288.90	198.10	206.57	0.32	1.36	0.00		25.00	0.00	0.00	515.04	0.84	405.32	561.21	0.73	0.65	0.80	2.00	2.00	2.00	0.000	-6.163	0.000	0.100	0.000	0.000	0.000
15.300	50.197	262.80	430.87	1.27	290.81	199.02	171.98	0.30	1.42	0.00		25.00	0.00	0.00	430.87	0.84	338.75	473.53	0.73	0.65	0.80	2.00	2.00	2.00	0.000	-4.781	0.000	0.100	0.000	0.000	0.000
15.400	50.525	262.48	344.67	0.81	292.71	199.94	136.84	0.24	1.46	0.00		25.00	0.00	0.00	344.67	0.84	270.73	383.94	0.72	0.65	0.79	2.00	2.00	2.00	0.000	-3.350	0.000	0.100	0.000	0.000	0.000
15.500	50.853	262.15	309.76	0.95	294.61	200.86	122.41	0.31	1.55	0.00		25.00	0.00	0.00	309.76	0.83	243.07	347.52	0.72	0.65	0.79	2.00	2.00	2.00	0.000	-2.765	0.000	0.100	0.000	0.000	0.000
15.600	51.181	261.82	334.34	1.19	296.51	201.78	131.73	0.36	1.56	0.00		25.00	0.00	0.00	334.34	0.83	262.11	372.59	0.72	0.65	0.79	2.00	2.00	2.00	0.000	-3.167	0.000	0.100	0.000	0.000	0.000
15.700	51.509	261.49	354.04	1.11	298.41	202.70	139.04	0.32	1.51	0.00		25.00	0.00	0.00	354.04	0.83	277.28	392.58	0.72	0.65	0.79	2.00	2.00	2.00	0.000	-3.488	0.000	0.100	0.000	0.000	0.000
15.800	51.837	261.16	351.17	0.88	300.31	203.62	137.41	0.25	1.47	0.00		25.00	0.00	0.00	351.17	0.83	274.78	389.28

LIQUEFACTION TRIGGERING ANALYSIS
LOS ANGELES WATER WHEEL
LOS ANGELES, CALIFORNIA

Geosyntec consultants

17.000	55.774	257.23	96.26	2.34	323.12	214.65	35.21	2.51	2.51	0.00	clay	25.00	0.00	0.00	96.26	0.82	n.a.	n.a.	0.69	0.64	0.77	n.a.	n.a.	2.00	0.000	0.000	0.000	0.100	0.000	0.000	0.000
17.100	56.102	256.90	77.85	1.67	325.02	215.57	28.14	2.24	2.56	0.00	clay	25.00	0.00	0.00	77.85	0.82	n.a.	n.a.	0.69	0.64	0.77	n.a.	n.a.	2.00	0.000	0.000	0.000	0.100	0.000	0.000	0.000
17.200	56.430	256.57	65.13	1.78	326.92	216.49	23.25	2.87	2.69	0.00	clay	25.00	0.00	0.00	65.13	0.82	n.a.	n.a.	0.69	0.64	0.77	n.a.	n.a.	2.00	0.000	0.000	0.000	0.100	0.000	0.000	0.000
17.300	56.759	256.24	71.19	1.86	328.82	217.41	25.44	2.74	2.65	0.00	clay	25.00	0.00	0.00	71.19	0.82	n.a.	n.a.	0.69	0.64	0.77	n.a.	n.a.	2.00	0.000	0.000	0.000	0.100	0.000	0.000	0.000
17.400	57.087	255.91	158.35	2.61	330.72	218.33	57.87	1.68	2.24	0.00		25.00	0.00	0.00	158.35	0.75	110.15	172.46	0.69	0.64	0.85	0.43	0.47	0.73	0.051	-0.055	0.051	0.100	0.005	0.011	0.001
17.500	57.415	255.59	348.19	2.13	332.62	219.25	128.27	0.62	1.70	0.00		25.00	0.00	0.00	348.19	0.82	268.21	380.63	0.68	0.63	0.77	2.00	1.94	2.00	0.000	-3.296	0.000	0.100	0.000	0.000	0.000
17.600	57.743	255.26	396.50	3.52	334.52	220.17	145.73	0.90	1.76	0.00		25.00	0.00	0.00	396.50	0.81	305.16	429.29	0.68	0.63	0.77	2.00	1.94	2.00	0.000	-4.076	0.000	0.100	0.000	0.000	0.000
17.700	58.071	254.93	365.03	3.82	336.42	221.09	133.61	1.06	1.83	0.00		25.00	0.00	0.00	365.03	0.81	280.69	397.06	0.68	0.63	0.76	2.00	1.94	2.00	0.000	-3.560	0.000	0.100	0.000	0.000	0.000
17.800	58.399	254.60	324.50	2.94	338.32	222.01	118.24	0.91	1.83	0.00		25.00	0.00	0.00	324.50	0.81	249.30	355.73	0.68	0.63	0.76	2.00	1.93	2.00	0.000	-2.897	0.000	0.100	0.000	0.000	0.000
17.900	58.727	254.27	265.37	2.54	340.22	222.93	96.14	0.97	1.92	0.00		25.00	0.00	0.00	265.37	0.81	203.69	295.66	0.68	0.63	0.76	2.00	1.93	2.00	0.000	-1.935	0.000	0.100	0.000	0.000	0.000
18.000	59.055	253.94	198.91	3.60	342.12	223.85	71.50	1.84	2.19	0.00		25.00	0.00	0.00	198.91	0.79	146.62	220.49	0.68	0.63	0.76	2.00	1.93	2.00	0.010	-0.759	0.000	0.100	0.000	0.000	0.000
18.100	59.383	253.62	124.15	4.41	344.02	224.77	44.01	3.66	2.55	0.00	clay	25.00	0.00	0.00	124.15	0.81	n.a.	n.a.	0.67	0.63	0.76	n.a.	n.a.	2.00	0.000	0.000	0.000	0.100	0.000	0.000	0.000
18.200	59.711	253.29	171.41	3.47	345.93	225.69	61.03	2.07	2.28	0.00		25.00	0.00	0.00	171.41	0.76	120.42	185.99	0.67	0.63	0.82	0.65	0.67	1.07	0.034	-0.247	0.031	0.100	0.003	0.006	0.001
18.300	60.039	252.96	292.99	3.33	347.83	226.61	104.84	1.15	1.93	0.00		25.00	0.00	0.00	292.99	0.81	224.11	322.54	0.67	0.63	0.76	2.00	1.92	2.00	0.000	-2.364	0.000	0.100	0.000	0.000	0.000
18.400	60.367	252.63	266.43	3.10	349.73	227.53	94.91	1.18	1.97	0.00		25.00	0.00	0.00	266.43	0.81	203.62	295.56	0.67	0.63	0.76	2.00	1.92	2.00	0.000	-1.933	0.000	0.100	0.000	0.000	0.000
18.500	60.696	252.30	220.15	2.52	351.63	228.45	77.94	1.16	2.04	0.00		25.00	0.00	0.00	220.15	0.80	166.75	247.00	0.67	0.63	0.75	2.00	1.91	2.00	0.003	-1.167	0.000	0.100	0.000	0.000	0.000
18.600	61.024	251.98	194.24	2.71	353.53	229.37	68.39	1.42	2.14	0.00		25.00	0.00	0.00	194.24	0.77	140.97	213.04	0.66	0.63	0.75	2.00	1.91	2.00	0.014	-0.646	0.000	0.100	0.000	0.000	0.000
18.700	61.352	251.65	184.09	3.11	355.43	230.29	64.53	1.72	2.21	0.00		25.00	0.00	0.00	184.09	0.76	131.18	200.16	0.66	0.62	0.78	1.15	1.14	1.82	0.022	-0.454	0.004	0.100	0.000	0.001	0.000
18.800	61.680	251.32	196.67	3.55	357.33	231.21	68.80	1.84	2.21	0.00		25.00	0.00	0.00	196.67	0.77	142.92	215.62	0.66	0.62	0.75	2.00	1.90	2.00	0.012	-0.685	0.000	0.100	0.000	0.000	0.000
18.900	62.008	250.99	260.04	3.02	359.23	232.13	91.07	1.18	1.99	0.00		25.00	0.00	0.00	260.04	0.80	197.88	288.00	0.66	0.62	0.75	2.00	1.90	2.00	0.000	-1.813	0.000	0.100	0.000	0.000	0.000
19.000	62.336	250.66	368.70	2.93	361.13	233.05	129.22	0.80	1.76	0.00		25.00	0.00	0.00	368.70	0.80	280.33	396.58	0.66	0.62	0.75	2.00	1.90	2.00	0.000	-3.552	0.000	0.100	0.000	0.000	0.000
19.100	62.664	250.34	418.52	2.59	363.03	233.97	146.38	0.62	1.65	0.00		25.00	0.00	0.00	418.52	0.80	317.94	446.12	0.66	0.62	0.75	2.00	1.89	2.00	0.000	-4.345	0.000	0.100	0.000	0.000	0.000
19.200	62.992	250.01	417.64	3.14	364.93	234.89	145.59	0.76	1.71	0.00		25.00	0.00	0.00	417.64	0.80	317.00	444.88	0.65	0.62	0.75	2.00	1.89	2.00	0.000	-4.325	0.000	0.100	0.000	0.000	0.000
19.300	63.320	249.68	323.83	4.97	366.83	235.81	112.24	1.55	2.00	0.00		25.00	0.00	0.00	323.83	0.80	245.59	350.83	0.65	0.62	0.75	2.00	1.89	2.00	0.000	-2.818	0.000	0.100	0.000	0.000	0.000
19.400	63.648	249.35	258.76	3.70	368.73	236.73	89.14	1.45	2.05	0.00		25.00	0.00	0.00	258.76	0.80	196.07	285.62	0.65	0.62	0.74	2.00	1.89	2.00	0.000	-1.775	0.000	0.100	0.000	0.000	0.000
19.500	63.976	249.02	306.62	2.17	370.63	237.65	105.52	0.72	1.80	0.00		25.00	0.00	0.00	306.62	0.80	232.15	333.13	0.65	0.62	0.74	2.00	1.88	2.00	0.000	-2.534	0.000	0.100	0.000	0.000	0.000
19.600	64.304	248.70	328.62	2.08	372.53	238.57	112.82	0.64	1.75	0.00		25.00	0.00	0.00	328.62	0.80	248.60	354.80	0.65	0.62	0.74	2.00	1.88	2.00	0.000	-2.882	0.000	0.100	0.000	0.000	0.000
19.700	64.633	248.37	327.96	3.57	374.44	239.49	112.23	1.10	1.90	0.00		25.00	0.00	0.00	327.96	0.80	247.89	353.86	0.65	0.62	0.74	2.00	1.88	2.00	0.000	-2.867	0.000	0.100	0.000	0.000	0.000
19.800	64.961	248.04	341.00	4.24	376.34	240.40	116.37	1.26	1.93	0.00		25.00	0.00	0.00	341.00	0.80	257.53	366.56	0.64	0.62	0.74	2.00	1.87	2.00	0.000	-3.071	0.000	0.100	0.000	0.000	0.000
19.900	65.289	247.71	361.86	2.45	378.24	241.32	123.17	0.68	1.74	0.00		25.00	0.00	0.00	361.86	0.79	273.06	387.02	0.64	0.61	0.74	2.00	1.87	2.00	0.000	-3.399	0.000	0.100	0.000	0.000	0.000
20.000	65.617	247.38	462.53	1.53	380.14	242.24	157.30	0.33	1.47	0.00		25.00	0.00	0.00	462.53	0.79	348.73	486.68	0.64	0.61	0.74	2.00	1.87	2.00	0.000	-4.990	0.000	0.100	0.000	0.000	0.000
20.100	65.945	247.06	445.19	1.65	382.04	243.16	150.88	0.37	1.51	0.00		25.00	0.00	0.00	445.19	0.79	335.39	469.10	0.64	0.61	0.74	2.00	1.87	2.00	0.000	-4.711	0.000	0.100	0.000	0.000	0.000
20.200	66.273	246.73	247.22	3.19	383.94	244.08	82.95	1.31	2.05	0.00		25.00	0.00	0.00	247.22	0.79	186.10	272.48	0.64	0.61	0.73	2.00	1.86	2.00	0.000	-1.567	0.000	0.100	0.000	0.000	0.000
20.300	66.601	246.40	111.97	2.42	385.84	245.00	36.74	2.24	2.47	0.00		25.00	0.00	0.00	111.97	0.66	67.93	116.85	0.64	0.61	0.89	0.17	0.20	0.32	0.210	0.637	0.210	0.100	0.021	0.027	0.003
20.400	66.929	246.07	100.22	1.48	387.74	245.92	32.64	1.54	2.41	0.00		25.00	0.00	0.00	100.22	0.65	59.17	105.32	0.63	0.61	0.90	0.15	0.17	0.28	0.274	0.748	0.274	0.100	0.027	0.030	0.003
20.500	67.257	245.74	116.57	1.88	389.64	246.84	38.05	1.66	2.38	0.00		25.00	0.00	0.00	116.57	0.67	71.16	121.10	0.63	0.61	0.89	0.18	0.20	0.34	0.190	0.592	0.190	0.100	0.019	0.026	0.003
20.600	67.585	245.41	85.24	2.10	391.54	247.76	27.38	2.58	2.61	0.00	clay	25.00	0.00	0.00	85.24	0.79	n.a.	n.a.	0.63	0.61	0.73	n.a.	n.a.	2.00	0.000	0.000	0.000	0.100	0.000	0.000	0.000
20.700	67.913	245.09	65.11	1.60	393.44	248.68	20.54	2.61	2.71	0.00	clay	25.00	0.00	0.00	65.11	0.79	n.a.	n.a.	0.63	0.61	0.73	n.a.	n.a.	2.00	0.000	0.000	0.000	0.100	0.000	0.000	0.000
20.800	68.241	244.76	89.14	1.49	395.34	249.60	28.51	1.75	2.49	0.00		25.00	0.00	0.00	89.14	0.63	50.96	94.51	0.63	0.61	0.91	0.13	0.15	0.25	0.353	0.835	0.353	0.100	0.035	0.034	0.003
20.900	68.570	244.43	73.24	1.56	397.24	250.52	23.11	2.25	2.63	0.00	clay	25.00	0.00	0.00	73.24	0.79	n.a.	n.a.	0.63	0.61	0.73	n.a.	n.a.	2.00	0.000	0.000	0.000	0.100	0.000	0.000	0.000
21.000	68.898	244.10	128.61	1.31	399.14	251.44	41.45	1.05	2.23	0.00		25.00	0.00	0.00	128.61	0.67	79.80	132.49	0.62	0.61	0.87	0.21	0.23	0.38	0.144	0.464	0.144	0.100	0.014	0.024	0.002
21.100	69.226	243.77	219.01	1.66	401.05	252.36	71.28	0.77	1.96	0.00		25.00	0.00	0.00	219.01	0.77	160.57	238.87	0.62	0.60	0.72	2.00	1.84	2.00	0.004	-1.041	0.000	0.100	0.000	0.000	0.000
21.200	69.554	243.45	148.94	3.49	402.95	253.28	47.90	2.41	2.40	0.00		25.00	0.00	0.00	148.94	0.69	95.95	153.76	0.62	0.60	0.85	0.29	0.31	0.52	0.084	0.199	0.084	0.100	0.008	0.020	0.002
21.300	69.882	243.12	94.10	4.45	404.85	254.20	29.68	4.94	2.77	0.00	clay	25.00	0.00	0.00	94.10	0.78	n.a.	n.a.	0.62	0.60	0.72	n.a.	n.a.	2.00	0.000	0.000	0.000	0.100	0.000	0.000	0.000
21.400	70.210	242.79	126.29	3.66	406.75	255.12	40.17	2.99	2.52	0.00	clay	25.00	0.00	0.00	126.29	0.78	n.a.	n.a.	0.62	0.60	0.72	n.a.	n.a.	2.00	0.000	0.000	0.000	0.100	0.000	0.000	0.000
21.500	70.538	242.46	65.86	2.30	408.65	256.04	20.25	3.72	2.81	0.00	clay	25.00	0.00	0.00	65.86	0.78	n.a.	n.a.	0.62	0.60	0.72	n.a.	n.a.	2.00	0.000	0.000	0.000	0.100	0.000	0.000	0.000
21.600	70.866	242.13	31.50	0.80	410.55	256.96	8.96	2.92	3.03	0.00	clay	25.00	0.00	0.00	31.50	0.78	n.a.	n.a.	0.62	0.60	0.72	n.a.	n.a.	2.00	0.000	0.000	0.000	0.100	0.000	0.000	0.000
21.700	71.194	241.81	30.62	0.38	412.45	257.88	8.64	1.42	2.88	0.00	clay	25.00	0.00	0.00	30.62	0.78	n.a.	n.a.	0.61	0.60	0.72	n.a.	n.a.	2.00	0.000	0.000	0.000	0.100	0.000	0.000	0.000
21.800	71.522	241.48	30.92	0.37	414.35	258.80	8.71	1.38	2.87	0.00	clay	25.00	0.00	0.00	30.92	0.78	n.a.	n.a.	0.61	0.60	0.72	n.a.	n.a.	2.00	0.000	0.000	0.000	0.100	0.000	0.000	0.000
21.900	71.850	241.15	30.17	0.42	416.25	259.72	8.43	1.62	2.92	0.00	clay	25.00	0.00	0.00	30.17	0.78	n.a.	n.a.	0.61	0.60	0.72	n.a.	n.a.	2.00	0.000	0.000	0.000	0.100	0.000	0.000	0.000
22.000	72.178	240.82	27.88	0.39	418.15	260.64	7.66	1.65	2.96	0.00	clay	25.00	0.00	0.00	27.88	0.78	n.a.	n.a.	0.61	0.60	0.72	n.a.	n.a.	2.00	0.000	0.000	0.000	0.100	0.000	0.000	0.000
22.100	72.507	240.49	34.16	0.60	420.05	261.56	9.65	2.01	2.91	0.00	clay	25.00	0.00	0.00	34.16	0.78	n.a.	n.a.	0.61	0.60	0.71	n.a.	n.a.	2.00	0.000	0.000	0.000	0.100	0.000	0.000	0.000
22.200	72.835	240.17	90.88	1.07	421.95	262.48	27.82	1.24	2.41	0.00		25.00	0.00	0.00	90.88	0.61	50.84	94.34	0.61	0.60	0.90	0.13	0.15	0.26	0.354	0.836	0.354	0.100	0.035	0.034	0.003
22.300	73.163	239.84	76.60	1.03	423.85	263.40	23.16	1.43	2.51	0.00	clay	25.00	0.00	0.00	76.60	0.78	n.a.	n.a.	0.60	0.59	0.71	n.a.	n.a.	2.00	0.000	0.000	0.000	0.100	0.000	0.000	0.000
22.400	73.491	239.51	31.64	0.51	425.75	264.32	8.75	1.86	2.93	0.00	clay	25.00	0.00	0.00	31.64	0.78	n.a.	n.a.	0.60	0.59	0.71	n.a.	n.a.	2.00	0.000	0.000	0.000	0.100	0.000	0.000	0.000
22.500	73.819	239.18	36.79	0.59	427.65	265.24	10.36	1.80	2.86	0.00	clay	25.00	0.00	0.00	36.79	0.78	n.a.	n.a.	0.60	0.59	0.71	n.a.	n.a.	2.00	0.000	0.000	0.000	0.100	0.000	0.000	0.000
22.600	74.147	238.85	37.25	0.80	429.56	266.16	10.47	2.41	2.93	0.00	clay	25.00	0.00	0.00	37.25	0.77	n.a.	n.a.	0.60	0.59	0.71	n.a.	n.a.	2.00	0.000	0.000	0.000	0.100	0.000	0.000	0.000
22.700	74.475	238.52	32.41	0.52	431.46	267.08	8.90	1.85	2.93	0.00	clay	25.00	0.00	0.00	32.41	0.77	n.a.	n.a.	0.60	0.59	0.71	n.a.	n.a.	2.00	0.000	0.000	0.000	0.100	0.000	0.000	0.000
22.800	74.803	238.20	28.19	0.35	433.36	268.00	7.54	1.48	2.94	0.00	clay	25.00	0.00	0.00	28.19	0.77	n.a.	n.a.	0.60	0.59	0.71	n.a.	n.a.	2.00	0.000	0.000	0.000	0.100	0.000	0.000	0.000
22.900	75.131	237.87	28.56	0.43	435.26	268.92	7.63	1.76	2.97	0.00	clay	25.00	0.00	0.00	28.56	0.77	n.a.	n.a.	0.60	0.59	0.71	n.a.	n.a.	2.00	0.000	0.000	0.000	0.100	0.000	0.000	0.000
23.000	75.459	237.54	32.31	0.46	437.16	269.83	8.77	1.66	2.91	0.00	clay	25.00	0.00	0.00	32.31	0.77	n.a.	n.a.	0.59	0.59	0.70	n.a.	n.a.	2.00	0.000	0.000	0.000	0.100	0.000	0.000	0.000
23.100	75.787	237.21	29.97	0.57	439.06	270.75	8.01	2.23	3.01	0.00	clay	25.00	0.00	0.00	29.97	0.77	n.a.	n.a.	0.59	0.59	0.70	n.a.	n.a.	2.00	0.000	0.000	0.000	0.100	0.000	0.000	0.000
23.200	76.115	236.88	158.46	1.37	440.96	271.67	48.04	0.89	2.14	0.00		25.00	0.00	0.00	158.46	0.68	100.97	160.37	0.59	0.59	0.83	0.33	0.34	0.59	0.071	0.111	0.071	0.100	0.007	0.017	0.002
23.300	76.444	236.56	478.67	1.54	442.86	272.59	147.43	0.33	1.49	0.00		25.00	0.00	0.00	478.67	0.77	351.69	490.57	0.59	0.59	0.70	2.00	1.78	2.00	0.000	-5.052	0.000	0.100	0.000	0.000	0.000

LDI = 0.694 S = 0.066 m
0.22 ft

CPTu-3 (field)

LIQUEFACTION TRIGGERING ANALYSIS
LOS ANGELES WATER WHEEL
LOS ANGELES, CALIFORNIA

Geosyntec consultants

Input Parameters

Boring Designation	CPTu-3 (field)
Ground Surface Elevation (ft)	313
Peak Ground Acceleration (g)	0.94
Earthquake Magnitude, M=	6.6
Water Table Depth (m)	11.28
Field Water Table Elevation =	276
Unit Weight above Water Table (pcf)	120.9
Unit Weight below Water Table (pcf)	127.2

Intermediate Parameters

Unit Weight above Water Table (kN/m^3)	19.0
Unit Weight below Water Table (kN/m^3)	20.0
Magnitude scaling factor, MSF	1.27

Legend

= Manual Input
= Calculated Value
= Calculated Factor of Safety against Liquefaction is over 1.0
= Calculated Factor of Safety against Liquefaction is 1.0 or Lower
red text = Manual input cell with formula used as input (and subject to change)
= Cell value not relevant for this sheet

NOTE: There is a significant difference between field water table elevation and assumed historic high water elevation (i.e., about 18 ft). qc1N should be calculated for field conditions (using "field" sheet), then used to calculate FS for historic high conditions (using "high" sheet).

Depth (m b.g.s.)	Depth (ft b.g.s.)	Elevation (ft)	Tip q_{cN}	F_{sN}	σ_{vc} (kPa)	σ_{vc}' (kPa)	Q	F	I_c	Layer	Flag "clay" or "Unsaturated"	Fines (%)	Interpreted q_{cn} near interfaces	Thin layer factor	Interpreted q_{cn}	C_N	q_{c1N}	qcN1-cs	Stress reduc. coeff, r_d	CSR	K_α for sand	CRR for M=7.5 & σ_{vc}'=1 atm	CRR	Factor of Safety	Potential For Liquefaction
0.100	0.328	312.67			1.90	1.90	-1.00	0.00	#NUM!		unsaturated	25.00			0.00	1.70	0.00	27.39	1.01	0.61	1.10	0.06	n.a.	n.a.	NO
0.200	0.656	314.34			3.80	3.80	-1.00	0.00	#NUM!		unsaturated	25.00			0.00	1.70	0.00	27.39	1.01	0.61	1.10	0.06	n.a.	n.a.	NO
0.300	0.984	312.02			5.70	5.70	-1.00	0.00	#NUM!		unsaturated	25.00			0.00	1.70	0.00	27.39	1.00	0.61	1.10	0.06	n.a.	n.a.	NO
0.400	1.312	311.69			7.60	7.60	-1.00	0.00	#NUM!		unsaturated	25.00			0.00	1.70	0.00	27.39	1.00	0.61	1.10	0.06	n.a.	n.a.	NO
0.500	1.640	311.36			9.50	9.50	-1.00	0.00	#NUM!		unsaturated	25.00			0.00	1.70	0.00	27.39	1.00	0.61	1.10	0.06	n.a.	n.a.	NO
0.600	1.969	311.03			11.40	11.40	-1.00	0.00	#NUM!		unsaturated	25.00			0.00	1.70	0.00	27.39	1.00	0.61	1.10	0.06	n.a.	n.a.	NO
0.700	2.297	310.70			13.30	13.30	-1.00	0.00	#NUM!		unsaturated	25.00			0.00	1.70	0.00	27.39	1.00	0.61	1.10	0.06	n.a.	n.a.	NO
0.800	2.625	310.38			15.21	15.21	-1.00	0.00	#NUM!		unsaturated	25.00			0.00	1.70	0.00	27.39	1.00	0.61	1.10	0.06	n.a.	n.a.	NO
0.900	2.953	310.05			17.11	17.11	-1.00	0.00	#NUM!		unsaturated	25.00			0.00	1.70	0.00	27.39	1.00	0.61	1.10	0.06	n.a.	n.a.	NO
1.000	3.281	309.72			19.01	19.01	-1.00	0.00	#NUM!		unsaturated	25.00			0.00	1.70	0.00	27.39	1.00	0.61	1.10	0.06	n.a.	n.a.	NO
1.100	3.609	309.39			20.91	20.91	-1.00	0.00	#NUM!		unsaturated	25.00			0.00	1.70	0.00	27.39	0.99	0.61	1.09	0.06	n.a.	n.a.	NO
1.200	3.937	309.06			22.81	22.81	-1.00	0.00	#NUM!		unsaturated	25.00			0.00	1.70	0.00	27.39	0.99	0.61	1.09	0.06	n.a.	n.a.	NO
1.300	4.265	308.73			24.71	24.71	-1.00	0.00	#NUM!		unsaturated	25.00			0.00	1.70	0.00	27.39	0.99	0.61	1.08	0.06	n.a.	n.a.	NO
1.400	4.593	308.41			26.61	26.61	-1.00	0.00	#NUM!		unsaturated	25.00			0.00	1.70	0.00	27.39	0.99	0.61	1.08	0.06	n.a.	n.a.	NO
1.500	4.921	308.08			28.51	28.51	-1.00	0.00	#NUM!		unsaturated	25.00			0.00	#NUM!	#NUM!	#NUM!	0.99	0.60	#NUM!	#NUM!	n.a.	n.a.	NO
1.600	5.249	307.75			30.41	30.41	-1.00	0.00	#NUM!		unsaturated	25.00			0.00	#NUM!	#NUM!	#NUM!	0.99	0.60	#NUM!	#NUM!	n.a.	n.a.	NO
1.700	5.577	307.42			32.31	32.31	-1.00	0.00	#NUM!		unsaturated	25.00			0.00	#NUM!	#NUM!	#NUM!	0.99	0.60	#NUM!	#NUM!	n.a.	n.a.	NO
1.800	5.906	307.09	59.36	0.34	34.21	34.21	174.24	0.57	1.57		unsaturated	25.00			59.36	1.55	92.07	148.65	0.99	0.60	1.10	0.27	n.a.	n.a.	NO
1.900	6.234	306.77	169.94	0.91	36.11	36.11	474.27	0.54	1.24		unsaturated	25.00			169.94	1.31	222.91	320.96	0.98	0.60	1.10	2.00	n.a.	n.a.	NO
2.000	6.562	306.44	207.30	0.54	38.01	38.01	549.78	0.26	0.97		unsaturated	25.00			207.30	1.29	268.26	380.69	0.98	0.60	1.10	2.00	n.a.	n.a.	NO
2.100	6.890	306.11	260.91	0.46	39.91	39.91	659.21	0.18	0.80		unsaturated	25.00			260.91	1.28	333.32	466.38	0.98	0.60	1.10	2.00	n.a.	n.a.	NO
2.200	7.218	305.78	282.46	1.34	41.82	41.82	681.25	0.47	1.10		unsaturated	25.00			282.46	1.26	356.45	496.84	0.98	0.60	1.10	2.00	n.a.	n.a.	NO
2.300	7.546	305.45	276.91	2.33	43.72	43.72	638.77	0.84	1.32		unsaturated	25.00			276.91	1.25	345.38	482.25	0.98	0.60	1.10	2.00	n.a.	n.a.	NO
2.400	7.874	305.13	278.76	1.67	45.62	45.62	616.20	0.60	1.21		unsaturated	25.00			278.76	1.23	343.80	480.17	0.98	0.60	1.10	2.00	n.a.	n.a.	NO
2.500	8.202	304.80	198.54	0.75	47.52	47.52	421.00	0.38	1.16		unsaturated	25.00			198.54	1.22	242.23	346.41	0.98	0.60	1.10	2.00	n.a.	n.a.	NO
2.600	8.530	304.47	157.41	0.58	49.42	49.42	320.72	0.37	1.24		unsaturated	25.00			157.41	1.21	190.08	277.73	0.97	0.60	1.10	2.00	n.a.	n.a.	NO
2.700	8.858	304.14	154.08	0.60	51.32	51.32	302.24	0.39	1.28		unsaturated	25.00			154.08	1.20	184.21	270.00	0.97	0.59	1.10	2.00	n.a.	n.a.	NO
2.800	9.186	303.81	159.87	1.00	53.22	53.22	302.40	0.63	1.42		unsaturated	25.00			159.87	1.18	189.31	276.71	0.97	0.59	1.10	2.00	n.a.	n.a.	NO
2.900	9.514	303.49	167.44	2.11	55.12	55.12	305.82	1.26	1.65		unsaturated	25.00			167.44	1.17	196.45	286.12	0.97	0.59	1.10	2.00	n.a.	n.a.	NO
3.000	9.843	303.16	139.62	1.02	57.02	57.02	246.30	0.73	1.53		unsaturated	25.00			139.62	1.17	163.54	242.77	0.97	0.59	1.10	2.00	n.a.	n.a.	NO
3.100	10.171	302.83	99.16	0.47	58.92	58.92	168.97	0.48	1.53		unsaturated	25.00			99.16	1.21	119.74	185.09	0.97	0.59	1.10	0.63	n.a.	n.a.	NO
3.200	10.499	302.50	80.46	0.53	60.82	60.82	132.61	0.67	1.70		unsaturated	25.00			80.46	1.22	98.18	156.69	0.97	0.59	1.09	0.31	n.a.	n.a.	NO
3.300	10.827	302.17	67.65	0.58	62.72	62.72	107.94	0.87	1.85		unsaturated	25.00			67.65	1.23	82.88	136.55	0.96	0.59	1.07	0.22	n.a.	n.a.	NO
3.400	11.155	301.85	69.14	1.61	64.62	64.62	107.06	2.35	2.15		unsaturated	25.00			69.14	1.21	83.57	137.45	0.96	0.59	1.06	0.22	n.a.	n.a.	NO
3.500	11.483	301.52	134.63	1.66	66.52	66.52	203.40	1.24	1.75		unsaturated	25.00			134.63	1.13	152.22	227.87	0.96	0.59	1.10	2.00	n.a.	n.a.	NO
3.600	11.811	301.19	214.87	1.41	68.42	68.42	316.16	0.66	1.42		unsaturated	25.00			214.87	1.11	238.12	340.99	0.96	0.59	1.10	2.00	n.a.	n.a.	NO
3.700	12.139	300.86	191.22	0.93	70.33	70.33	273.63	0.49	1.37		unsaturated	25.00			191.22	1.10	210.39	304.47	0.96	0.58	1.10	2.00	n.a.	n.a.	NO
3.800	12.467	300.53	203.69	0.87	72.23	72.23	283.83	0.43	1.33		unsaturated	25.00			203.69	1.09	222.53	320.46	0.96	0.58	1.10	2.00	n.a.	n.a.	NO
3.900	12.795	300.20	246.49	1.00	74.13	74.13	334.84	0.41	1.26		unsaturated	25.00			246.49	1.09	267.45	379.62	0.95	0.58	1.09	2.00	n.a.	n.a.	NO
4.000	13.123	299.88	278.20	2.21	76.03	76.03	368.58	0.80	1.44		unsaturated	25.00			278.20	1.08	299.85	422.29	0.95	0.58	1.09	2.00	n.a.	n.a.	NO
4.100	13.451	299.55	270.95	3.69	77.93	77.93	350.17	1.37	1.64		unsaturated	25.00			270.95	1.07	290.14	409.51	0.95	0.58	1.08	2.00	n.a.	n.a.	NO
4.200	13.780	299.22	232.66	2.03	79.83	79.83	293.37	0.88	1.53		unsaturated	25.00			232.66	1.06	247.56	353.43	0.95	0.58	1.07	2.00	n.a.	n.a.	NO
4.300	14.108	298.89	219.60	1.48	81.73	81.73	270.38	0.68	1.48		unsaturated	25.00			219.60	1.06	232.21	333.22	0.95	0.58	1.06	2.00	n.a.	n.a.	NO
4.400	14.436	298.56	377.32	2.70	83.63	83.63	454.68	0.72	1.35		unsaturated	25.00			377.32	1.05	396.58	549.69	0.95	0.58	1.06	2.00	n.a.	n.a.	NO
4.500	14.764	298.24	431.63	2.39	85.53	85.53	508.70	0.55	1.23		unsaturated	25.00			431.63	1.04	450.98	621.34	0.94	0.58	1.05	2.00	n.a.	n.a.	NO
4.600	15.092	297.91	407.45	1.84	87.43	87.43	469.69	0.45	1.19		unsaturated	25.00			407.45	1.04	423.26	584.83	0.94	0.58	1.04	2.00	n.a.	n.a.	NO
4.700	15.420	297.58	408.10	1.37	89.33	89.33	460.41	0.34	1.10		unsaturated	25.00			408.10	1.03	421.54	582.56	0.94	0.57	1.04	2.00	n.a.	n.a.	NO
4.800	15.748	297.25	368.44	1.01	91.23	91.23	406.88	0.28	1.08		unsaturated	25.00			368.44	1.03	378.46	525.82	0.94	0.57	1.03	2.00	n.a.	n.a.	NO
4.900	16.076	296.92	293.63	1.67	93.13	93.13	317.43	0.57	1.37		unsaturated	25.00			293.63	1.02	299.97	422.46	0.94	0.57	1.02	2.00	n.a.	n.a.	NO
5.000	16.404	296.60	156.82	2.22	95.03	95.03	165.66	1.42	1.86		unsaturated	25.00			156.82	1.02	159.54	237.50	0.94	0.57	1.02	2.00	n.a.	n.a.	NO
5.100	16.732	296.27	66.86	1.58	96.94	96.94	68.66	2.39	2.29		unsaturated	25.00			66.86	1.02	68.14	117.13	0.93	0.57	1.00	0.17	n.a.	n.a.	NO

LIQUEFACTION TRIGGERING ANALYSIS
LOS ANGELES WATER WHEEL
LOS ANGELES, CALIFORNIA

Geosyntec consultants

5.200	17.060	295.94	106.80	0.66	98.84	98.84	108.13	0.63	1.76		unsaturated	25.00			106.80	1.01	107.66	169.18	0.93	0.57	1.00	0.40	n.a.	n.a.	NO
5.300	17.388	295.61	211.49	0.57	100.74	100.74	211.05	0.27	1.32		unsaturated	25.00			211.49	1.00	211.64	306.12	0.93	0.57	1.00	2.00	n.a.	n.a.	NO
5.400	17.717	295.28	229.17	1.52	102.64	102.64	224.51	0.66	1.53		unsaturated	25.00			229.17	1.00	228.20	327.93	0.93	0.57	1.00	2.00	n.a.	n.a.	NO
5.500	18.045	294.96	261.75	2.09	104.54	104.54	251.89	0.80	1.55		unsaturated	25.00			261.75	0.99	259.38	369.00	0.93	0.57	0.99	2.00	n.a.	n.a.	NO
5.600	18.373	294.63	247.13	2.11	106.44	106.44	233.50	0.86	1.59		unsaturated	25.00			247.13	0.99	243.73	348.39	0.92	0.56	0.98	2.00	n.a.	n.a.	NO
5.700	18.701	294.30	219.46	1.07	108.34	108.34	203.60	0.49	1.48		unsaturated	25.00			219.46	0.98	215.44	311.13	0.92	0.56	0.98	2.00	n.a.	n.a.	NO
5.800	19.029	293.97	195.93	0.57	110.24	110.24	178.51	0.29	1.40		unsaturated	25.00			195.93	0.98	191.46	279.55	0.92	0.56	0.97	2.00	n.a.	n.a.	NO
5.900	19.357	293.64	161.63	0.43	112.14	112.14	144.57	0.27	1.46		unsaturated	25.00			161.63	0.97	156.85	233.96	0.92	0.56	0.97	2.00	n.a.	n.a.	NO
6.000	19.685	293.31	100.71	0.35	114.04	114.04	88.19	0.35	1.71		unsaturated	25.00			100.71	0.95	95.97	153.78	0.92	0.56	0.98	0.29	n.a.	n.a.	NO
6.100	20.013	292.99	56.14	0.34	115.94	115.94	47.90	0.62	2.06		unsaturated	25.00			56.14	0.93	52.35	96.33	0.91	0.56	0.99	0.14	n.a.	n.a.	NO
6.200	20.341	292.66	39.85	0.37	117.84	117.84	33.16	0.97	2.29		unsaturated	25.00			39.85	0.92	36.57	75.55	0.91	0.56	0.99	0.11	n.a.	n.a.	NO
6.300	20.669	292.33	58.54	0.30	119.74	119.74	48.38	0.52	2.02		unsaturated	25.00			58.54	0.92	53.74	98.17	0.91	0.56	0.98	0.14	n.a.	n.a.	NO
6.400	20.997	292.00	65.46	0.23	121.64	121.64	53.35	0.36	1.91		unsaturated	25.00			65.46	0.91	59.82	106.17	0.91	0.56	0.98	0.15	n.a.	n.a.	NO
6.500	21.325	291.67	67.08	0.18	123.54	123.54	53.84	0.27	1.86		unsaturated	25.00			67.08	0.91	60.88	107.57	0.91	0.55	0.98	0.16	n.a.	n.a.	NO
6.600	21.654	291.35	66.95	0.53	125.45	125.45	52.90	0.80	2.08		unsaturated	25.00			66.95	0.90	60.29	106.79	0.91	0.55	0.98	0.15	n.a.	n.a.	NO
6.700	21.982	291.02	77.81	0.77	127.35	127.35	60.71	1.01	2.08		unsaturated	25.00			77.81	0.90	69.98	119.55	0.90	0.55	0.97	0.18	n.a.	n.a.	NO
6.800	22.310	290.69	67.44	0.62	129.25	129.25	51.70	0.94	2.12		unsaturated	25.00			67.44	0.89	59.84	106.20	0.90	0.55	0.97	0.15	n.a.	n.a.	NO
6.900	22.638	290.36	87.46	0.53	131.15	131.15	66.36	0.61	1.93		unsaturated	25.00			87.46	0.89	78.01	130.14	0.90	0.55	0.96	0.20	n.a.	n.a.	NO
7.000	22.966	290.03	210.12	1.40	133.05	133.05	158.51	0.67	1.65		unsaturated	25.00			210.12	0.93	195.39	284.72	0.90	0.55	0.92	2.00	n.a.	n.a.	NO
7.100	23.294	289.71	268.27	1.40	134.95	134.95	199.78	0.52	1.50		unsaturated	25.00			268.27	0.93	248.52	354.70	0.90	0.55	0.91	2.00	n.a.	n.a.	NO
7.200	23.622	289.38	284.02	0.81	136.85	136.85	208.62	0.28	1.33		unsaturated	25.00			284.02	0.92	262.15	372.64	0.89	0.55	0.91	2.00	n.a.	n.a.	NO
7.300	23.950	289.05	330.83	0.78	138.75	138.75	239.82	0.24	1.24		unsaturated	25.00			330.83	0.92	304.25	428.09	0.89	0.54	0.90	2.00	n.a.	n.a.	NO
7.400	24.278	288.72	358.22	1.14	140.65	140.65	256.23	0.32	1.28		unsaturated	25.00			358.22	0.92	328.25	459.70	0.89	0.54	0.90	2.00	n.a.	n.a.	NO
7.500	24.606	288.39	365.08	1.22	142.55	142.55	257.66	0.34	1.30		unsaturated	25.00			365.08	0.91	333.35	466.42	0.89	0.54	0.90	2.00	n.a.	n.a.	NO
7.600	24.934	288.07	394.11	0.93	144.45	144.45	274.56	0.24	1.19		unsaturated	25.00			394.11	0.91	358.61	499.68	0.89	0.54	0.89	2.00	n.a.	n.a.	NO
7.700	25.262	287.74	418.05	1.27	146.35	146.35	287.50	0.30	1.23		unsaturated	25.00			418.05	0.91	379.08	526.65	0.88	0.54	0.89	2.00	n.a.	n.a.	NO
7.800	25.591	287.41	443.04	1.14	148.25	148.25	300.83	0.26	1.17		unsaturated	25.00			443.04	0.90	400.38	554.69	0.88	0.54	0.88	2.00	n.a.	n.a.	NO
7.900	25.919	287.08	434.52	1.43	150.15	150.15	291.28	0.33	1.25		unsaturated	25.00			434.52	0.90	391.36	542.82	0.88	0.54	0.88	2.00	n.a.	n.a.	NO
8.000	26.247	286.75	397.00	1.23	152.06	152.06	262.70	0.31	1.27		unsaturated	25.00			397.00	0.90	356.38	496.75	0.88	0.54	0.88	2.00	n.a.	n.a.	NO
8.100	26.575	286.43	348.49	1.67	153.96	153.96	227.62	0.48	1.43		unsaturated	25.00			348.49	0.89	311.81	438.05	0.88	0.54	0.87	2.00	n.a.	n.a.	NO
8.200	26.903	286.10	347.58	0.90	155.86	155.86	224.24	0.26	1.29		unsaturated	25.00			347.58	0.89	309.99	435.66	0.87	0.53	0.87	2.00	n.a.	n.a.	NO
8.300	27.231	285.77	301.49	0.76	157.76	157.76	192.02	0.25	1.34		unsaturated	25.00			301.49	0.89	268.02	380.38	0.87	0.53	0.87	2.00	n.a.	n.a.	NO
8.400	27.559	285.44	255.64	0.69	159.66	159.66	160.72	0.27	1.42		unsaturated	25.00			255.64	0.89	226.54	325.75	0.87	0.53	0.86	2.00	n.a.	n.a.	NO
8.500	27.887	285.11	209.13	2.09	161.56	161.56	129.74	1.01	1.83		unsaturated	25.00			209.13	0.88	184.76	270.72	0.87	0.53	0.86	2.00	n.a.	n.a.	NO
8.600	28.215	284.78	201.54	4.60	163.46	163.46	123.53	2.30	2.10		unsaturated	25.00			201.54	0.88	177.50	261.16	0.87	0.53	0.86	2.00	n.a.	n.a.	NO
8.700	28.543	284.46	195.30	2.04	165.36	165.36	118.29	1.05	1.87		unsaturated	25.00			195.30	0.88	171.40	253.13	0.86	0.53	0.85	2.00	n.a.	n.a.	NO
8.800	28.871	284.13	115.06	1.72	167.26	167.26	68.48	1.51	2.15		unsaturated	25.00			115.06	0.82	93.97	151.15	0.86	0.53	0.92	0.28	n.a.	n.a.	NO
8.900	29.199	283.80	135.64	1.50	169.16	169.16	79.98	1.12	2.02		unsaturated	25.00			135.64	0.83	112.44	175.47	0.86	0.53	0.90	0.47	n.a.	n.a.	NO
9.000	29.528	283.47	106.59	0.95	171.06	171.06	61.93	0.91	2.05		unsaturated	25.00			106.59	0.80	85.41	139.88	0.86	0.52	0.92	0.23	n.a.	n.a.	NO
9.100	29.856	283.14	74.72	0.55	172.96	172.96	42.63	0.76	2.14		unsaturated	25.00			74.72	0.77	57.35	102.92	0.86	0.52	0.94	0.15	n.a.	n.a.	NO
9.200	30.184	282.82	53.41	0.80	174.86	174.86	29.85	1.56	2.44		unsaturated	25.00			53.41	0.74	39.54	79.47	0.85	0.52	0.95	0.11	n.a.	n.a.	NO
9.300	30.512	282.49	57.90	1.13	176.76	176.76	32.08	2.01	2.49		unsaturated	25.00			57.90	0.74	42.89	83.87	0.85	0.52	0.95	0.12	n.a.	n.a.	NO
9.400	30.840	282.16	86.62	1.85	178.66	178.66	47.96	2.18	2.37		unsaturated	25.00			86.62	0.77	66.36	114.79	0.85	0.52	0.93	0.17	n.a.	n.a.	NO
9.500	31.168	281.83	180.98	1.61	180.57	180.57	100.23	0.90	1.88		unsaturated	25.00			180.98	0.84	152.60	228.36	0.85	0.52	0.83	2.00	n.a.	n.a.	NO
9.600	31.496	281.50	286.36	1.80	182.47	182.47	157.51	0.63	1.63		unsaturated	25.00			286.36	0.86	244.99	350.04	0.84	0.52	0.82	2.00	n.a.	n.a.	NO
9.700	31.824	281.18	335.73	0.96	184.37	184.37	182.92	0.29	1.38		unsaturated	25.00			335.73	0.85	286.44	404.64	0.84	0.52	0.82	2.00	n.a.	n.a.	NO
9.800	32.152	280.85	316.25	0.99	186.27	186.27	170.48	0.31	1.43		unsaturated	25.00			316.25	0.85	269.10	381.79	0.84	0.51	0.82	2.00	n.a.	n.a.	NO
9.900	32.480	280.52	356.17	1.41	188.17	188.17	190.18	0.40	1.45		unsaturated	25.00			356.17	0.85	302.25	425.46	0.84	0.51	0.81	2.00	n.a.	n.a.	NO
10.000	32.808	280.19	417.98	0.91	190.07	190.07	221.11	0.22	1.26		unsaturated	25.00			417.98	0.85	353.76	493.30	0.84	0.51	0.81	2.00	n.a.	n.a.	NO
10.100	33.136	279.86	400.81	1.15	191.97	191.97	209.88	0.29	1.33		unsaturated	25.00			400.81	0.84	338.34	472.99	0.83	0.51	0.81	2.00	n.a.	n.a.	NO
10.200	33.465	279.54	357.63	1.49	193.87	193.87	185.31	0.42	1.47		unsaturated	25.00			357.63	0.84	301.11	423.95	0.83	0.51	0.80	2.00	n.a.	n.a.	NO
10.300	33.793	279.21	332.88	0.76	195.77	195.77	170.73	0.23	1.37		unsaturated	25.00			332.88	0.84	279.55	395.56	0.83	0.51	0.80	2.00	n.a.	n.a.	NO
10.400	34.121	278.88	313.89	0.25	197.67	197.67	159.38	0.08	1.27		unsaturated	25.00			313.89	0.84	262.93	373.67	0.83	0.51	0.80	2.00	n.a.	n.a.	NO
10.500	34.449	278.55	282.26	0.27	199.57	199.57	141.85	0.10	1.33		unsaturated	25.00			282.26	0.84	235.84	338.00	0.83	0.50	0.80	2.00	n.a.	n.a.	NO
10.600	34.777	278.22	291.80	0.29	201.47	201.47	145.28	0.10	1.33		unsaturated	25.00			291.80	0.83	243.20	347.69	0.82	0.50	0.79	2.00	n.a.	n.a.	NO
10.700	35.105	277.90	309.81	0.30	203.37	203.37	152.86	0.10	1.30		unsaturated	25.00			309.81	0.83	257.57	366.61	0.82	0.50	0.79	2.00	n.a.	n.a.	NO
10.800	35.433	277.57	297.34	0.43	205.27	205.27	145.30	0.14	1.36		unsaturated	25.00			297.34	0.83	246.60	352.16	0.82	0.50	0.79	2.00	n.a.	n.a.	NO
10.900	35.761	277.24	285.77	0.52	207.17	207.17	138.32	0.18	1.41		unsaturated	25.00			285.77	0.83	236.43	338.77	0.82	0.50	0.78	2.00	n.a.	n.a.	NO
11.000	36.089	276.91	364.05	0.54	209.08	209.08	174.87	0.15	1.29		unsaturated	25.00			364.05	0.83	300.47	423.11	0.82	0.50	0.78	2.00	n.a.	n.a.	NO
11.100	36.417	276.58	389.65	0.90	210.98	210.98	185.54	0.23	1.34		unsaturated	25.00			389.65	0.82	320.83	449.93	0.81	0.50	0.78	2.00	n.a.	n.a.	NO
11.200	36.745	276.25	361.53	0.95	212.88	212.88	170.53	0.26	1.39		unsaturated	25.00			361.53	0.82	296.97	418.51	0.81	0.50	0.78	2.00	n.a.	n.a.	NO
11.300	37.073	275.93	322.90	0.76	214.78	214.56	151.00	0.24	1.42			25.00			322.90	0.82	264.69	375.99	0.81	0.50	0.77	2.00	1.96	2.00	NO
11.400	37.402	275.60	298.89	0.59	216.68	215.48	139.09	0.20	1.42			25.00			298.89	0.82	244.74	349.71	0.81	0.50	0.77	2.00	1.96	2.00	NO
11.500	37.730	275.27	286.24	0.60	218.58	216.40	132.59	0.21	1.45			25.00			286.24	0.82	234.11	335.72	0.81	0.50	0.77	2.00	1.95	2.00	NO
11.600	38.058	274.94	291.19	0.57	220.48	217.32	134.32	0.20	1.44			25.00			291.19	0.82	237.90	340.70	0.80	0.50	0.77	2.00	1.95	2.00	NO
11.700	38.386	274.61	287.40	0.96	222.38	218.24	131.99	0.34	1.54			25.00			287.40	0.82	234.53	336.27	0.80	0.50	0.77	2.00	1.95	2.00	NO
11.800	38.714	274.29	306.15	1.08	224.28	219.16	140.07	0.35	1.53			25.00			306.15	0.82	249.56	356.07	0.80	0.50	0.77	2.00	1.94	2.00	NO
11.900	39.042	273.96	356.63	1.34	226.18	220.08	162.64	0.38	1.49			25.00			356.63	0.81	290.39	409.84	0.80	0.50	0.77	2.00	1.94	2.00	NO
12.000	39.370	273.63	371.35	2.13	228.08	221.00	168.68	0.58	1.58			25.00			371.35	0.81	302.04	425.18	0.79	0.50	0.76	2.00	1.94	2.00	NO
12.100	39.698	273.30	391.03	2.34	229.98	221.92	176.93	0.60	1.58			25.00			391.03	0.81	317.70	445.81	0.79	0.50	0.76	2.00	1.93	2.00	NO
12.200	40.026	272.97	409.58	2.34	231.88	222.84	184.60	0.57	1.55			25.00			409.58	0.81	332.41	465.18	0.79	0.50	0.76	2.00	1.93	2.00	NO
12.300	40.354	272.65	416.95	1.53	233.78	223.75	187.16	0.37	1.43			25.00			416.95	0.81	338.02	472.57	0.79	0.50	0.76	2.00	1.93	2.00	NO

LIQUEFACTION TRIGGERING ANALYSIS
LOS ANGELES WATER WHEEL
LOS ANGELES, CALIFORNIA

Geosyntec consultants

12.400	40.682	272.32	418.56	0.96	235.69	224.67	187.11	0.23	1.33			25.00			418.56	0.81	338.96	473.81	0.79	0.50	0.76	2.00	1.93	2.00	NO
12.500	41.010	271.99	434.12	1.12	237.59	225.59	193.31	0.26	1.34			25.00			434.12	0.81	351.18	489.90	0.78	0.50	0.76	2.00	1.92	2.00	NO
12.600	41.339	271.66	487.25	1.61	239.49	226.51	216.20	0.33	1.36			25.00			487.25	0.81	393.74	545.95	0.78	0.51	0.76	2.00	1.92	2.00	NO
12.700	41.667	271.33	446.46	1.91	241.39	227.43	197.21	0.43	1.45			25.00			446.46	0.81	360.40	502.03	0.78	0.51	0.76	2.00	1.92	2.00	NO
12.800	41.995	271.01	453.79	1.36	243.29	228.35	199.65	0.30	1.36			25.00			453.79	0.81	365.92	509.31	0.78	0.51	0.75	2.00	1.91	2.00	NO
12.900	42.323	270.68	510.23	1.10	245.19	229.27	223.70	0.22	1.25			25.00			510.23	0.81	410.99	568.67	0.78	0.51	0.75	2.00	1.91	2.00	NO
13.000	42.651	270.35	501.54	1.20	247.09	230.19	218.98	0.24	1.28			25.00			501.54	0.80	403.57	558.89	0.77	0.51	0.75	2.00	1.91	2.00	NO
13.100	42.979	270.02	495.60	1.43	248.99	231.11	215.51	0.29	1.33			25.00			495.60	0.80	398.37	552.05	0.77	0.51	0.75	2.00	1.90	2.00	NO
13.200	43.307	269.69	506.33	2.02	250.89	232.03	219.31	0.40	1.40			25.00			506.33	0.80	406.57	562.84	0.77	0.51	0.75	2.00	1.90	2.00	NO
13.300	43.635	269.36	533.21	1.81	252.79	232.95	230.10	0.34	1.34			25.00			533.21	0.80	427.71	590.69	0.77	0.51	0.75	2.00	1.90	2.00	NO
13.400	43.963	269.04	486.47	1.25	254.69	233.87	209.00	0.26	1.31			25.00			486.47	0.80	389.81	540.77	0.77	0.51	0.75	2.00	1.89	2.00	NO
13.500	44.291	268.71	538.33	0.89	256.59	234.79	230.48	0.17	1.19			25.00			538.33	0.80	430.92	594.91	0.76	0.51	0.75	2.00	1.89	2.00	NO
13.600	44.619	268.38	588.49	2.02	258.49	235.71	251.07	0.35	1.31			25.00			588.49	0.80	470.59	647.16	0.76	0.51	0.75	2.00	1.89	2.00	NO
13.700	44.948	268.05	570.10	1.72	260.39	236.63	242.23	0.30	1.29			25.00			570.10	0.80	455.41	627.17	0.76	0.51	0.74	2.00	1.89	2.00	NO
13.800	45.276	267.72	564.88	1.46	262.29	237.55	239.07	0.26	1.26			25.00			564.88	0.80	450.78	621.07	0.76	0.51	0.74	2.00	1.88	2.00	NO
13.900	45.604	267.40	600.84	1.56	264.20	238.47	253.37	0.26	1.24			25.00			600.84	0.80	478.99	658.22	0.76	0.51	0.74	2.00	1.88	2.00	NO
14.000	45.932	267.07	618.13	1.13	266.10	239.39	259.68	0.18	1.16			25.00			618.13	0.80	492.27	675.71	0.75	0.51	0.74	2.00	1.88	2.00	NO
14.100	46.260	266.74	574.07	0.97	268.00	240.31	240.16	0.17	1.18			25.00			574.07	0.80	456.72	628.89	0.75	0.51	0.74	2.00	1.87	2.00	NO
14.200	46.588	266.41	362.00	2.60	269.90	241.23	150.45	0.72	1.68			25.00			362.00	0.79	287.71	406.31	0.75	0.51	0.74	2.00	1.87	2.00	NO
14.300	46.916	266.08	178.88	2.28	271.80	242.15	73.49	1.29	2.08			25.00			178.88	0.75	134.88	205.03	0.75	0.51	0.76	1.45	1.39	2.00	NO
14.400	47.244	265.76	431.35	1.07	273.70	243.07	178.11	0.25	1.37			25.00			431.35	0.79	342.14	478.00	0.75	0.51	0.74	2.00	1.87	2.00	NO
14.500	47.572	265.43	522.82	1.39	275.60	243.99	215.30	0.27	1.31			25.00			522.82	0.79	414.28	573.01	0.74	0.51	0.74	2.00	1.86	2.00	NO
14.600	47.900	265.10	548.95	1.48	277.50	244.91	225.26	0.27	1.29			25.00			548.95	0.79	434.56	599.71	0.74	0.51	0.73	2.00	1.86	2.00	NO
14.700	48.228	264.77	550.12	1.90	279.40	245.83	224.88	0.35	1.35			25.00			550.12	0.79	435.05	600.35	0.74	0.51	0.73	2.00	1.86	2.00	NO
14.800	48.556	264.44	536.68	1.88	281.30	246.75	218.54	0.35	1.37			25.00			536.68	0.79	424.01	585.81	0.74	0.51	0.73	2.00	1.85	2.00	NO
14.900	48.885	264.12	520.07	1.84	283.20	247.67	210.94	0.36	1.38			25.00			520.07	0.79	410.48	567.99	0.73	0.51	0.73	2.00	1.85	2.00	NO
15.000	49.213	263.79	517.99	1.88	285.10	248.59	209.31	0.37	1.39			25.00			517.99	0.79	408.44	565.30	0.73	0.51	0.73	2.00	1.85	2.00	NO
15.100	49.541	263.46	523.89	1.28	287.00	249.51	210.92	0.25	1.30			25.00			523.89	0.79	412.69	570.91	0.73	0.51	0.73	2.00	1.85	2.00	NO
15.200	49.869	263.13	567.41	1.10	288.90	250.43	227.69	0.19	1.22			25.00			567.41	0.79	446.54	615.49	0.73	0.51	0.73	2.00	1.84	2.00	NO
15.300	50.197	262.80	552.74	1.02	290.81	251.35	220.95	0.19	1.23			25.00			552.74	0.79	434.57	599.72	0.73	0.51	0.73	2.00	1.84	2.00	NO
15.400	50.525	262.48	521.70	1.87	292.71	252.27	207.71	0.36	1.39			25.00			521.70	0.79	409.77	567.06	0.72	0.51	0.72	2.00	1.84	2.00	NO
15.500	50.853	262.15	520.61	2.87	294.61	253.18	206.52	0.55	1.50			25.00			520.61	0.78	408.52	565.42	0.72	0.51	0.72	2.00	1.83	2.00	NO
15.600	51.181	261.82	510.89	2.17	296.51	254.10	201.90	0.43	1.44			25.00			510.89	0.78	400.51	554.87	0.72	0.51	0.72	2.00	1.83	2.00	NO
15.700	51.509	261.49	489.62	2.30	298.41	255.02	192.74	0.47	1.49			25.00			489.62	0.78	383.47	532.43	0.72	0.51	0.72	2.00	1.83	2.00	NO
15.800	51.837	261.16	489.20	3.09	300.31	255.94	191.87	0.64	1.57			25.00			489.20	0.78	382.78	531.51	0.72	0.51	0.72	2.00	1.83	2.00	NO
15.900	52.165	260.83	489.71	2.90	302.21	256.86	191.38	0.60	1.55			25.00			489.71	0.78	382.82	531.57	0.72	0.51	0.72	2.00	1.82	2.00	NO
16.000	52.493	260.51	474.57	3.37	304.11	257.78	184.76	0.71	1.61			25.00			474.57	0.78	370.63	515.51	0.71	0.51	0.72	2.00	1.82	2.00	NO
16.100	52.822	260.18	461.50	2.74	306.01	258.70	178.99	0.60	1.57			25.00			461.50	0.78	360.09	501.63	0.71	0.51	0.72	2.00	1.82	2.00	NO
16.200	53.150	259.85	468.27	3.03	307.91	259.62	180.98	0.65	1.59			25.00			468.27	0.78	365.03	508.14	0.71	0.51	0.72	2.00	1.82	2.00	NO
16.300	53.478	259.52	484.71	2.60	309.81	260.54	186.71	0.54	1.53			25.00			484.71	0.78	377.49	524.54	0.71	0.51	0.72	2.00	1.81	2.00	NO
16.400	53.806	259.19	505.02	2.49	311.71	261.46	193.89	0.50	1.50			25.00			505.02	0.78	392.94	544.90	0.71	0.51	0.71	2.00	1.81	2.00	NO
16.500	54.134	258.87	506.44	2.54	313.61	262.38	193.75	0.50	1.50			25.00			506.44	0.78	393.68	545.88	0.70	0.51	0.71	2.00	1.81	2.00	NO
16.600	54.462	258.54	531.40	1.36	315.51	263.30	202.64	0.26	1.32			25.00			531.40	0.78	412.70	570.93	0.70	0.51	0.71	2.00	1.80	2.00	NO
16.700	54.790	258.21	529.00	1.33	317.41	264.22	201.01	0.25	1.32			25.00			529.00	0.78	410.46	567.97	0.70	0.51	0.71	2.00	1.80	2.00	NO
16.800	55.118	257.88	537.16	1.17	319.32	265.14	203.42	0.22	1.29			25.00			537.16	0.78	416.41	575.81	0.70	0.51	0.71	2.00	1.80	2.00	NO
16.900	55.446	257.55	540.23	3.51	321.22	266.06	203.87	0.65	1.56			25.00			540.23	0.77	418.41	578.44	0.70	0.51	0.71	2.00	1.80	2.00	NO
17.000	55.774	257.23	540.71	7.46	323.12	266.98	203.34	1.39	1.79			25.00			540.71	0.77	418.40	578.42	0.69	0.51	0.71	2.00	1.79	2.00	NO
17.100	56.102	256.90	479.63	4.76	325.02	267.90	179.61	1.00	1.72			25.00			479.63	0.77	370.80	515.73	0.69	0.51	0.71	2.00	1.79	2.00	NO
17.200	56.430	256.57	481.22	2.04	326.92	268.82	179.59	0.43	1.48			25.00			481.22	0.77	371.69	516.91	0.69	0.51	0.71	2.00	1.79	2.00	NO
17.300	56.759	256.24	466.45	2.11	328.82	269.74	173.43	0.46	1.51			25.00			466.45	0.77	359.95	501.45	0.69	0.51	0.70	2.00	1.79	2.00	NO
17.400	57.087	255.91	469.31	2.21	330.72	270.66	173.91	0.47	1.52			25.00			469.31	0.77	361.84	503.94	0.69	0.51	0.70	2.00	1.78	2.00	NO
17.500	57.415	255.59	477.80	1.88	332.62	271.58	176.47	0.40	1.47			25.00			477.80	0.77	368.06	512.12	0.68	0.51	0.70	2.00	1.78	2.00	NO
17.600	57.743	255.26	479.40	1.73	334.52	272.50	176.46	0.36	1.45			25.00			479.40	0.77	368.96	513.32	0.68	0.51	0.70	2.00	1.78	2.00	NO
17.700	58.071	254.93	458.57	1.98	336.42	273.42	168.17	0.44	1.51			25.00			458.57	0.77	352.62	491.79	0.68	0.51	0.70	2.00	1.78	2.00	NO
17.800	58.399	254.60	411.45	3.02	338.32	274.34	150.25	0.74	1.69			25.00			411.45	0.77	316.10	443.70	0.68	0.51	0.70	2.00	1.77	2.00	NO
17.900	58.727	254.27	394.23	3.65	340.22	275.26	143.42	0.93	1.77			25.00			394.23	0.77	302.60	425.92	0.68	0.51	0.70	2.00	1.77	2.00	NO
18.000	59.055	253.94	376.95	3.87	342.12	276.18	136.61	1.04	1.82			25.00			376.95	0.77	289.08	408.12	0.68	0.51	0.70	2.00	1.77	2.00	NO
18.100	59.383	253.62	379.43	3.87	344.02	277.10	137.06	1.03	1.82			25.00			379.43	0.77	290.73	410.29	0.67	0.51	0.70	2.00	1.77	2.00	NO
18.200	59.711	253.29	389.07	3.36	345.93	278.02	140.10	0.87	1.76			25.00			389.07	0.77	297.86	419.67	0.67	0.51	0.70	2.00	1.76	2.00	NO
18.300	60.039	252.96	366.53	3.50	347.83	278.94	131.47	0.96	1.81			25.00			366.53	0.76	280.36	396.62	0.67	0.51	0.69	2.00	1.76	2.00	NO
18.400	60.367	252.63	381.38	2.79	349.73	279.86	136.39	0.74	1.72			25.00			381.38	0.76	291.46	411.25	0.67	0.51	0.69	2.00	1.76	2.00	NO
18.500	60.696	252.30	376.20	2.88	351.63	280.78	134.07	0.77	1.74			25.00			376.20	0.76	287.26	405.71	0.67	0.51	0.69	2.00	1.76	2.00	NO
18.600	61.024	251.98	420.38	3.06	353.53	281.70	149.47	0.73	1.69			25.00			420.38	0.76	320.71	449.77	0.66	0.51	0.69	2.00	1.75	2.00	NO
18.700	61.352	251.65	461.13	3.64	355.43	282.61	163.54	0.79	1.68			25.00			461.13	0.76	351.50	490.32	0.66	0.51	0.69	2.00	1.75	2.00	NO
18.800	61.680	251.32	455.32	4.22	357.33	283.53	160.93	0.93	1.74			25.00			455.32	0.76	346.78	484.10	0.66	0.51	0.69	2.00	1.75	2.00	NO
18.900	62.008	250.99	403.99	3.90	359.23	284.45	142.18	0.97	1.79			25.00			403.99	0.76	307.42	432.26	0.66	0.51	0.69	2.00	1.75	2.00	NO
19.000	62.336	250.66	418.76	2.75	361.13	285.37	146.94	0.66	1.67			25.00			418.76	0.76	318.38	446.71	0.66	0.51	0.69	2.00	1.74	2.00	NO
19.100	62.664	250.34	493.93	2.62	363.03	286.29	172.98	0.53	1.55			25.00			493.93	0.76	375.22	521.56	0.66	0.51	0.69	2.00	1.74	2.00	NO
19.200	62.992	250.01	503.30	3.82	364.93	287.21	175.72	0.76	1.65			25.00			503.30	0.76	382.02	530.51	0.65	0.51	0.69	2.00	1.74	2.00	NO
19.300	63.320	249.68	542.45	3.61	366.83	288.13	188.87	0.67	1.59			25.00			542.45	0.76	411.39	569.19	0.65	0.51	0.69	2.00	1.74	2.00	NO
19.400	63.648	249.35	493.18	2.32	368.73	289.05	171.05	0.47	1.53			25.00			493.18	0.76	373.70	519.56	0.65	0.51	0.68	2.00	1.73	2.00	NO
19.500	63.976	249.02	560.91	2.27	370.63	289.97	194.09	0.41	1.44			25.00			560.91	0.76	424.67	586.69	0.65	0.51	0.68	2.00	1.73	2.00	NO

CPTu-3 (high)

LIQUEFACTION TRIGGERING ANALYSIS
LOS ANGELES WATER WHEEL
LOS ANGELES, CALIFORNIA

Geosyntec consultants

Input Parameters

Boring Designation	CPTu-3 (high)
Ground Surface Elevation (ft)	313
Peak Ground Acceleration (g)	0.94
Earthquake Magnitude, M=	6.6
Water Table Depth (m)	5.94
Historic High Water Table Elevation =	293.5
Unit Weight above Water Table (pcf)	120.9
Unit Weight below Water Table (pcf)	127.2

Intermediate Parameters

Unit Weight above Water Table (kN/m^3)	19.0
Unit Weight below Water Table (kN/m^3)	20.0
Magnitude scaling factor, MSF	1.27

Legend

= Manual Input
= Calculated Value
= Calculated Factor of Safety against Liquefaction is over 1.0
= Calculated Factor of Safety against Liquefaction is 1.0 or Lower
red text = Manual input cell with formula used as input (and subject to change)
= Cell value not relevant for this sheet

NOTE: There is a significant difference between field water table elevation and assumed historic high water elevation (i.e., about 18 ft). qc1N should be calculated for field conditions (using "field" sheet), then used to calculate FS for historic high conditions (using "high" sheet).

Depth (m b.g.s.)	Depth (ft b.g.s.)	Elevation (ft)	Tip q_{cN}	F_{sN}	σ_{vc} (kPa)	σ_{vc}' (kPa)	Q	F	I_c	Layer	Flag "clay" or "Unsaturated"	Fines (%)	Interpreted q_{cn} near interfaces	Thin layer factor	Interpreted q_{cn}	C_N	q_{c1N}	qcN1-cs	Stress reduc. coeff, r_d	CSR	K_α for sand	CRR for M=7.5 & σ_{vc}'=1 atm	CRR	Factor of Safety	Potential For Liquefaction
0.100	0.328	312.67	0.00	0.00	1.90	1.90	-1.00	0.00	#NUM!	0.00	unsaturated	25.00	0.00	0.00	0.00	1.70	0.00	27.39	1.01	0.61	1.10	0.06	n.a.	2.00	NO
0.200	0.656	314.34	0.00	0.00	3.80	3.80	-1.00	0.00	#NUM!	0.00	unsaturated	25.00	0.00	0.00	0.00	1.70	0.00	27.39	1.01	0.61	1.10	0.06	n.a.	2.00	NO
0.300	0.984	312.02	0.00	0.00	5.70	5.70	-1.00	0.00	#NUM!	0.00	unsaturated	25.00	0.00	0.00	0.00	1.70	0.00	27.39	1.00	0.61	1.10	0.06	n.a.	2.00	NO
0.400	1.312	311.69	0.00	0.00	7.60	7.60	-1.00	0.00	#NUM!	0.00	unsaturated	25.00	0.00	0.00	0.00	1.70	0.00	27.39	1.00	0.61	1.10	0.06	n.a.	2.00	NO
0.500	1.640	311.36	0.00	0.00	9.50	9.50	-1.00	0.00	#NUM!	0.00	unsaturated	25.00	0.00	0.00	0.00	1.70	0.00	27.39	1.00	0.61	1.10	0.06	n.a.	2.00	NO
0.600	1.969	311.03	0.00	0.00	11.40	11.40	-1.00	0.00	#NUM!	0.00	unsaturated	25.00	0.00	0.00	0.00	1.70	0.00	27.39	1.00	0.61	1.10	0.06	n.a.	2.00	NO
0.700	2.297	310.70	0.00	0.00	13.30	13.30	-1.00	0.00	#NUM!	0.00	unsaturated	25.00	0.00	0.00	0.00	1.70	0.00	27.39	1.00	0.61	1.10	0.06	n.a.	2.00	NO
0.800	2.625	310.38	0.00	0.00	15.21	15.21	-1.00	0.00	#NUM!	0.00	unsaturated	25.00	0.00	0.00	0.00	1.70	0.00	27.39	1.00	0.61	1.10	0.06	n.a.	2.00	NO
0.900	2.953	310.05	0.00	0.00	17.11	17.11	-1.00	0.00	#NUM!	0.00	unsaturated	25.00	0.00	0.00	0.00	1.70	0.00	27.39	1.00	0.61	1.10	0.06	n.a.	2.00	NO
1.000	3.281	309.72	0.00	0.00	19.01	19.01	-1.00	0.00	#NUM!	0.00	unsaturated	25.00	0.00	0.00	0.00	1.70	0.00	27.39	1.00	0.61	1.10	0.06	n.a.	2.00	NO
1.100	3.609	309.39	0.00	0.00	20.91	20.91	-1.00	0.00	#NUM!	0.00	unsaturated	25.00	0.00	0.00	0.00	1.70	0.00	27.39	0.99	0.61	1.09	0.06	n.a.	2.00	NO
1.200	3.937	309.06	0.00	0.00	22.81	22.81	-1.00	0.00	#NUM!	0.00	unsaturated	25.00	0.00	0.00	0.00	1.70	0.00	27.39	0.99	0.61	1.09	0.06	n.a.	2.00	NO
1.300	4.265	308.73	0.00	0.00	24.71	24.71	-1.00	0.00	#NUM!	0.00	unsaturated	25.00	0.00	0.00	0.00	1.70	0.00	27.39	0.99	0.61	1.08	0.06	n.a.	2.00	NO
1.400	4.593	308.41	0.00	0.00	26.61	26.61	-1.00	0.00	#NUM!	0.00	unsaturated	25.00	0.00	0.00	0.00	1.70	0.00	27.39	0.99	0.61	1.08	0.06	n.a.	2.00	NO
1.500	4.921	308.08	0.00	0.00	28.51	28.51	-1.00	0.00	#NUM!	0.00	unsaturated	25.00	0.00	0.00	0.00	#NUM!	#NUM!	#NUM!	0.99	0.60	#NUM!	#NUM!	n.a.	2.00	NO
1.600	5.249	307.75	0.00	0.00	30.41	30.41	-1.00	0.00	#NUM!	0.00	unsaturated	25.00	0.00	0.00	0.00	#NUM!	#NUM!	#NUM!	0.99	0.60	#NUM!	#NUM!	n.a.	2.00	NO
1.700	5.577	307.42	0.00	0.00	32.31	32.31	-1.00	0.00	#NUM!	0.00	unsaturated	25.00	0.00	0.00	0.00	#NUM!	#NUM!	#NUM!	0.99	0.60	#NUM!	#NUM!	n.a.	2.00	NO
1.800	5.906	307.09	59.36	0.34	34.21	34.21	174.24	0.57	1.57	0.00	unsaturated	25.00	0.00	0.00	59.36	1.55	92.07	148.65	0.99	0.60	1.10	0.27	n.a.	2.00	NO
1.900	6.234	306.77	169.94	0.91	36.11	36.11	474.27	0.54	1.24	0.00	unsaturated	25.00	0.00	0.00	169.94	1.31	222.91	320.96	0.98	0.60	1.10	2.00	n.a.	2.00	NO
2.000	6.562	306.44	207.30	0.54	38.01	38.01	549.78	0.26	0.97	0.00	unsaturated	25.00	0.00	0.00	207.30	1.29	268.26	380.69	0.98	0.60	1.10	2.00	n.a.	2.00	NO
2.100	6.890	306.11	260.91	0.46	39.91	39.91	659.21	0.18	0.80	0.00	unsaturated	25.00	0.00	0.00	260.91	1.28	333.32	466.38	0.98	0.60	1.10	2.00	n.a.	2.00	NO
2.200	7.218	305.78	282.46	1.34	41.82	41.82	681.25	0.47	1.10	0.00	unsaturated	25.00	0.00	0.00	282.46	1.26	356.45	496.84	0.98	0.60	1.10	2.00	n.a.	2.00	NO
2.300	7.546	305.45	276.91	2.33	43.72	43.72	638.77	0.84	1.32	0.00	unsaturated	25.00	0.00	0.00	276.91	1.25	345.38	482.25	0.98	0.60	1.10	2.00	n.a.	2.00	NO
2.400	7.874	305.13	278.76	1.67	45.62	45.62	616.20	0.60	1.21	0.00	unsaturated	25.00	0.00	0.00	278.76	1.23	343.80	480.17	0.98	0.60	1.10	2.00	n.a.	2.00	NO
2.500	8.202	304.80	198.54	0.75	47.52	47.52	421.00	0.38	1.16	0.00	unsaturated	25.00	0.00	0.00	198.54	1.22	242.23	346.41	0.98	0.60	1.10	2.00	n.a.	2.00	NO
2.600	8.530	304.47	157.41	0.58	49.42	49.42	320.72	0.37	1.24	0.00	unsaturated	25.00	0.00	0.00	157.41	1.21	190.08	277.73	0.97	0.60	1.10	2.00	n.a.	2.00	NO
2.700	8.858	304.14	154.08	0.60	51.32	51.32	302.24	0.39	1.28	0.00	unsaturated	25.00	0.00	0.00	154.08	1.20	184.21	270.00	0.97	0.59	1.10	2.00	n.a.	2.00	NO
2.800	9.186	303.81	159.87	1.00	53.22	53.22	302.40	0.63	1.42	0.00	unsaturated	25.00	0.00	0.00	159.87	1.18	189.31	276.71	0.97	0.59	1.10	2.00	n.a.	2.00	NO
2.900	9.514	303.49	167.44	2.11	55.12	55.12	305.82	1.26	1.65	0.00	unsaturated	25.00	0.00	0.00	167.44	1.17	196.45	286.12	0.97	0.59	1.10	2.00	n.a.	2.00	NO
3.000	9.843	303.16	139.62	1.02	57.02	57.02	246.30	0.73	1.53	0.00	unsaturated	25.00	0.00	0.00	139.62	1.17	163.54	242.77	0.97	0.59	1.10	2.00	n.a.	2.00	NO
3.100	10.171	302.83	99.16	0.47	58.92	58.92	168.97	0.48	1.53	0.00	unsaturated	25.00	0.00	0.00	99.16	1.21	119.74	185.09	0.97	0.59	1.10	0.63	n.a.	2.00	NO
3.200	10.499	302.50	80.46	0.53	60.82	60.82	132.61	0.67	1.70	0.00	unsaturated	25.00	0.00	0.00	80.46	1.22	98.18	156.69	0.97	0.59	1.09	0.31	n.a.	2.00	NO
3.300	10.827	302.17	67.65	0.58	62.72	62.72	107.94	0.87	1.85	0.00	unsaturated	25.00	0.00	0.00	67.65	1.23	82.88	136.55	0.96	0.59	1.07	0.22	n.a.	2.00	NO
3.400	11.155	301.85	69.14	1.61	64.62	64.62	107.06	2.35	2.15	0.00	unsaturated	25.00	0.00	0.00	69.14	1.21	83.57	137.45	0.96	0.59	1.06	0.22	n.a.	2.00	NO
3.500	11.483	301.52	134.63	1.66	66.52	66.52	203.40	1.24	1.75	0.00	unsaturated	25.00	0.00	0.00	134.63	1.13	152.22	227.87	0.96	0.59	1.10	2.00	n.a.	2.00	NO
3.600	11.811	301.19	214.87	1.41	68.42	68.42	316.16	0.66	1.42	0.00	unsaturated	25.00	0.00	0.00	214.87	1.11	238.12	340.99	0.96	0.59	1.10	2.00	n.a.	2.00	NO
3.700	12.139	300.86	191.22	0.93	70.33	70.33	273.63	0.49	1.37	0.00	unsaturated	25.00	0.00	0.00	191.22	1.10	210.39	304.47	0.96	0.58	1.10	2.00	n.a.	2.00	NO
3.800	12.467	300.53	203.69	0.87	72.23	72.23	283.83	0.43	1.33	0.00	unsaturated	25.00	0.00	0.00	203.69	1.09	222.53	320.46	0.96	0.58	1.10	2.00	n.a.	2.00	NO
3.900	12.795	300.20	246.49	1.00	74.13	74.13	334.84	0.41	1.26	0.00	unsaturated	25.00	0.00	0.00	246.49	1.09	267.45	379.62	0.95	0.58	1.09	2.00	n.a.	2.00	NO
4.000	13.123	299.88	278.20	2.21	76.03	76.03	368.58	0.80	1.44	0.00	unsaturated	25.00	0.00	0.00	278.20	1.08	299.85	422.29	0.95	0.58	1.09	2.00	n.a.	2.00	NO
4.100	13.451	299.55	270.95	3.69	77.93	77.93	350.17	1.37	1.64	0.00	unsaturated	25.00	0.00	0.00	270.95	1.07	290.14	409.51	0.95	0.58	1.08	2.00	n.a.	2.00	NO
4.200	13.780	299.22	232.66	2.03	79.83	79.83	293.37	0.88	1.53	0.00	unsaturated	25.00	0.00	0.00	232.66	1.06	247.56	353.43	0.95	0.58	1.07	2.00	n.a.	2.00	NO
4.300	14.108	298.89	219.60	1.48	81.73	81.73	270.38	0.68	1.48	0.00	unsaturated	25.00	0.00	0.00	219.60	1.06	232.21	333.22	0.95	0.58	1.06	2.00	n.a.	2.00	NO
4.400	14.436	298.56	377.32	2.70	83.63	83.63	454.68	0.72	1.35	0.00	unsaturated	25.00	0.00	0.00	377.32	1.05	396.58	549.69	0.95	0.58	1.06	2.00	n.a.	2.00	NO
4.500	14.764	298.24	431.63	2.39	85.53	85.53	508.70	0.55	1.23	0.00	unsaturated	25.00	0.00	0.00	431.63	1.04	450.98	621.34	0.94	0.58	1.05	2.00	n.a.	2.00	NO
4.600	15.092	297.91	407.45	1.84	87.43	87.43	469.69	0.45	1.19	0.00	unsaturated	25.00	0.00	0.00	407.45	1.04	423.26	584.83	0.94	0.58	1.04	2.00	n.a.	2.00	NO
4.700	15.420	297.58	408.10	1.37	89.33	89.33	460.41	0.34	1.10	0.00	unsaturated	25.00	0.00	0.00	408.10	1.03	421.54	582.56	0.94	0.57	1.04	2.00	n.a.	2.00	NO
4.800	15.748	297.25	368.44	1.01	91.23	91.23	406.88	0.28	1.08	0.00	unsaturated	25.00	0.00	0.00	368.44	1.03	378.46	525.82	0.94	0.57	1.03	2.00	n.a.	2.00	NO
4.900	16.076	296.92	293.63	1.67	93.13	93.13	317.43	0.57	1.37	0.00	unsaturated	25.00	0.00	0.00	293.63	1.02	299.97	422.46	0.94	0.57	1.02	2.00	n.a.	2.00	NO
5.000	16.404	296.60	156.82	2.22	95.03	95.03	165.66	1.42	1.86	0.00	unsaturated	25.00	0.00	0.00	156.82	1.02	159.54	237.50	0.94	0.57	1.02	2.00	n.a.	2.00	NO
5.100	16.732	296.27	66.86	1.58	96.94	96.94	68.66	2.39	2.29	0.00	unsaturated	25.00	0.00	0.00	66.86	1.02	68.14	117.13	0.93	0.57	1.00	0.17	n.a.	2.00	NO

LIQUEFACTION TRIGGERING ANALYSIS
LOS ANGELES WATER WHEEL
LOS ANGELES, CALIFORNIA

Geosyntec consultants

5.200	17.060	295.94	106.80	0.66	98.84	98.84	108.13	0.63	1.76	0.00	unsaturated	25.00	0.00	0.00	106.80	1.01	107.66	169.18	0.93	0.57	1.00	0.40	n.a.	2.00	NO
5.300	17.388	295.61	211.49	0.57	100.74	100.74	211.05	0.27	1.32	0.00	unsaturated	25.00	0.00	0.00	211.49	1.00	211.64	306.12	0.93	0.57	1.00	2.00	n.a.	2.00	NO
5.400	17.717	295.28	229.17	1.52	102.64	102.64	224.51	0.66	1.53	0.00	unsaturated	25.00	0.00	0.00	229.17	1.00	228.20	327.93	0.93	0.57	1.00	2.00	n.a.	2.00	NO
5.500	18.045	294.96	261.75	2.09	104.54	104.54	251.89	0.80	1.55	0.00	unsaturated	25.00	0.00	0.00	261.75	0.99	259.38	369.00	0.93	0.57	0.99	2.00	n.a.	2.00	NO
5.600	18.373	294.63	247.13	2.11	106.44	106.44	233.50	0.86	1.59	0.00	unsaturated	25.00	0.00	0.00	247.13	0.99	243.73	348.39	0.92	0.56	0.98	2.00	n.a.	2.00	NO
5.700	18.701	294.30	219.46	1.07	108.34	108.34	203.60	0.49	1.48	0.00	unsaturated	25.00	0.00	0.00	219.46	0.98	215.44	311.13	0.92	0.56	0.98	2.00	n.a.	2.00	NO
5.800	19.029	293.97	195.93	0.57	110.24	110.24	178.51	0.29	1.40	0.00	unsaturated	25.00	0.00	0.00	195.93	0.98	191.46	279.55	0.92	0.56	0.97	2.00	n.a.	2.00	NO
5.900	19.357	293.64	161.63	0.43	112.14	112.14	144.57	0.27	1.46	0.00	unsaturated	25.00	0.00	0.00	161.63	0.97	156.85	233.96	0.92	0.56	0.97	2.00	n.a.	2.00	NO
6.000	19.685	293.31	100.71	0.35	114.04	113.49	88.19	0.35	1.71	0.00		25.00	0.00	0.00	100.71	0.95	95.97	153.78	0.92	0.56	0.98	0.29	0.36	0.64	YES
6.100	20.013	292.99	56.14	0.34	115.94	114.41	47.90	0.62	2.06	0.00		25.00	0.00	0.00	56.14	0.94	52.35	96.33	0.91	0.57	0.99	0.14	0.17	0.30	YES
6.200	20.341	292.66	39.85	0.37	117.84	115.33	33.16	0.97	2.29	0.00		25.00	0.00	0.00	39.85	0.93	36.57	75.55	0.91	0.57	0.99	0.11	0.13	0.23	YES
6.300	20.669	292.33	58.54	0.30	119.74	116.25	48.38	0.52	2.02	0.00		25.00	0.00	0.00	58.54	0.93	53.74	98.17	0.91	0.57	0.99	0.14	0.17	0.30	YES
6.400	20.997	292.00	65.46	0.23	121.64	117.17	53.35	0.36	1.91	0.00		25.00	0.00	0.00	65.46	0.93	59.82	106.17	0.91	0.58	0.98	0.15	0.19	0.33	YES
6.500	21.325	291.67	67.08	0.18	123.54	118.09	53.84	0.27	1.86	0.00		25.00	0.00	0.00	67.08	0.93	60.88	107.57	0.91	0.58	0.98	0.16	0.19	0.33	YES
6.600	21.654	291.35	66.95	0.53	125.45	119.01	52.90	0.80	2.08	0.00		25.00	0.00	0.00	66.95	0.92	60.29	106.79	0.91	0.58	0.98	0.15	0.19	0.33	YES
6.700	21.982	291.02	77.81	0.77	127.35	119.93	60.71	1.01	2.08	0.00		25.00	0.00	0.00	77.81	0.92	69.98	119.55	0.90	0.59	0.98	0.18	0.22	0.38	YES
6.800	22.310	290.69	67.44	0.62	129.25	120.85	51.70	0.94	2.12	0.00		25.00	0.00	0.00	67.44	0.92	59.84	106.20	0.90	0.59	0.98	0.15	0.19	0.32	YES
6.900	22.638	290.36	87.46	0.53	131.15	121.77	66.36	0.61	1.93	0.00		25.00	0.00	0.00	87.46	0.92	78.01	130.14	0.90	0.59	0.97	0.20	0.25	0.42	YES
7.000	22.966	290.03	210.12	1.40	133.05	122.68	158.51	0.67	1.65	0.00		25.00	0.00	0.00	210.12	0.95	195.39	284.72	0.90	0.59	0.94	2.00	2.00	2.00	NO
7.100	23.294	289.71	268.27	1.40	134.95	123.60	199.78	0.52	1.50	0.00		25.00	0.00	0.00	268.27	0.95	248.52	354.70	0.90	0.60	0.94	2.00	2.00	2.00	NO
7.200	23.622	289.38	284.02	0.81	136.85	124.52	208.62	0.28	1.33	0.00		25.00	0.00	0.00	284.02	0.95	262.15	372.64	0.89	0.60	0.94	2.00	2.00	2.00	NO
7.300	23.950	289.05	330.83	0.78	138.75	125.44	239.82	0.24	1.24	0.00		25.00	0.00	0.00	330.83	0.94	304.25	428.09	0.89	0.60	0.93	2.00	2.00	2.00	NO
7.400	24.278	288.72	358.22	1.14	140.65	126.36	256.23	0.32	1.28	0.00		25.00	0.00	0.00	358.22	0.94	328.25	459.70	0.89	0.61	0.93	2.00	2.00	2.00	NO
7.500	24.606	288.39	365.08	1.22	142.55	127.28	257.66	0.34	1.30	0.00		25.00	0.00	0.00	365.08	0.94	333.35	466.42	0.89	0.61	0.93	2.00	2.00	2.00	NO
7.600	24.934	288.07	394.11	0.93	144.45	128.20	274.56	0.24	1.19	0.00		25.00	0.00	0.00	394.11	0.94	358.61	499.68	0.89	0.61	0.93	2.00	2.00	2.00	NO
7.700	25.262	287.74	418.05	1.27	146.35	129.12	287.50	0.30	1.23	0.00		25.00	0.00	0.00	418.05	0.94	379.08	526.65	0.88	0.61	0.93	2.00	2.00	2.00	NO
7.800	25.591	287.41	443.04	1.14	148.25	130.04	300.83	0.26	1.17	0.00		25.00	0.00	0.00	443.04	0.94	400.38	554.69	0.88	0.61	0.92	2.00	2.00	2.00	NO
7.900	25.919	287.08	434.52	1.43	150.15	130.96	291.28	0.33	1.25	0.00		25.00	0.00	0.00	434.52	0.93	391.36	542.82	0.88	0.62	0.92	2.00	2.00	2.00	NO
8.000	26.247	286.75	397.00	1.23	152.06	131.88	262.70	0.31	1.27	0.00		25.00	0.00	0.00	397.00	0.93	356.38	496.75	0.88	0.62	0.92	2.00	2.00	2.00	NO
8.100	26.575	286.43	348.49	1.67	153.96	132.80	227.62	0.48	1.43	0.00		25.00	0.00	0.00	348.49	0.93	311.81	438.05	0.88	0.62	0.92	2.00	2.00	2.00	NO
8.200	26.903	286.10	347.58	0.90	155.86	133.72	224.24	0.26	1.29	0.00		25.00	0.00	0.00	347.58	0.93	309.99	435.66	0.87	0.62	0.92	2.00	2.00	2.00	NO
8.300	27.231	285.77	301.49	0.76	157.76	134.64	192.02	0.25	1.34	0.00		25.00	0.00	0.00	301.49	0.93	268.02	380.38	0.87	0.62	0.91	2.00	2.00	2.00	NO
8.400	27.559	285.44	255.64	0.69	159.66	135.56	160.72	0.27	1.42	0.00		25.00	0.00	0.00	255.64	0.93	226.54	325.75	0.87	0.63	0.91	2.00	2.00	2.00	NO
8.500	27.887	285.11	209.13	2.09	161.56	136.48	129.74	1.01	1.83	0.00		25.00	0.00	0.00	209.13	0.92	184.76	270.72	0.87	0.63	0.91	2.00	2.00	2.00	NO
8.600	28.215	284.78	201.54	4.60	163.46	137.40	123.53	2.30	2.10	0.00		25.00	0.00	0.00	201.54	0.92	177.50	261.16	0.87	0.63	0.91	2.00	2.00	2.00	NO
8.700	28.543	284.46	195.30	2.04	165.36	138.32	118.29	1.05	1.87	0.00		25.00	0.00	0.00	195.30	0.92	171.40	253.13	0.86	0.63	0.91	2.00	2.00	2.00	NO
8.800	28.871	284.13	115.06	1.72	167.26	139.24	68.48	1.51	2.15	0.00		25.00	0.00	0.00	115.06	0.88	93.97	151.15	0.86	0.63	0.95	0.28	0.33	0.53	YES
8.900	29.199	283.80	135.64	1.50	169.16	140.16	79.98	1.12	2.02	0.00		25.00	0.00	0.00	135.64	0.89	112.44	175.47	0.86	0.63	0.93	0.47	0.56	0.88	YES
9.000	29.528	283.47	106.59	0.95	171.06	141.08	61.93	0.91	2.05	0.00		25.00	0.00	0.00	106.59	0.87	85.41	139.88	0.86	0.64	0.95	0.23	0.28	0.44	YES
9.100	29.856	283.14	74.72	0.55	172.96	142.00	42.63	0.76	2.14	0.00		25.00	0.00	0.00	74.72	0.85	57.35	102.92	0.86	0.64	0.96	0.15	0.18	0.28	YES
9.200	30.184	282.82	53.41	0.80	174.86	142.92	29.85	1.56	2.44	0.00		25.00	0.00	0.00	53.41	0.83	39.54	79.47	0.85	0.64	0.97	0.11	0.14	0.22	YES
9.300	30.512	282.49	57.90	1.13	176.76	143.84	32.08	2.01	2.49	0.00		25.00	0.00	0.00	57.90	0.83	42.89	83.87	0.85	0.64	0.97	0.12	0.14	0.23	YES
9.400	30.840	282.16	86.62	1.85	178.66	144.76	47.96	2.18	2.37	0.00		25.00	0.00	0.00	86.62	0.85	66.36	114.79	0.85	0.64	0.96	0.17	0.20	0.32	YES
9.500	31.168	281.83	180.98	1.61	180.57	145.68	100.23	0.90	1.88	0.00		25.00	0.00	0.00	180.98	0.90	152.60	228.36	0.85	0.64	0.89	2.00	2.00	2.00	NO
9.600	31.496	281.50	286.36	1.80	182.47	146.60	157.51	0.63	1.63	0.00		25.00	0.00	0.00	286.36	0.91	244.99	350.04	0.84	0.64	0.89	2.00	2.00	2.00	NO
9.700	31.824	281.18	335.73	0.96	184.37	147.52	182.92	0.29	1.38	0.00		25.00	0.00	0.00	335.73	0.90	286.44	404.64	0.84	0.64	0.89	2.00	2.00	2.00	NO
9.800	32.152	280.85	316.25	0.99	186.27	148.44	170.48	0.31	1.43	0.00		25.00	0.00	0.00	316.25	0.90	269.10	381.79	0.84	0.64	0.88	2.00	2.00	2.00	NO
9.900	32.480	280.52	356.17	1.41	188.17	149.36	190.18	0.40	1.45	0.00		25.00	0.00	0.00	356.17	0.90	302.25	425.46	0.84	0.65	0.88	2.00	2.00	2.00	NO
10.000	32.808	280.19	417.98	0.91	190.07	150.28	221.11	0.22	1.26	0.00		25.00	0.00	0.00	417.98	0.90	353.76	493.30	0.84	0.65	0.88	2.00	2.00	2.00	NO
10.100	33.136	279.86	400.81	1.15	191.97	151.20	209.88	0.29	1.33	0.00		25.00	0.00	0.00	400.81	0.90	338.34	472.99	0.83	0.65	0.88	2.00	2.00	2.00	NO
10.200	33.465	279.54	357.63	1.49	193.87	152.11	185.31	0.42	1.47	0.00		25.00	0.00	0.00	357.63	0.90	301.11	423.95	0.83	0.65	0.88	2.00	2.00	2.00	NO
10.300	33.793	279.21	332.88	0.76	195.77	153.03	170.73	0.23	1.37	0.00		25.00	0.00	0.00	332.88	0.90	279.55	395.56	0.83	0.65	0.88	2.00	2.00	2.00	NO
10.400	34.121	278.88	313.89	0.25	197.67	153.95	159.38	0.08	1.27	0.00		25.00	0.00	0.00	313.89	0.89	262.93	373.67	0.83	0.65	0.87	2.00	2.00	2.00	NO
10.500	34.449	278.55	282.26	0.27	199.57	154.87	141.85	0.10	1.33	0.00		25.00	0.00	0.00	282.26	0.89	235.84	338.00	0.83	0.65	0.87	2.00	2.00	2.00	NO
10.600	34.777	278.22	291.80	0.29	201.47	155.79	145.28	0.10	1.33	0.00		25.00	0.00	0.00	291.80	0.89	243.20	347.69	0.82	0.65	0.87	2.00	2.00	2.00	NO
10.700	35.105	277.90	309.81	0.30	203.37	156.71	152.86	0.10	1.30	0.00		25.00	0.00	0.00	309.81	0.89	257.57	366.61	0.82	0.65	0.87	2.00	2.00	2.00	NO
10.800	35.433	277.57	297.34	0.43	205.27	157.63	145.30	0.14	1.36	0.00		25.00	0.00	0.00	297.34	0.89	246.60	352.16	0.82	0.65	0.87	2.00	2.00	2.00	NO
10.900	35.761	277.24	285.77	0.52	207.17	158.55	138.32	0.18	1.41	0.00		25.00	0.00	0.00	285.77	0.89	236.43	338.77	0.82	0.65	0.86	2.00	2.00	2.00	NO
11.000	36.089	276.91	364.05	0.54	209.08	159.47	174.87	0.15	1.29	0.00		25.00	0.00	0.00	364.05	0.89	300.47	423.11	0.82	0.65	0.86	2.00	2.00	2.00	NO
11.100	36.417	276.58	389.65	0.90	210.98	160.39	185.54	0.23	1.34	0.00		25.00	0.00	0.00	389.65	0.89	320.83	449.93	0.81	0.65	0.86	2.00	2.00	2.00	NO
11.200	36.745	276.25	361.53	0.95	212.88	161.31	170.53	0.26	1.39	0.00		25.00	0.00	0.00	361.53	0.88	296.97	418.51	0.81	0.65	0.86	2.00	2.00	2.00	NO
11.300	37.073	275.93	322.90	0.76	214.78	162.23	151.00	0.24	1.42	0.00		25.00	0.00	0.00	322.90	0.88	264.69	375.99	0.81	0.65	0.86	2.00	2.00	2.00	NO
11.400	37.402	275.60	298.89	0.59	216.68	163.15	139.09	0.20	1.42	0.00		25.00	0.00	0.00	298.89	0.88	244.74	349.71	0.81	0.66	0.86	2.00	2.00	2.00	NO
11.500	37.730	275.27	286.24	0.60	218.58	164.07	132.59	0.21	1.45	0.00		25.00	0.00	0.00	286.24	0.88	234.11	335.72	0.81	0.66	0.85	2.00	2.00	2.00	NO
11.600	38.058	274.94	291.19	0.57	220.48	164.99	134.32	0.20	1.44	0.00		25.00	0.00	0.00	291.19	0.88	237.90	340.70	0.80	0.66	0.85	2.00	2.00	2.00	NO
11.700	38.386	274.61	287.40	0.96	222.38	165.91	131.99	0.34	1.54	0.00		25.00	0.00	0.00	287.40	0.88	234.53	336.27	0.80	0.66	0.85	2.00	2.00	2.00	NO
11.800	38.714	274.29	306.15	1.08	224.28	166.83	140.07	0.35	1.53	0.00		25.00	0.00	0.00	306.15	0.88	249.56	356.07	0.80	0.66	0.85	2.00	2.00	2.00	NO
11.900	39.042	273.96	356.63	1.34	226.18	167.75	162.64	0.38	1.49	0.00		25.00	0.00	0.00	356.63	0.87	290.39	409.84	0.80	0.66	0.85	2.00	2.00	2.00	NO
12.000	39.370	273.63	371.35	2.13	228.08	168.67	168.68	0.58	1.58	0.00		25.00	0.00	0.00	371.35	0.87	302.04	425.18	0.79	0.66	0.85	2.00	2.00	2.00	NO
12.100	39.698	273.30	391.03	2.34	229.98	169.59	176.93	0.60	1.58	0.00		25.00	0.00	0.00	391.03	0.87	317.70	445.81	0.79	0.66	0.84	2.00	2.00	2.00	NO
12.200	40.026	272.97	409.58	2.34	231.88	170.51	184.60	0.57	1.55	0.00		25.00	0.00	0.00	409.58	0.87	332.41	465.18	0.79	0.66	0.84	2.00	2.00	2.00	NO
12.300	40.354	272.65	416.95	1.53	233.78	171.43	187.16	0.37	1.43	0.00		25.00	0.00	0.00	416.95	0.87	338.02	472.57	0.79	0.66	0.84	2.00	2.00	2.00	NO

LIQUEFACTION TRIGGERING ANALYSIS
LOS ANGELES WATER WHEEL
LOS ANGELES, CALIFORNIA

Geosyntec consultants

12.400	40.682	272.32	418.56	0.96	235.69	172.35	187.11	0.23	1.33	0.00		25.00	0.00	0.00	418.56	0.87	338.96	473.81	0.79	0.66	0.84	2.00	2.00	2.00	NO
12.500	41.010	271.99	434.12	1.12	237.59	173.27	193.31	0.26	1.34	0.00		25.00	0.00	0.00	434.12	0.87	351.18	489.90	0.78	0.66	0.84	2.00	2.00	2.00	NO
12.600	41.339	271.66	487.25	1.61	239.49	174.19	216.20	0.33	1.36	0.00		25.00	0.00	0.00	487.25	0.87	393.74	545.95	0.78	0.66	0.84	2.00	2.00	2.00	NO
12.700	41.667	271.33	446.46	1.91	241.39	175.11	197.21	0.43	1.45	0.00		25.00	0.00	0.00	446.46	0.86	360.40	502.03	0.78	0.66	0.83	2.00	2.00	2.00	NO
12.800	41.995	271.01	453.79	1.36	243.29	176.03	199.65	0.30	1.36	0.00		25.00	0.00	0.00	453.79	0.86	365.92	509.31	0.78	0.66	0.83	2.00	2.00	2.00	NO
12.900	42.323	270.68	510.23	1.10	245.19	176.95	223.70	0.22	1.25	0.00		25.00	0.00	0.00	510.23	0.86	410.99	568.67	0.78	0.66	0.83	2.00	2.00	2.00	NO
13.000	42.651	270.35	501.54	1.20	247.09	177.87	218.98	0.24	1.28	0.00		25.00	0.00	0.00	501.54	0.86	403.57	558.89	0.77	0.66	0.83	2.00	2.00	2.00	NO
13.100	42.979	270.02	495.60	1.43	248.99	178.79	215.51	0.29	1.33	0.00		25.00	0.00	0.00	495.60	0.86	398.37	552.05	0.77	0.66	0.83	2.00	2.00	2.00	NO
13.200	43.307	269.69	506.33	2.02	250.89	179.71	219.31	0.40	1.40	0.00		25.00	0.00	0.00	506.33	0.86	406.57	562.84	0.77	0.66	0.83	2.00	2.00	2.00	NO
13.300	43.635	269.36	533.21	1.81	252.79	180.63	230.10	0.34	1.34	0.00		25.00	0.00	0.00	533.21	0.86	427.71	590.69	0.77	0.66	0.83	2.00	2.00	2.00	NO
13.400	43.963	269.04	486.47	1.25	254.69	181.54	209.00	0.26	1.31	0.00		25.00	0.00	0.00	486.47	0.86	389.81	540.77	0.77	0.66	0.82	2.00	2.00	2.00	NO
13.500	44.291	268.71	538.33	0.89	256.59	182.46	230.48	0.17	1.19	0.00		25.00	0.00	0.00	538.33	0.86	430.92	594.91	0.76	0.66	0.82	2.00	2.00	2.00	NO
13.600	44.619	268.38	588.49	2.02	258.49	183.38	251.07	0.35	1.31	0.00		25.00	0.00	0.00	588.49	0.85	470.59	647.16	0.76	0.66	0.82	2.00	2.00	2.00	NO
13.700	44.948	268.05	570.10	1.72	260.39	184.30	242.23	0.30	1.29	0.00		25.00	0.00	0.00	570.10	0.85	455.41	627.17	0.76	0.66	0.82	2.00	2.00	2.00	NO
13.800	45.276	267.72	564.88	1.46	262.29	185.22	239.07	0.26	1.26	0.00		25.00	0.00	0.00	564.88	0.85	450.78	621.07	0.76	0.66	0.82	2.00	2.00	2.00	NO
13.900	45.604	267.40	600.84	1.56	264.20	186.14	253.37	0.26	1.24	0.00		25.00	0.00	0.00	600.84	0.85	478.99	658.22	0.76	0.65	0.82	2.00	2.00	2.00	NO
14.000	45.932	267.07	618.13	1.13	266.10	187.06	259.68	0.18	1.16	0.00		25.00	0.00	0.00	618.13	0.85	492.27	675.71	0.75	0.65	0.81	2.00	2.00	2.00	NO
14.100	46.260	266.74	574.07	0.97	268.00	187.98	240.16	0.17	1.18	0.00		25.00	0.00	0.00	574.07	0.85	456.72	628.89	0.75	0.65	0.81	2.00	2.00	2.00	NO
14.200	46.588	266.41	362.00	2.60	269.90	188.90	150.45	0.72	1.68	0.00		25.00	0.00	0.00	362.00	0.85	287.71	406.31	0.75	0.65	0.81	2.00	2.00	2.00	NO
14.300	46.916	266.08	178.88	2.28	271.80	189.82	73.49	1.29	2.08	0.00		25.00	0.00	0.00	178.88	0.82	134.88	205.03	0.75	0.65	0.82	1.45	1.52	2.00	NO
14.400	47.244	265.76	431.35	1.07	273.70	190.74	178.11	0.25	1.37	0.00		25.00	0.00	0.00	431.35	0.85	342.14	478.00	0.75	0.65	0.81	2.00	2.00	2.00	NO
14.500	47.572	265.43	522.82	1.39	275.60	191.66	215.30	0.27	1.31	0.00		25.00	0.00	0.00	522.82	0.84	414.28	573.01	0.74	0.65	0.81	2.00	2.00	2.00	NO
14.600	47.900	265.10	548.95	1.48	277.50	192.58	225.26	0.27	1.29	0.00		25.00	0.00	0.00	548.95	0.84	434.56	599.71	0.74	0.65	0.81	2.00	2.00	2.00	NO
14.700	48.228	264.77	550.12	1.90	279.40	193.50	224.88	0.35	1.35	0.00		25.00	0.00	0.00	550.12	0.84	435.05	600.35	0.74	0.65	0.80	2.00	2.00	2.00	NO
14.800	48.556	264.44	536.68	1.88	281.30	194.42	218.54	0.35	1.37	0.00		25.00	0.00	0.00	536.68	0.84	424.01	585.81	0.74	0.65	0.80	2.00	2.00	2.00	NO
14.900	48.885	264.12	520.07	1.84	283.20	195.34	210.94	0.36	1.38	0.00		25.00	0.00	0.00	520.07	0.84	410.48	567.99	0.73	0.65	0.80	2.00	2.00	2.00	NO
15.000	49.213	263.79	517.99	1.88	285.10	196.26	209.31	0.37	1.39	0.00		25.00	0.00	0.00	517.99	0.84	408.44	565.30	0.73	0.65	0.80	2.00	2.00	2.00	NO
15.100	49.541	263.46	523.89	1.28	287.00	197.18	210.92	0.25	1.30	0.00		25.00	0.00	0.00	523.89	0.84	412.69	570.91	0.73	0.65	0.80	2.00	2.00	2.00	NO
15.200	49.869	263.13	567.41	1.10	288.90	198.10	227.69	0.19	1.22	0.00		25.00	0.00	0.00	567.41	0.84	446.54	615.49	0.73	0.65	0.80	2.00	2.00	2.00	NO
15.300	50.197	262.80	552.74	1.02	290.81	199.02	220.95	0.19	1.23	0.00		25.00	0.00	0.00	552.74	0.84	434.57	599.72	0.73	0.65	0.80	2.00	2.00	2.00	NO
15.400	50.525	262.48	521.70	1.87	292.71	199.94	207.71	0.36	1.39	0.00		25.00	0.00	0.00	521.70	0.84	409.77	567.06	0.72	0.65	0.79	2.00	2.00	2.00	NO
15.500	50.853	262.15	520.61	2.87	294.61	200.86	206.52	0.55	1.50	0.00		25.00	0.00	0.00	520.61	0.83	408.52	565.42	0.72	0.65	0.79	2.00	2.00	2.00	NO
15.600	51.181	261.82	510.89	2.17	296.51	201.78	201.90	0.43	1.44	0.00		25.00	0.00	0.00	510.89	0.83	400.51	554.87	0.72	0.65	0.79	2.00	2.00	2.00	NO
15.700	51.509	261.49	489.62	2.30	298.41	202.70	192.74	0.47	1.49	0.00		25.00	0.00	0.00	489.62	0.83	383.47	532.43	0.72	0.65	0.79	2.00	2.00	2.00	NO
15.800	51.837	261.16	489.20	3.09	300.31	203.62	191.87	0.64	1.57	0.00		25.00	0.00	0.00	489.20	0.83	382.78	531.51	0.72	0.65	0.79	2.00	2.00	2.00	NO
15.900	52.165	260.83	489.71	2.90	302.21	204.54	191.38	0.60	1.55	0.00		25.00	0.00	0.00	489.71	0.83	382.82	531.57	0.72	0.65	0.79	2.00	2.00	2.00	NO
16.000	52.493	260.51	474.57	3.37	304.11	205.46	184.76	0.71	1.61	0.00		25.00	0.00	0.00	474.57	0.83	370.63	515.51	0.71	0.64	0.79	2.00	1.99	2.00	NO
16.100	52.822	260.18	461.50	2.74	306.01	206.38	178.99	0.60	1.57	0.00		25.00	0.00	0.00	461.50	0.83	360.09	501.63	0.71	0.64	0.79	2.00	1.99	2.00	NO
16.200	53.150	259.85	468.27	3.03	307.91	207.30	180.98	0.65	1.59	0.00		25.00	0.00	0.00	468.27	0.83	365.03	508.14	0.71	0.64	0.78	2.00	1.99	2.00	NO
16.300	53.478	259.52	484.71	2.60	309.81	208.22	186.71	0.54	1.53	0.00		25.00	0.00	0.00	484.71	0.83	377.49	524.54	0.71	0.64	0.78	2.00	1.98	2.00	NO
16.400	53.806	259.19	505.02	2.49	311.71	209.14	193.89	0.50	1.50	0.00		25.00	0.00	0.00	505.02	0.83	392.94	544.90	0.71	0.64	0.78	2.00	1.98	2.00	NO
16.500	54.134	258.87	506.44	2.54	313.61	210.06	193.75	0.50	1.50	0.00		25.00	0.00	0.00	506.44	0.82	393.68	545.88	0.70	0.64	0.78	2.00	1.98	2.00	NO
16.600	54.462	258.54	531.40	1.36	315.51	210.97	202.64	0.26	1.32	0.00		25.00	0.00	0.00	531.40	0.82	412.70	570.93	0.70	0.64	0.78	2.00	1.97	2.00	NO
16.700	54.790	258.21	529.00	1.33	317.41	211.89	201.01	0.25	1.32	0.00		25.00	0.00	0.00	529.00	0.82	410.46	567.97	0.70	0.64	0.78	2.00	1.97	2.00	NO
16.800	55.118	257.88	537.16	1.17	319.32	212.81	203.42	0.22	1.29	0.00		25.00	0.00	0.00	537.16	0.82	416.41	575.81	0.70	0.64	0.78	2.00	1.97	2.00	NO
16.900	55.446	257.55	540.23	3.51	321.22	213.73	203.87	0.65	1.56	0.00		25.00	0.00	0.00	540.23	0.82	418.41	578.44	0.70	0.64	0.77	2.00	1.96	2.00	NO
17.000	55.774	257.23	540.71	7.46	323.12	214.65	203.34	1.39	1.79	0.00		25.00	0.00	0.00	540.71	0.82	418.40	578.42	0.69	0.64	0.77	2.00	1.96	2.00	NO
17.100	56.102	256.90	479.63	4.76	325.02	215.57	179.61	1.00	1.72	0.00		25.00	0.00	0.00	479.63	0.82	370.80	515.73	0.69	0.64	0.77	2.00	1.96	2.00	NO
17.200	56.430	256.57	481.22	2.04	326.92	216.49	179.59	0.43	1.48	0.00		25.00	0.00	0.00	481.22	0.82	371.69	516.91	0.69	0.64	0.77	2.00	1.95	2.00	NO
17.300	56.759	256.24	466.45	2.11	328.82	217.41	173.43	0.46	1.51	0.00		25.00	0.00	0.00	466.45	0.82	359.95	501.45	0.69	0.64	0.77	2.00	1.95	2.00	NO
17.400	57.087	255.91	469.31	2.21	330.72	218.33	173.91	0.47	1.52	0.00		25.00	0.00	0.00	469.31	0.82	361.84	503.94	0.69	0.64	0.77	2.00	1.95	2.00	NO
17.500	57.415	255.59	477.80	1.88	332.62	219.25	176.47	0.40	1.47	0.00		25.00	0.00	0.00	477.80	0.82	368.06	512.12	0.68	0.63	0.77	2.00	1.94	2.00	NO
17.600	57.743	255.26	479.40	1.73	334.52	220.17	176.46	0.36	1.45	0.00		25.00	0.00	0.00	479.40	0.81	368.96	513.32	0.68	0.63	0.77	2.00	1.94	2.00	NO
17.700	58.071	254.93	458.57	1.98	336.42	221.09	168.17	0.44	1.51	0.00		25.00	0.00	0.00	458.57	0.81	352.62	491.79	0.68	0.63	0.76	2.00	1.94	2.00	NO
17.800	58.399	254.60	411.45	3.02	338.32	222.01	150.25	0.74	1.69	0.00		25.00	0.00	0.00	411.45	0.81	316.10	443.70	0.68	0.63	0.76	2.00	1.93	2.00	NO
17.900	58.727	254.27	394.23	3.65	340.22	222.93	143.42	0.93	1.77	0.00		25.00	0.00	0.00	394.23	0.81	302.60	425.92	0.68	0.63	0.76	2.00	1.93	2.00	NO
18.000	59.055	253.94	376.95	3.87	342.12	223.85	136.61	1.04	1.82	0.00		25.00	0.00	0.00	376.95	0.81	289.08	408.12	0.68	0.63	0.76	2.00	1.93	2.00	NO
18.100	59.383	253.62	379.43	3.87	344.02	224.77	137.06	1.03	1.82	0.00		25.00	0.00	0.00	379.43	0.81	290.73	410.29	0.67	0.63	0.76	2.00	1.93	2.00	NO
18.200	59.711	253.29	389.07	3.36	345.93	225.69	140.10	0.87	1.76	0.00		25.00	0.00	0.00	389.07	0.81	297.86	419.67	0.67	0.63	0.76	2.00	1.92	2.00	NO
18.300	60.039	252.96	366.53	3.50	347.83	226.61	131.47	0.96	1.81	0.00		25.00	0.00	0.00	366.53	0.81	280.36	396.62	0.67	0.63	0.76	2.00	1.92	2.00	NO
18.400	60.367	252.63	381.38	2.79	349.73	227.53	136.39	0.74	1.72	0.00		25.00	0.00	0.00	381.38	0.81	291.46	411.25	0.67	0.63	0.76	2.00	1.92	2.00	NO
18.500	60.696	252.30	376.20	2.88	351.63	228.45	134.07	0.77	1.74	0.00		25.00	0.00	0.00	376.20	0.81	287.26	405.71	0.67	0.63	0.75	2.00	1.91	2.00	NO
18.600	61.024	251.98	420.38	3.06	353.53	229.37	149.47	0.73	1.69	0.00		25.00	0.00	0.00	420.38	0.81	320.71	449.77	0.66	0.63	0.75	2.00	1.91	2.00	NO
18.700	61.352	251.65	461.13	3.64	355.43	230.29	163.54	0.79	1.68	0.00		25.00	0.00	0.00	461.13	0.80	351.50	490.32	0.66	0.62	0.75	2.00	1.91	2.00	NO
18.800	61.680	251.32	455.32	4.22	357.33	231.21	160.93	0.93	1.74	0.00		25.00	0.00	0.00	455.32	0.80	346.78	484.10	0.66	0.62	0.75	2.00	1.90	2.00	NO
18.900	62.008	250.99	403.99	3.90	359.23	232.13	142.18	0.97	1.79	0.00		25.00	0.00	0.00	403.99	0.80	307.42	432.26	0.66	0.62	0.75	2.00	1.90	2.00	NO
19.000	62.336	250.66	418.76	2.75	361.13	233.05	146.94	0.66	1.67	0.00		25.00	0.00	0.00	418.76	0.80	318.38	446.71	0.66	0.62	0.75	2.00	1.90	2.00	NO
19.100	62.664	250.34	493.93	2.62	363.03	233.97	172.98	0.53	1.55	0.00		25.00	0.00	0.00	493.93	0.80	375.22	521.56	0.66	0.62	0.75	2.00	1.89	2.00	NO
19.200	62.992	250.01	503.30	3.82	364.93	234.89	175.72	0.76	1.65	0.00		25.00	0.00	0.00	503.30	0.80	382.02	530.51	0.65	0.62	0.75	2.00	1.89	2.00	NO
19.300	63.320	249.68	542.45	3.61	366.83	235.81	188.87	0.67	1.59	0.00		25.00	0.00	0.00	542.45	0.80	411.39	569.19	0.65	0.62	0.75	2.00	1.89	2.00	NO
19.400	63.648	249.35	493.18	2.32	368.73	236.73	171.05	0.47	1.53	0.00		25.00	0.00	0.00	493.18	0.80	373.70	519.56	0.65	0.62	0.74	2.00	1.89	2.00	NO
19.500	63.976	249.02	560.91	2.27	370.63	237.65	194.09	0.41	1.44	0.00		25.00	0.00	0.00	560.91	0.80	424.67	586.69	0.65	0.62	0.74	2.00	1.88	2.00	NO

LIQUEFACTION TRIGGERING ANALYSIS
LOS ANGELES WATER WHEEL
LOS ANGELES, CALIFORNIA

Geosyntec consultants

Input Parameters

Boring Designation	CPTu-3 (settlement)
Ground Surface Elevation (ft)	313
Peak Ground Acceleration (g)	0.94
Earthquake Magnitude, M=	6.6
Water Table Depth (m)	5.94
Historic High Water Table Elevation =	293.5
Unit Weight above Water Table (pcf)	120.9
Unit Weight below Water Table (pcf)	127.2

Intermediate Parameters

Unit Weight above Water Table (kN/m^3)	19.0
Unit Weight below Water Table (kN/m^3)	20.0
Magnitude scaling factor, MSF	1.27

Legend

= Manual Input
= Calculated Value
= Calculated Factor of Safety against Liquefaction is over 1.0
= Calculated Factor of Safety against Liquefaction is 1.0 or Lower
red text = Manual input cell with formula used as input (and subject to change)
= Cell value not relevant for this sheet

NOTE: There is a significant difference between field water table elevation and assumed historic high water elevation (i.e., about 18 ft). qc1N should be calculated for field conditions (using "field" sheet), then used to calculate FS for historic high conditions (using "high" sheet).

Depth (m b.g.s.)	Depth (ft b.g.s.)	Elevation (ft)	Tip q_{cN}	F_{sN}	σ_{vc} (kPa)	σ_{vc}' (kPa)	Q	F	I_c	Layer	Flag "clay" or "Unsaturated"	Fines (%)	Interpreted q_{c1N} near interfaces	Thin layer factor	Interpreted q_{c1N}	C_N	q_{c1N}	qcN1-cs	Stress reduc. coeff, r_d	CSR	K_σ for sand	CRR for M=7.5 & σ_{vc}'=1 atm	CRR	Factor of Safety	Limiting shear strain γ_{lim}	Parameter F_α	Maximum shear strain γ_{max}	ΔH_i (m)	ΔLDI_i (m)	Vertical reconsol. Strain ε_c	ΔS_i (m)
0.100	0.328	312.67	0.00	0.00	1.90	1.90	-1.00	0.00	#NUM!	0.00	unsaturated	25.00	0.00	0.00	0.00	1.70	0.00	27.39	1.01	0.61	1.10	0.06	n.a.	2.00							
0.200	0.656	314.34	0.00	0.00	3.80	3.80	-1.00	0.00	#NUM!	0.00	unsaturated	25.00	0.00	0.00	0.00	1.70	0.00	27.39	1.01	0.61	1.10	0.06	n.a.	2.00							
0.300	0.984	312.02	0.00	0.00	5.70	5.70	-1.00	0.00	#NUM!	0.00	unsaturated	25.00	0.00	0.00	0.00	1.70	0.00	27.39	1.00	0.61	1.10	0.06	n.a.	2.00							
0.400	1.312	311.69	0.00	0.00	7.60	7.60	-1.00	0.00	#NUM!	0.00	unsaturated	25.00	0.00	0.00	0.00	1.70	0.00	27.39	1.00	0.61	1.10	0.06	n.a.	2.00							
0.500	1.640	311.36	0.00	0.00	9.50	9.50	-1.00	0.00	#NUM!	0.00	unsaturated	25.00	0.00	0.00	0.00	1.70	0.00	27.39	1.00	0.61	1.10	0.06	n.a.	2.00							
0.600	1.969	311.03	0.00	0.00	11.40	11.40	-1.00	0.00	#NUM!	0.00	unsaturated	25.00	0.00	0.00	0.00	1.70	0.00	27.39	1.00	0.61	1.10	0.06	n.a.	2.00							
0.700	2.297	310.70	0.00	0.00	13.30	13.30	-1.00	0.00	#NUM!	0.00	unsaturated	25.00	0.00	0.00	0.00	1.70	0.00	27.39	1.00	0.61	1.10	0.06	n.a.	2.00							
0.800	2.625	310.38	0.00	0.00	15.21	15.21	-1.00	0.00	#NUM!	0.00	unsaturated	25.00	0.00	0.00	0.00	1.70	0.00	27.39	1.00	0.61	1.10	0.06	n.a.	2.00							
0.900	2.953	310.05	0.00	0.00	17.11	17.11	-1.00	0.00	#NUM!	0.00	unsaturated	25.00	0.00	0.00	0.00	1.70	0.00	27.39	1.00	0.61	1.10	0.06	n.a.	2.00							
1.000	3.281	309.72	0.00	0.00	19.01	19.01	-1.00	0.00	#NUM!	0.00	unsaturated	25.00	0.00	0.00	0.00	1.70	0.00	27.39	1.00	0.61	1.10	0.06	n.a.	2.00							
1.100	3.609	309.39	0.00	0.00	20.91	20.91	-1.00	0.00	#NUM!	0.00	unsaturated	25.00	0.00	0.00	0.00	1.70	0.00	27.39	0.99	0.61	1.09	0.06	n.a.	2.00							
1.200	3.937	309.06	0.00	0.00	22.81	22.81	-1.00	0.00	#NUM!	0.00	unsaturated	25.00	0.00	0.00	0.00	1.70	0.00	27.39	0.99	0.61	1.09	0.06	n.a.	2.00							
1.300	4.265	308.73	0.00	0.00	24.71	24.71	-1.00	0.00	#NUM!	0.00	unsaturated	25.00	0.00	0.00	0.00	1.70	0.00	27.39	0.99	0.61	1.08	0.06	n.a.	2.00							
1.400	4.593	308.41	0.00	0.00	26.61	26.61	-1.00	0.00	#NUM!	0.00	unsaturated	25.00	0.00	0.00	0.00	1.70	0.00	27.39	0.99	0.61	1.08	0.06	n.a.	2.00							
1.500	4.921	308.08	0.00	0.00	28.51	28.51	-1.00	0.00	#NUM!	0.00	unsaturated	25.00	0.00	0.00	0.00	#NUM!	#NUM!	#NUM!	0.99	0.60	#NUM!	#NUM!	n.a.	2.00							
1.600	5.249	307.75	0.00	0.00	30.41	30.41	-1.00	0.00	#NUM!	0.00	unsaturated	25.00	0.00	0.00	0.00	#NUM!	#NUM!	#NUM!	0.99	0.60	#NUM!	#NUM!	n.a.	2.00							
1.700	5.577	307.42	0.00	0.00	32.31	32.31	-1.00	0.00	#NUM!	0.00	unsaturated	25.00	0.00	0.00	0.00	#NUM!	#NUM!	#NUM!	0.99	0.60	#NUM!	#NUM!	n.a.	2.00							
1.800	5.906	307.09	59.36	0.34	34.21	34.21	174.24	0.57	1.57	0.00	unsaturated	25.00	0.00	0.00	59.36	1.55	92.07	148.65	0.99	0.60	1.10	0.27	n.a.	2.00	0.096	0.265	0.000	0.100	0.000	0.000	0.000
1.900	6.234	306.77	169.94	0.91	36.11	36.11	474.27	0.54	1.24	0.00	unsaturated	25.00	0.00	0.00	169.94	1.31	222.91	320.96	0.98	0.60	1.10	2.00	n.a.	2.00	0.000	-2.339	0.000	0.100	0.000	0.000	0.000
2.000	6.562	306.44	207.30	0.54	38.01	38.01	549.78	0.26	0.97	0.00	unsaturated	25.00	0.00	0.00	207.30	1.29	268.26	380.69	0.98	0.60	1.10	2.00	n.a.	2.00	0.000	-3.297	0.000	0.100	0.000	0.000	0.000
2.100	6.890	306.11	260.91	0.46	39.91	39.91	659.21	0.18	0.80	0.00	unsaturated	25.00	0.00	0.00	260.91	1.28	333.32	466.38	0.98	0.60	1.10	2.00	n.a.	2.00	0.000	-4.668	0.000	0.100	0.000	0.000	0.000
2.200	7.218	305.78	282.46	1.34	41.82	41.82	681.25	0.47	1.10	0.00	unsaturated	25.00	0.00	0.00	282.46	1.26	356.45	496.84	0.98	0.60	1.10	2.00	n.a.	2.00	0.000	-5.151	0.000	0.100	0.000	0.000	0.000
2.300	7.546	305.45	276.91	2.33	43.72	43.72	638.77	0.84	1.32	0.00	unsaturated	25.00	0.00	0.00	276.91	1.25	345.38	482.25	0.98	0.60	1.10	2.00	n.a.	2.00	0.000	-4.920	0.000	0.100	0.000	0.000	0.000
2.400	7.874	305.13	278.76	1.67	45.62	45.62	616.20	0.60	1.21	0.00	unsaturated	25.00	0.00	0.00	278.76	1.23	343.80	480.17	0.98	0.60	1.10	2.00	n.a.	2.00	0.000	-4.887	0.000	0.100	0.000	0.000	0.000
2.500	8.202	304.80	198.54	0.75	47.52	47.52	421.00	0.38	1.16	0.00	unsaturated	25.00	0.00	0.00	198.54	1.22	242.23	346.41	0.98	0.60	1.10	2.00	n.a.	2.00	0.000	-2.747	0.000	0.100	0.000	0.000	0.000
2.600	8.530	304.47	157.41	0.58	49.42	49.42	320.72	0.37	1.24	0.00	unsaturated	25.00	0.00	0.00	157.41	1.21	190.08	277.73	0.97	0.60	1.10	2.00	n.a.	2.00	0.000	-1.650	0.000	0.100	0.000	0.000	0.000
2.700	8.858	304.14	154.08	0.60	51.32	51.32	302.24	0.39	1.28	0.00	unsaturated	25.00	0.00	0.00	154.08	1.20	184.21	270.00	0.97	0.59	1.10	2.00	n.a.	2.00	0.001	-1.528	0.000	0.100	0.000	0.000	0.000
2.800	9.186	303.81	159.87	1.00	53.22	53.22	302.40	0.63	1.42	0.00	unsaturated	25.00	0.00	0.00	159.87	1.18	189.31	276.71	0.97	0.59	1.10	2.00	n.a.	2.00	0.000	-1.634	0.000	0.100	0.000	0.000	0.000
2.900	9.514	303.49	167.44	2.11	55.12	55.12	305.82	1.26	1.65	0.00	unsaturated	25.00	0.00	0.00	167.44	1.17	196.45	286.12	0.97	0.59	1.10	2.00	n.a.	2.00	0.000	-1.783	0.000	0.100	0.000	0.000	0.000
3.000	9.843	303.16	139.62	1.02	57.02	57.02	246.30	0.73	1.53	0.00	unsaturated	25.00	0.00	0.00	139.62	1.17	163.54	242.77	0.97	0.59	1.10	2.00	n.a.	2.00	0.004	-1.101	0.000	0.100	0.000	0.000	0.000
3.100	10.171	302.83	99.16	0.47	58.92	58.92	168.97	0.48	1.53	0.00	unsaturated	25.00	0.00	0.00	99.16	1.21	119.74	185.09	0.97	0.59	1.10	0.63	n.a.	2.00	0.035	-0.234	0.000	0.100	0.000	0.000	0.000
3.200	10.499	302.50	80.46	0.53	60.82	60.82	132.61	0.67	1.70	0.00	unsaturated	25.00	0.00	0.00	80.46	1.22	98.18	156.69	0.97	0.59	1.09	0.31	n.a.	2.00	0.078	0.160	0.000	0.100	0.000	0.000	0.000
3.300	10.827	302.17	67.65	0.58	62.72	62.72	107.94	0.87	1.85	0.00	unsaturated	25.00	0.00	0.00	67.65	1.23	82.88	136.55	0.96	0.59	1.07	0.22	n.a.	2.00	0.131	0.416	0.000	0.100	0.000	0.000	0.000
3.400	11.155	301.85	69.14	1.61	64.62	64.62	107.06	2.35	2.15	0.00	unsaturated	25.00	0.00	0.00	69.14	1.21	83.57	137.45	0.96	0.59	1.06	0.22	n.a.	2.00	0.128	0.405	0.000	0.100	0.000	0.000	0.000
3.500	11.483	301.52	134.63	1.66	66.52	66.52	203.40	1.24	1.75	0.00	unsaturated	25.00	0.00	0.00	134.63	1.13	152.22	227.87	0.96	0.59	1.10	2.00	n.a.	2.00	0.007	-0.871	0.000	0.100	0.000	0.000	0.000
3.600	11.811	301.19	214.87	1.41	68.42	68.42	316.16	0.66	1.42	0.00	unsaturated	25.00	0.00	0.00	214.87	1.11	238.12	340.99	0.96	0.59	1.10	2.00	n.a.	2.00	0.000	-2.660	0.000	0.100	0.000	0.000	0.000
3.700	12.139	300.86	191.22	0.93	70.33	70.33	273.63	0.49	1.37	0.00	unsaturated	25.00	0.00	0.00	191.22	1.10	210.39	304.47	0.96	0.58	1.10	2.00	n.a.	2.00	0.000	-2.075	0.000	0.100	0.000	0.000	0.000
3.800	12.467	300.53	203.69	0.87	72.23	72.23	283.83	0.43	1.33	0.00	unsaturated	25.00	0.00	0.00	203.69	1.09	222.53	320.46	0.96	0.58	1.10	2.00	n.a.	2.00	0.000	-2.331	0.000	0.100	0.000	0.000	0.000
3.900	12.795	300.20	246.49	1.00	74.13	74.13	334.84	0.41	1.26	0.00	unsaturated	25.00	0.00	0.00	246.49	1.09	267.45	379.62	0.95	0.58	1.09	2.00	n.a.	2.00	0.000	-3.280	0.000	0.100	0.000	0.000	0.000
4.000	13.123	299.88	278.20	2.21	76.03	76.03	368.58	0.80	1.44	0.00	unsaturated	25.00	0.00	0.00	278.20	1.08	299.85	422.29	0.95	0.58	1.09	2.00	n.a.	2.00	0.000	-3.964	0.000	0.100	0.000	0.000	0.000
4.100	13.451	299.55	270.95	3.69	77.93	77.93	350.17	1.37	1.64	0.00	unsaturated	25.00	0.00	0.00	270.95	1.07	290.14	409.51	0.95	0.58	1.08	2.00	n.a.	2.00	0.000	-3.760	0.000	0.100	0.000	0.000	0.000
4.200	13.780	299.22	232.66	2.03	79.83	79.83	293.37	0.88	1.53	0.00	unsaturated	25.00	0.00	0.00	232.66	1.06	247.56	353.43	0.95	0.58	1.07	2.00	n.a.	2.00	0.000	-2.860	0.000	0.100	0.000	0.000	0.000
4.300	14.108	298.89	219.60	1.48	81.73	81.73	270.38	0.68	1.48	0.00	unsaturated	25.00	0.00	0.00	219.60	1.06	232.21	333.22	0.95	0.58	1.06	2.00	n.a.	2.00	0.000	-2.535	0.000	0.100	0.000	0.000	0.000
4.400	14.436	298.56	377.32	2.70	83.63	83.63	454.68	0.72	1.35	0.00	unsaturated	25.00	0.00	0.00	377.32	1.05	396.58	549.69	0.95	0.58	1.06	2.00	n.a.	2.00	0.000	-5.983	0.000	0.100	0.000	0.000	0.000
4.500	14.764	298.24	431.63	2.39	85.53	85.53	508.70	0.55	1.23	0.00	unsaturated	25.00	0.00	0.00	431.63	1.04	450.98	621.34	0.94	0.58	1.05	2.00	n.a.	2.00	0.000	-7.096	0.000	0.100	0.000	0.000	0.000
4.600	15.092	297.91	407.45	1.84	87.43	87.43	469.69	0.45	1.19	0.00	unsaturated	25.00	0.00	0.00	407.45	1.04	423.26	584.83	0.94	0.58	1.04	2.00	n.a.	2.00	0.000	-6.531	0.000	0.100	0.000	0.000	0.000
4.700	15.420	297.58	408.10	1.37	89.33	89.33	460.41	0.34	1.10	0.00	unsaturated	25.00	0.00	0.00	408.10	1.03	421.54	582.56	0.94	0.57	1.04	2.00	n.a.	2.00	0.000	-6.496	0.000	0.100	0.000	0.000	0.000
4.800	15.748	297.25	368.44	1.01	91.23	91.23	406.88	0.28	1.08	0.00	unsaturated	25.00	0.00	0.00	368.44	1.03	378.46	525.82	0.94	0.57	1.03	2.00	n.a.	2.00	0.000	-5.608	0.000	0.100	0.000	0.000	0.000
4.900	16.076	296.92	293.63	1.67	93.13	93.13	317.43	0.57	1.37	0.00	unsaturated	25.00	0.00	0.00	293.63	1.02	299.97	422.46	0.94	0.57	1.02	2.00	n.a.	2.00	0.000	-3.967	0.000	0.100	0.000	0.000	0.000
5.000	16.404	296.60	156.82	2.22	95.03	95.03	165.66	1.42	1.86	0.00	unsaturated	25.00	0.00	0.00	156.82	1.02	159.54	237.50	0.94	0.57	1.02	2.00	n.a.	2.00	0.005	-1.020	0.000	0.100	0.000	0.000	0.000
5.100	16.732	296.27	66.86	1.58	96.94	96.94	68.66	2.39	2.29	0.00	unsaturated	25.00	0.00	0.00	66.86	1.02	68.14	117.13	0.93	0.57	1.00	0.17	n.a.	2.00	0.208	0.634	0.000	0.100	0.000	0.000	0.000
5.200	17.060	295.94	106.80	0.66	98.84	98.84	108.13	0.63	1.76	0.00	unsaturated	25.00	0.00	0.00	106.80	1.01	107.66	169.18	0.93	0.57	1.00	0.40	n.a.	2.00	0.056	-0.009	0.000	0.100	0.000	0.000	0.000
5.300	17.388	295.61	211.49	0.57	100.74	100.74	211.05	0.27	1.32	0.00	unsaturated	25.00	0.00	0.00	211.49	1.00	211.64	306.12	0.93	0.57	1.00	2.00	n.a.	2.00	0.000	-2.102	0.000	0.100	0.000	0.000	0.000
5.400	17.717	295.28	229.17	1.52	102.64	102.64	224.51	0.66	1.53	0.00	unsaturated	25.00	0.00	0.00	229.17	1.00	228.20	327.93	0.93	0.57	1.00	2.00	n.a.	2.00	0.000	-2.451	0.000	0.100	0.000	0.000	0.000
5.500	18.045	294.96	261.75	2.09	104.54	104.54	251.89	0.80	1.55	0.00	unsaturated	25.00	0.00	0.00	261.75	0.99	259.38	369.00	0.93	0.57	0.99	2.00	n.a.	2.00	0.000	-3.110	0.000	0.100	0.000	0.000	0.000
5.600	18.373	294.63	247.13	2.11	106.44	106.44	233.50	0.86	1.59	0.00	unsaturated	25.00	0.00	0.00	247.13	0.99	243.73	348.39	0.92	0.56	0.98	2.00	n.a.	2.00	0.000	-2.779	0.000	0.100	0.000	0.000	0.000
5.700	18.701	294.30	219.46	1.07	108.34	108.34	203.60	0.49	1.48	0.00	unsaturated	25.00	0.00	0.00	219.46	0.98	215.44	311.13	0.92	0.56	0.98	2.00	n.a.	2.00	0.000	-2.181	0.000	0.100	0.000	0.000	0.000
5.800	19.029	293.97	195.93	0.57	110.24	110.24	178.51	0.29	1.40	0.00	unsaturated	25.00	0.00	0.00	195.93	0.98	191.46	279.55	0.92	0.56	0.97	2.00	n.a.	2.00	0.000	-1.679	0.000	0.100	0.000	0.000	0.000
5.900	19.357	293.64	161.63	0.43	112.14	112.14	144.57	0.27	1.46	0.00	unsaturated	25.00	0.00	0.00	161.63	0.97	156.85	233.96	0.92	0.56	0.97	2.00	n.a.	2.00	0.006	-0.965	0.000	0.100	0.000	0.000	0.000
6.000	19.685	293.31	100.71	0.35	114.04	113.49	88.19	0.35	1.71	0.00		25.00	0.00	0.00	100.71	0.95	95.97	153.78	0.92	0.56	0.98	0.29	0.36	0.64	0.084	0.198	0.084	0.100	0.008	0.020	0.002
6.100	20.013	292.99	56.14	0.34	115.94	114.41	47.90	0.62	2.06	0.00		25.00	0.00	0.00	56.14	0.94	52.35	96.33	0.91	0.57	0.99	0.14	0.17	0.30	0.338	0.821	0.338	0.100	0.034	0.033	0.003
6.200	20.341	292.66	39.85	0.37	117.84	115.33	33.16	0.97	2.29	0.00		25.00	0.00	0.00	39.85	0.93	36.57	75.55	0.91	0.57	0.99	0.11	0.13	0.23	0.549	0.932	0.549	0.100	0.055	0.042	0.004
6.300	20.669	292.33	58.54	0.30	119.74	116.25	48.38	0.52	2.02	0.00		25.00	0.00	0.00	58.54	0.93	53.74	98.17	0.91	0.57	0.99	0.14	0.17	0.30	0.324	0.807	0.324	0.100	0.032	0.033	0.003
6.400	20.997	292.00	65.46	0.23	121.64	117.17	53.35	0.36	1.91	0.00		25.00	0.00	0.00	65.46	0.93	59.82	106.17	0.91	0.58	0.98	0.15	0.19	0.33	0.269	0.740	0.269	0.100	0.027	0.030	0.003
6.500	21.325	291.67	67.08	0.18	123.54	118.09	53.84	0.27	1.86	0.00		25.00	0.00	0.00	67.08	0.93	60.88	107.57	0.91	0.58	0.98	0.16	0.19	0.33	0.261	0.727	0.261	0.100	0.026	0.030	0.003
6.600	21.654	291.35	66.95	0.53	125.45	119.01	52.90	0.80	2.08	0.00		25.00	0.00	0.00	66.95	0.92	60.29	106.79	0.91	0.58	0.98	0.15	0.19	0.33	0.265	0.734	0.265	0.100	0.027	0.030	0.003
6.700	21.982	291.02	77.81	0.77	127.35	119.93	60.71	1.01	2.08	0.00		25.00	0.00	0.00	77.81	0.92	69.98	119.55	0.90	0.59	0.98	0.18	0.22	0.38	0.197	0.609	0.197	0.100	0.020	0.027	0.003
6.800	22.310	290.69	67.44	0.62	129.25	120.85	51.70	0.94	2.12	0.00		25.00	0.00	0.00	67.44	0.92	59.84	106.20	0.90	0.59	0.98	0.15	0.19	0.32	0.269	0.740	0.269	0.100	0.027	0.030	0.003
6.900	22.638	290.36	87.46	0.53	131.15	121.77	66.36	0.61	1.93	0.00		25.00	0.00	0.00	87.46	0.92	78.01	130.14	0.90	0.59	0.97	0.20	0.25	0.42	0.153	0.491	0.153	0.100	0.015	0.024	0.002
7.000	22.966	290.03	210.12	1.40	133.05	122.68	158.51	0.67	1.65	0.00		25.00	0.00	0.00	210.12	0.95	195.39	284.72	0.90	0.59	0.94	2.00	2.00	2.00	0.000	-1.761	0.000	0.100	0.000	0.000	0.000
7.100	23.294	289.71	268.27	1.40	134.95	123.60	199.78	0.52	1.50	0.00		25.00	0.00	0.00	268.27	0.95	248.52	354.70	0.90	0.60	0.94	2.00	2.00	2.00	0.000	-2.880	0.000	0.100	0.000	0.000	0.000
7.200	23.622	289.38	284.02	0.81	136.85	124.52	208.62	0.28	1.33	0.00		25.00	0.00	0.00	284.02	0.95	262.15	372.64	0.89	0.60	0.94	2.00	2.00	2.00	0.000	-3.168	0.000	0.100	0.000	0.000	0.000
7.300	23.950	289.05	330.83	0.78	138.75	125.44	239.82	0.24	1.24	0.00		25.00	0.00	0.00	330.83	0.94	304.25	428.09	0.89	0.60	0.93	2.00	2.00	2.00	0.000	-4.057	0.000	0.100	0.000	0.000	0.000
7.400	24.278	288.72	358.22	1.14	140.65	126.36	256.23	0.32	1.28	0.00		25.00	0.00	0.00	358.22	0.94	328.25	459.70	0.89	0.61	0.93	2.00	2.00	2.00	0.000	-4.561	0.000	0.100	0.000	0.000	0.000

LIQUEFACTION TRIGGERING ANALYSIS
LOS ANGELES WATER WHEEL
LOS ANGELES, CALIFORNIA

Geosyntec consultants

7.500	24.606	288.39	365.08	1.22	142.55	127.28	257.66	0.34	1.30	0.00		25.00	0.00	0.00	365.08	0.94	333.35	466.42	0.89	0.61	0.93	2.00	2.00	2.00	0.000	-4.668	0.000	0.100	0.000	0.000	0.000
7.600	24.934	288.07	394.11	0.93	144.45	128.20	274.56	0.24	1.19	0.00		25.00	0.00	0.00	394.11	0.94	358.61	499.68	0.89	0.61	0.93	2.00	2.00	2.00	0.000	-5.196	0.000	0.100	0.000	0.000	0.000
7.700	25.262	287.74	418.05	1.27	146.35	129.12	287.50	0.30	1.23	0.00		25.00	0.00	0.00	418.05	0.94	379.08	526.65	0.88	0.61	0.93	2.00	2.00	2.00	0.000	-5.621	0.000	0.100	0.000	0.000	0.000
7.800	25.591	287.41	443.04	1.14	148.25	130.04	300.83	0.26	1.17	0.00		25.00	0.00	0.00	443.04	0.94	400.38	554.69	0.88	0.61	0.92	2.00	2.00	2.00	0.000	-6.061	0.000	0.100	0.000	0.000	0.000
7.900	25.919	287.08	434.52	1.43	150.15	130.96	291.28	0.33	1.25	0.00		25.00	0.00	0.00	434.52	0.93	391.36	542.82	0.88	0.62	0.92	2.00	2.00	2.00	0.000	-5.875	0.000	0.100	0.000	0.000	0.000
8.000	26.247	286.75	397.00	1.23	152.06	131.88	262.70	0.31	1.27	0.00		25.00	0.00	0.00	397.00	0.93	356.38	496.75	0.88	0.62	0.92	2.00	2.00	2.00	0.000	-5.149	0.000	0.100	0.000	0.000	0.000
8.100	26.575	286.43	348.49	1.67	153.96	132.80	227.62	0.48	1.43	0.00		25.00	0.00	0.00	348.49	0.93	311.81	438.05	0.88	0.62	0.92	2.00	2.00	2.00	0.000	-4.216	0.000	0.100	0.000	0.000	0.000
8.200	26.903	286.10	347.58	0.90	155.86	133.72	224.24	0.26	1.29	0.00		25.00	0.00	0.00	347.58	0.93	309.99	435.66	0.87	0.62	0.92	2.00	2.00	2.00	0.000	-4.178	0.000	0.100	0.000	0.000	0.000
8.300	27.231	285.77	301.49	0.76	157.76	134.64	192.02	0.25	1.34	0.00		25.00	0.00	0.00	301.49	0.93	268.02	380.38	0.87	0.62	0.91	2.00	2.00	2.00	0.000	-3.292	0.000	0.100	0.000	0.000	0.000
8.400	27.559	285.44	255.64	0.69	159.66	135.56	160.72	0.27	1.42	0.00		25.00	0.00	0.00	255.64	0.93	226.54	325.75	0.87	0.63	0.91	2.00	2.00	2.00	0.000	-2.416	0.000	0.100	0.000	0.000	0.000
8.500	27.887	285.11	209.13	2.09	161.56	136.48	129.74	1.01	1.83	0.00		25.00	0.00	0.00	209.13	0.92	184.76	270.72	0.87	0.63	0.91	2.00	2.00	2.00	0.001	-1.539	0.000	0.100	0.000	0.000	0.000
8.600	28.215	284.78	201.54	4.60	163.46	137.40	123.53	2.30	2.10	0.00		25.00	0.00	0.00	201.54	0.92	177.50	261.16	0.87	0.63	0.91	2.00	2.00	2.00	0.001	-1.389	0.000	0.100	0.000	0.000	0.000
8.700	28.543	284.46	195.30	2.04	165.36	138.32	118.29	1.05	1.87	0.00		25.00	0.00	0.00	195.30	0.92	171.40	253.13	0.86	0.63	0.91	2.00	2.00	2.00	0.002	-1.263	0.000	0.100	0.000	0.000	0.000
8.800	28.871	284.13	115.06	1.72	167.26	139.24	68.48	1.51	2.15	0.00		25.00	0.00	0.00	115.06	0.88	93.97	151.15	0.86	0.63	0.95	0.28	0.33	0.53	0.090	0.233	0.090	0.100	0.009	0.021	0.002
8.900	29.199	283.80	135.64	1.50	169.16	140.16	79.98	1.12	2.02	0.00		25.00	0.00	0.00	135.64	0.89	112.44	175.47	0.86	0.63	0.93	0.47	0.56	0.88	0.047	-0.097	0.044	0.100	0.004	0.010	0.001
9.000	29.528	283.47	106.59	0.95	171.06	141.08	61.93	0.91	2.05	0.00		25.00	0.00	0.00	106.59	0.87	85.41	139.88	0.86	0.64	0.95	0.23	0.28	0.44	0.120	0.375	0.120	0.100	0.012	0.022	0.002
9.100	29.856	283.14	74.72	0.55	172.96	142.00	42.63	0.76	2.14	0.00		25.00	0.00	0.00	74.72	0.85	57.35	102.92	0.86	0.64	0.96	0.15	0.18	0.28	0.290	0.769	0.290	0.100	0.029	0.031	0.003
9.200	30.184	282.82	53.41	0.80	174.86	142.92	29.85	1.56	2.44	0.00		25.00	0.00	0.00	53.41	0.83	39.54	79.47	0.85	0.64	0.97	0.11	0.14	0.22	0.500	0.919	0.500	0.100	0.050	0.040	0.004
9.300	30.512	282.49	57.90	1.13	176.76	143.84	32.08	2.01	2.49	0.00		25.00	0.00	0.00	57.90	0.83	42.89	83.87	0.85	0.64	0.97	0.12	0.14	0.23	0.451	0.900	0.451	0.100	0.045	0.038	0.004
9.400	30.840	282.16	86.62	1.85	178.66	144.76	47.96	2.18	2.37	0.00		25.00	0.00	0.00	86.62	0.85	66.36	114.79	0.85	0.64	0.96	0.17	0.20	0.32	0.220	0.658	0.220	0.100	0.022	0.028	0.003
9.500	31.168	281.83	180.98	1.61	180.57	145.68	100.23	0.90	1.88	0.00		25.00	0.00	0.00	180.98	0.90	152.60	228.36	0.85	0.64	0.89	2.00	2.00	2.00	0.007	-0.879	0.000	0.100	0.000	0.000	0.000
9.600	31.496	281.50	286.36	1.80	182.47	146.60	157.51	0.63	1.63	0.00		25.00	0.00	0.00	286.36	0.91	244.99	350.04	0.84	0.64	0.89	2.00	2.00	2.00	0.000	-2.805	0.000	0.100	0.000	0.000	0.000
9.700	31.824	281.18	335.73	0.96	184.37	147.52	182.92	0.29	1.38	0.00		25.00	0.00	0.00	335.73	0.90	286.44	404.64	0.84	0.64	0.89	2.00	2.00	2.00	0.000	-3.682	0.000	0.100	0.000	0.000	0.000
9.800	32.152	280.85	316.25	0.99	186.27	148.44	170.48	0.31	1.43	0.00		25.00	0.00	0.00	316.25	0.90	269.10	381.79	0.84	0.64	0.88	2.00	2.00	2.00	0.000	-3.315	0.000	0.100	0.000	0.000	0.000
9.900	32.480	280.52	356.17	1.41	188.17	149.36	190.18	0.40	1.45	0.00		25.00	0.00	0.00	356.17	0.90	302.25	425.46	0.84	0.65	0.88	2.00	2.00	2.00	0.000	-4.015	0.000	0.100	0.000	0.000	0.000
10.000	32.808	280.19	417.98	0.91	190.07	150.28	221.11	0.22	1.26	0.00		25.00	0.00	0.00	417.98	0.90	353.76	493.30	0.84	0.65	0.88	2.00	2.00	2.00	0.000	-5.095	0.000	0.100	0.000	0.000	0.000
10.100	33.136	279.86	400.81	1.15	191.97	151.20	209.88	0.29	1.33	0.00		25.00	0.00	0.00	400.81	0.90	338.34	472.99	0.83	0.65	0.88	2.00	2.00	2.00	0.000	-4.773	0.000	0.100	0.000	0.000	0.000
10.200	33.465	279.54	357.63	1.49	193.87	152.11	185.31	0.42	1.47	0.00		25.00	0.00	0.00	357.63	0.90	301.11	423.95	0.83	0.65	0.88	2.00	2.00	2.00	0.000	-3.991	0.000	0.100	0.000	0.000	0.000
10.300	33.793	279.21	332.88	0.76	195.77	153.03	170.73	0.23	1.37	0.00		25.00	0.00	0.00	332.88	0.90	279.55	395.56	0.83	0.65	0.88	2.00	2.00	2.00	0.000	-3.536	0.000	0.100	0.000	0.000	0.000
10.400	34.121	278.88	313.89	0.25	197.67	153.95	159.38	0.08	1.27	0.00		25.00	0.00	0.00	313.89	0.89	262.93	373.67	0.83	0.65	0.87	2.00	2.00	2.00	0.000	-3.185	0.000	0.100	0.000	0.000	0.000
10.500	34.449	278.55	282.26	0.27	199.57	154.87	141.85	0.10	1.33	0.00		25.00	0.00	0.00	282.26	0.89	235.84	338.00	0.83	0.65	0.87	2.00	2.00	2.00	0.000	-2.612	0.000	0.100	0.000	0.000	0.000
10.600	34.777	278.22	291.80	0.29	201.47	155.79	145.28	0.10	1.33	0.00		25.00	0.00	0.00	291.80	0.89	243.20	347.69	0.82	0.65	0.87	2.00	2.00	2.00	0.000	-2.767	0.000	0.100	0.000	0.000	0.000
10.700	35.105	277.90	309.81	0.30	203.37	156.71	152.86	0.10	1.30	0.00		25.00	0.00	0.00	309.81	0.89	257.57	366.61	0.82	0.65	0.87	2.00	2.00	2.00	0.000	-3.071	0.000	0.100	0.000	0.000	0.000
10.800	35.433	277.57	297.34	0.43	205.27	157.63	145.30	0.14	1.36	0.00		25.00	0.00	0.00	297.34	0.89	246.60	352.16	0.82	0.65	0.87	2.00	2.00	2.00	0.000	-2.839	0.000	0.100	0.000	0.000	0.000
10.900	35.761	277.24	285.77	0.52	207.17	158.55	138.32	0.18	1.41	0.00		25.00	0.00	0.00	285.77	0.89	236.43	338.77	0.82	0.65	0.86	2.00	2.00	2.00	0.000	-2.624	0.000	0.100	0.000	0.000	0.000
11.000	36.089	276.91	364.05	0.54	209.08	159.47	174.87	0.15	1.29	0.00		25.00	0.00	0.00	364.05	0.89	300.47	423.11	0.82	0.65	0.86	2.00	2.00	2.00	0.000	-3.977	0.000	0.100	0.000	0.000	0.000
11.100	36.417	276.58	389.65	0.90	210.98	160.39	185.54	0.23	1.34	0.00		25.00	0.00	0.00	389.65	0.89	320.83	449.93	0.81	0.65	0.86	2.00	2.00	2.00	0.000	-4.406	0.000	0.100	0.000	0.000	0.000
11.200	36.745	276.25	361.53	0.95	212.88	161.31	170.53	0.26	1.39	0.00		25.00	0.00	0.00	361.53	0.88	296.97	418.51	0.81	0.65	0.86	2.00	2.00	2.00	0.000	-3.904	0.000	0.100	0.000	0.000	0.000
11.300	37.073	275.93	322.90	0.76	214.78	162.23	151.00	0.24	1.42	0.00		25.00	0.00	0.00	322.90	0.88	264.69	375.99	0.81	0.65	0.86	2.00	2.00	2.00	0.000	-3.222	0.000	0.100	0.000	0.000	0.000
11.400	37.402	275.60	298.89	0.59	216.68	163.15	139.09	0.20	1.42	0.00		25.00	0.00	0.00	298.89	0.88	244.74	349.71	0.81	0.66	0.86	2.00	2.00	2.00	0.000	-2.800	0.000	0.100	0.000	0.000	0.000
11.500	37.730	275.27	286.24	0.60	218.58	164.07	132.59	0.21	1.45	0.00		25.00	0.00	0.00	286.24	0.88	234.11	335.72	0.81	0.66	0.85	2.00	2.00	2.00	0.000	-2.575	0.000	0.100	0.000	0.000	0.000
11.600	38.058	274.94	291.19	0.57	220.48	164.99	134.32	0.20	1.44	0.00		25.00	0.00	0.00	291.19	0.88	237.90	340.70	0.80	0.66	0.85	2.00	2.00	2.00	0.000	-2.655	0.000	0.100	0.000	0.000	0.000
11.700	38.386	274.61	287.40	0.96	222.38	165.91	131.99	0.34	1.54	0.00		25.00	0.00	0.00	287.40	0.88	234.53	336.27	0.80	0.66	0.85	2.00	2.00	2.00	0.000	-2.584	0.000	0.100	0.000	0.000	0.000
11.800	38.714	274.29	306.15	1.08	224.28	166.83	140.07	0.35	1.53	0.00		25.00	0.00	0.00	306.15	0.88	249.56	356.07	0.80	0.66	0.85	2.00	2.00	2.00	0.000	-2.902	0.000	0.100	0.000	0.000	0.000
11.900	39.042	273.96	356.63	1.34	226.18	167.75	162.64	0.38	1.49	0.00		25.00	0.00	0.00	356.63	0.87	290.39	409.84	0.80	0.66	0.85	2.00	2.00	2.00	0.000	-3.765	0.000	0.100	0.000	0.000	0.000
12.000	39.370	273.63	371.35	2.13	228.08	168.67	168.68	0.58	1.58	0.00		25.00	0.00	0.00	371.35	0.87	302.04	425.18	0.79	0.66	0.85	2.00	2.00	2.00	0.000	-4.011	0.000	0.100	0.000	0.000	0.000
12.100	39.698	273.30	391.03	2.34	229.98	169.59	176.93	0.60	1.58	0.00		25.00	0.00	0.00	391.03	0.87	317.70	445.81	0.79	0.66	0.84	2.00	2.00	2.00	0.000	-4.340	0.000	0.100	0.000	0.000	0.000
12.200	40.026	272.97	409.58	2.34	231.88	170.51	184.60	0.57	1.55	0.00		25.00	0.00	0.00	409.58	0.87	332.41	465.18	0.79	0.66	0.84	2.00	2.00	2.00	0.000	-4.649	0.000	0.100	0.000	0.000	0.000
12.300	40.354	272.65	416.95	1.53	233.78	171.43	187.16	0.37	1.43	0.00		25.00	0.00	0.00	416.95	0.87	338.02	472.57	0.79	0.66	0.84	2.00	2.00	2.00	0.000	-4.766	0.000	0.100	0.000	0.000	0.000
12.400	40.682	272.32	418.56	0.96	235.69	172.35	187.11	0.23	1.33	0.00		25.00	0.00	0.00	418.56	0.87	338.96	473.81	0.79	0.66	0.84	2.00	2.00	2.00	0.000	-4.786	0.000	0.100	0.000	0.000	0.000
12.500	41.010	271.99	434.12	1.12	237.59	173.27	193.31	0.26	1.34	0.00		25.00	0.00	0.00	434.12	0.87	351.18	489.90	0.78	0.66	0.84	2.00	2.00	2.00	0.000	-5.041	0.000	0.100	0.000	0.000	0.000
12.600	41.339	271.66	487.25	1.61	239.49	174.19	216.20	0.33	1.36	0.00		25.00	0.00	0.00	487.25	0.87	393.74	545.95	0.78	0.66	0.84	2.00	2.00	2.00	0.000	-5.924	0.000	0.100	0.000	0.000	0.000
12.700	41.667	271.33	446.46	1.91	241.39	175.11	197.21	0.43	1.45	0.00		25.00	0.00	0.00	446.46	0.86	360.40	502.03	0.78	0.66	0.83	2.00	2.00	2.00	0.000	-5.233	0.000	0.100	0.000	0.000	0.000
12.800	41.995	271.01	453.79	1.36	243.29	176.03	199.65	0.30	1.36	0.00		25.00	0.00	0.00	453.79	0.86	365.92	509.31	0.78	0.66	0.83	2.00	2.00	2.00	0.000	-5.348	0.000	0.100	0.000	0.000	0.000
12.900	42.323	270.68	510.23	1.10	245.19	176.95	223.70	0.22	1.25	0.00		25.00	0.00	0.00	510.23	0.86	410.99	568.67	0.78	0.66	0.83	2.00	2.00	2.00	0.000	-6.279	0.000	0.100	0.000	0.000	0.000
13.000	42.651	270.35	501.54	1.20	247.09	177.87	218.98	0.24	1.28	0.00		25.00	0.00	0.00	501.54	0.86	403.57	558.89	0.77	0.66	0.83	2.00	2.00	2.00	0.000	-6.127	0.000	0.100	0.000	0.000	0.000
13.100	42.979	270.02	495.60	1.43	248.99	178.79	215.51	0.29	1.33	0.00		25.00	0.00	0.00	495.60	0.86	398.37	552.05	0.77	0.66	0.83	2.00	2.00	2.00	0.000	-6.020	0.000	0.100	0.000	0.000	0.000
13.200	43.307	269.69	506.33	2.02	250.89	179.71	219.31	0.40	1.40	0.00		25.00	0.00	0.00	506.33	0.86	406.57	562.84	0.77	0.66	0.83	2.00	2.00	2.00	0.000	-6.188	0.000	0.100	0.000	0.000	0.000
13.300	43.635	269.36	533.21	1.81	252.79	180.63	230.10	0.34	1.34	0.00		25.00	0.00	0.00	533.21	0.86	427.71	590.69	0.77	0.66	0.83	2.00	2.00	2.00	0.000	-6.622	0.000	0.100	0.000	0.000	0.000
13.400	43.963	269.04	486.47	1.25	254.69	181.54	209.00	0.26	1.31	0.00		25.00	0.00	0.00	486.47	0.86	389.81	540.77	0.77	0.66	0.82	2.00	2.00	2.00	0.000	-5.843	0.000	0.100	0.000	0.000	0.000
13.500	44.291	268.71	538.33	0.89	256.59	182.46	230.48	0.17	1.19	0.00		25.00	0.00	0.00	538.33	0.86	430.92	594.91	0.76	0.66	0.82	2.00	2.00	2.00	0.000	-6.687	0.000	0.100	0.000	0.000	0.000
13.600	44.619	268.38	588.49	2.02	258.49	183.38	251.07	0.35	1.31	0.00		25.00	0.00	0.00	588.49	0.85	470.59	647.16	0.76	0.66	0.82	2.00	2.00	2.00	0.000	-7.493	0.000	0.100	0.000	0.000	0.000
13.700	44.948	268.05	570.10	1.72	260.39	184.30	242.23	0.30	1.29	0.00		25.00	0.00	0.00	570.10	0.85	455.41	627.17	0.76	0.66	0.82	2.00	2.00	2.00	0.000	-7.186	0.000	0.100	0.000	0.000	0.000
13.800	45.276	267.72	564.88	1.46	262.29	185.22	239.07	0.26	1.26	0.00		25.00	0.00	0.00	564.88	0.85	450.78	621.07	0.76	0.66	0.82	2.00	2.00	2.00	0.000	-7.092	0.000	0.100	0.000	0.000	0.000
13.900	45.604	267.40	600.84	1.56	264.20	186.14	253.37	0.26	1.24	0.00		25.00	0.00	0.00	600.84	0.85	478.99	658.22	0.76	0.65	0.82	2.00	2.00	2.00	0.000	-7.662	0.000	0.100	0.000	0.000	0.000
14.000	45.932	267.07	618.13	1.13	266.10	187.06	259.68	0.18	1.16	0.00		25.00	0.00	0.00	618.13	0.85	492.27	675.71	0.75	0.65	0.81	2.00	2.00	2.00	0.000	-7.929	0.000	0.100	0.000	0.000	0.000
14.100	46.260	266.74	574.07	0.97	268.00	187.98	240.16	0.17	1.18	0.00		25.00	0.00	0.00	574.07	0.85	456.72	628.89	0.75	0.65	0.81	2.00	2.00	2.00	0.000	-7.212	0.000	0.100	0.000	0.000	0.000
14.200	46.588	266.41	362.00	2.60	269.90	188.90	150.45	0.72	1.68	0.00		25.00	0.00	0.00	362.00	0.85	287.71	406.31	0.75	0.65	0.81	2.00	2.00	2.00	0.000	-3.708	0.000	0.100	0.000	0.000	0.000
14.300	46.916	266.08	178.88	2.28	271.80	189.82	73.49	1.29	2.08	0.00		25.00	0.00	0.00	178.88	0.82	134.88	205.03	0.75	0.65	0.82	1.45	1.52	2.00	0.018	-0.526	0.000	0.100	0.000	0.000	0.000
14.400	47.244	265.76	431.35	1.07	273.70	190.74	178.11	0.25	1.37	0.00		25.00	0.00	0.00	431.35	0.85	342.14	478.00	0.75	0.65	0.81	2.00	2.00	2.00	0.000	-4.852	0.000	0.100	0.000	0.000	0.000
14.500	47.572	265.43	522.82	1.39	275.60	191.66	215.30	0.27	1.31	0.00		25.00	0.00	0.00	522.82	0.84	414.28	573.01	0.74	0.65	0.81	2.00	2.00	2.00	0.000	-6.347	0.000	0.100	0.000	0.000	0.000
14.600	47.900	265.10	548.95	1.48	277.50	192.58	225.26	0.27	1.29	0.00		25.00	0.00	0.00	548.95	0.84	434.56	599.71	0.74	0.65	0.81	2.00	2.00	2.00	0.000	-6.762	0.000	0.100	0.000	0.000	0.000
14.700	48.228	264.77	550.12	1.90	279.40	193.50	224.88	0.35	1.35	0.00		25.00	0.00	0.00	550.12	0.84	435.05	600.35	0.74	0.65	0.80	2.00	2.00	2.00	0.000	-6.772	0.000	0.100	0.000	0.000	0.000
14.800	48.556	264.44	536.68	1.88	281.30	194.42	218.54	0.35	1.37	0.00		25.00	0.00	0.00	536.68	0.84	424.01	585.81	0.74	0.65	0.80	2.00	2.00	2.00	0.000	-6.546	0.000	0.100	0.000	0.000	0.000
14.900	48.885	264.12	520.07	1.84	283.20	195.34	210.94	0.36	1.38	0.00		25.00	0.00	0.00	520.07	0.84	410.48	567.99	0.73	0.65	0.80	2.00	2.00	2.00	0.000	-6.269	0.000	0.100	0.000	0.000	0.000
15.000	49.213	263.79	517.99	1.88	285.10	196.26	209.31	0.37	1.39	0.00		25.00	0.00	0.00	517.99	0.84	408.44	565.30	0.73	0.65	0.80	2.00	2.00	2.00	0.000	-6.227	0.000	0.100	0.000	0.000	0.000
15.100	49.541	263.46	523.89	1.28	287.00	197.18	210.92	0.25	1.30	0.00		25.00	0.00	0.00	523.89	0.84	412.69	570.91	0.73	0.65	0.80	2.00	2.00	2.00	0.000	-6.314	0.000	0.100	0.000	0.000	0.000
15.200	49.869	263.13	567.41	1.10	288.90	198.10	227.69	0.19	1.22	0.00		25.00	0.00	0.00	567.41	0.84	446.54	615.49	0.73	0.65	0.80	2.00	2.00	2.00	0.000	-7.006	0.000	0.100	0.000	0.000	0.000
15.300	50.197	262.80	552.74	1.02	290.81	199.02	220.95	0.19	1.23	0.00		25.00	0.00	0.00	552.74	0.84	434.57	599.72	0.73	0.65	0.80	2.00	2.00	2.00	0.000	-6.762	0.000	0.100	0.000	0.000	0.000
15.400	50.525	262.48	521.70	1.87	292.71	199.94	207.71	0.36	1.39	0.00		25.00	0.00	0.00	521.70	0.84	409.77	567.06	0.72	0.65	0.79	2.00	2.00	2.00	0.000	-6.254	0.000	0.100	0.000	0.000	0.000
15.500	50.853	262.15	520.61	2.87	294.61	200.86	206.52	0.55	1.50	0.00		25.00	0.00	0.00	520.61	0.83	408.52	565.42	0.72	0.65	0.79	2.00	2.00	2.00	0.000	-6.229	0.000	0.100	0.000	0.000	0.000
15.600	51.181	261.82	510.89	2.17	296.51	201.78	201.90	0.43	1.44	0.00		25.00	0.00	0.00	510.89	0.83	400.51	554.87	0.72	0.65	0.79	2.00	2.00	2.00	0.000	-6.064	0.000	0.100	0.000	0.000	0.000
15.700	51.509	261.49	489.62	2.30	298.41	202.70	192.74	0.47	1.49	0.00		25.00	0.00	0.00	489.62	0.83	383.47	532.43	0.72	0.65	0.79	2.00	2.00	2.00	0.000	-5.712	0.000	0.100	0.000	0.000	0.000
15.800	51.837	261.16	489.20	3.09	300.31	203.62	191.87	0.64	1.57	0.00		25.00	0.00	0.00	489

LIQUEFACTION TRIGGERING ANALYSIS
LOS ANGELES WATER WHEEL
LOS ANGELES, CALIFORNIA

Geosyntec consultants

17.000	55.774	257.23	540.71	7.46	323.12	214.65	203.34	1.39	1.79	0.00		25.00	0.00	0.00	540.71	0.82	418.40	578.42	0.69	0.64	0.77	2.00	1.96	2.00	0.000	-6.431	0.000	0.100	0.000	0.000	0.000
17.100	56.102	256.90	479.63	4.76	325.02	215.57	179.61	1.00	1.72	0.00		25.00	0.00	0.00	479.63	0.82	370.80	515.73	0.69	0.64	0.77	2.00	1.96	2.00	0.000	-5.449	0.000	0.100	0.000	0.000	0.000
17.200	56.430	256.57	481.22	2.04	326.92	216.49	179.59	0.43	1.48	0.00		25.00	0.00	0.00	481.22	0.82	371.69	516.91	0.69	0.64	0.77	2.00	1.95	2.00	0.000	-5.468	0.000	0.100	0.000	0.000	0.000
17.300	56.759	256.24	466.45	2.11	328.82	217.41	173.43	0.46	1.51	0.00	clay	25.00	0.00	0.00	466.45	0.82	359.95	n.a.	0.69	0.64	0.77	n.a.	n.a.	2.00	0.000	0.000	0.000	0.100	0.000	0.000	0.000
17.400	57.087	255.91	469.31	2.21	330.72	218.33	173.91	0.47	1.52	0.00		25.00	0.00	0.00	469.31	0.82	361.84	503.94	0.69	0.64	0.77	2.00	1.95	2.00	0.000	-5.263	0.000	0.100	0.000	0.000	0.000
17.500	57.415	255.59	477.80	1.88	332.62	219.25	176.47	0.40	1.47	0.00		25.00	0.00	0.00	477.80	0.82	368.06	512.12	0.68	0.63	0.77	2.00	1.94	2.00	0.000	-5.392	0.000	0.100	0.000	0.000	0.000
17.600	57.743	255.26	479.40	1.73	334.52	220.17	176.46	0.36	1.45	0.00		25.00	0.00	0.00	479.40	0.81	368.96	513.32	0.68	0.63	0.77	2.00	1.94	2.00	0.000	-5.411	0.000	0.100	0.000	0.000	0.000
17.700	58.071	254.93	458.57	1.98	336.42	221.09	168.17	0.44	1.51	0.00		25.00	0.00	0.00	458.57	0.81	352.62	491.79	0.68	0.63	0.76	2.00	1.94	2.00	0.000	-5.071	0.000	0.100	0.000	0.000	0.000
17.800	58.399	254.60	411.45	3.02	338.32	222.01	150.25	0.74	1.69	0.00		25.00	0.00	0.00	411.45	0.81	316.10	443.70	0.68	0.63	0.76	2.00	1.93	2.00	0.000	-4.306	0.000	0.100	0.000	0.000	0.000
17.900	58.727	254.27	394.23	3.65	340.22	222.93	143.42	0.93	1.77	0.00		25.00	0.00	0.00	394.23	0.81	302.60	425.92	0.68	0.63	0.76	2.00	1.93	2.00	0.000	-4.022	0.000	0.100	0.000	0.000	0.000
18.000	59.055	253.94	376.95	3.87	342.12	223.85	136.61	1.04	1.82	0.00		25.00	0.00	0.00	376.95	0.81	289.08	408.12	0.68	0.63	0.76	2.00	1.93	2.00	0.000	-3.737	0.000	0.100	0.000	0.000	0.000
18.100	59.383	253.62	379.43	3.87	344.02	224.77	137.06	1.03	1.82	0.00		25.00	0.00	0.00	379.43	0.81	290.73	410.29	0.67	0.63	0.76	2.00	1.93	2.00	0.000	-3.772	0.000	0.100	0.000	0.000	0.000
18.200	59.711	253.29	389.07	3.36	345.93	225.69	140.10	0.87	1.76	0.00		25.00	0.00	0.00	389.07	0.81	297.86	419.67	0.67	0.63	0.76	2.00	1.92	2.00	0.000	-3.922	0.000	0.100	0.000	0.000	0.000
18.300	60.039	252.96	366.53	3.50	347.83	226.61	131.47	0.96	1.81	0.00		25.00	0.00	0.00	366.53	0.81	280.36	396.62	0.67	0.63	0.76	2.00	1.92	2.00	0.000	-3.553	0.000	0.100	0.000	0.000	0.000
18.400	60.367	252.63	381.38	2.79	349.73	227.53	136.39	0.74	1.72	0.00		25.00	0.00	0.00	381.38	0.81	291.46	411.25	0.67	0.63	0.76	2.00	1.92	2.00	0.000	-3.788	0.000	0.100	0.000	0.000	0.000
18.500	60.696	252.30	376.20	2.88	351.63	228.45	134.07	0.77	1.74	0.00		25.00	0.00	0.00	376.20	0.81	287.26	405.71	0.67	0.63	0.75	2.00	1.91	2.00	0.000	-3.699	0.000	0.100	0.000	0.000	0.000
18.600	61.024	251.98	420.38	3.06	353.53	229.37	149.47	0.73	1.69	0.00		25.00	0.00	0.00	420.38	0.81	320.71	449.77	0.66	0.63	0.75	2.00	1.91	2.00	0.000	-4.403	0.000	0.100	0.000	0.000	0.000
18.700	61.352	251.65	461.13	3.64	355.43	230.29	163.54	0.79	1.68	0.00		25.00	0.00	0.00	461.13	0.80	351.50	490.32	0.66	0.62	0.75	2.00	1.91	2.00	0.000	-5.048	0.000	0.100	0.000	0.000	0.000
18.800	61.680	251.32	455.32	4.22	357.33	231.21	160.93	0.93	1.74	0.00		25.00	0.00	0.00	455.32	0.80	346.78	484.10	0.66	0.62	0.75	2.00	1.90	2.00	0.000	-4.949	0.000	0.100	0.000	0.000	0.000
18.900	62.008	250.99	403.99	3.90	359.23	232.13	142.18	0.97	1.79	0.00		25.00	0.00	0.00	403.99	0.80	307.42	432.26	0.66	0.62	0.75	2.00	1.90	2.00	0.000	-4.124	0.000	0.100	0.000	0.000	0.000
19.000	62.336	250.66	418.76	2.75	361.13	233.05	146.94	0.66	1.67	0.00		25.00	0.00	0.00	418.76	0.80	318.38	446.71	0.66	0.62	0.75	2.00	1.90	2.00	0.000	-4.354	0.000	0.100	0.000	0.000	0.000
19.100	62.664	250.34	493.93	2.62	363.03	233.97	172.98	0.53	1.55	0.00		25.00	0.00	0.00	493.93	0.80	375.22	521.56	0.66	0.62	0.75	2.00	1.89	2.00	0.000	-5.541	0.000	0.100	0.000	0.000	0.000
19.200	62.992	250.01	503.30	3.82	364.93	234.89	175.72	0.76	1.65	0.00		25.00	0.00	0.00	503.30	0.80	382.02	530.51	0.65	0.62	0.75	2.00	1.89	2.00	0.000	-5.682	0.000	0.100	0.000	0.000	0.000
19.300	63.320	249.68	542.45	3.61	366.83	235.81	188.87	0.67	1.59	0.00		25.00	0.00	0.00	542.45	0.80	411.39	569.19	0.65	0.62	0.75	2.00	1.89	2.00	0.000	-6.287	0.000	0.100	0.000	0.000	0.000
19.400	63.648	249.35	493.18	2.32	368.73	236.73	171.05	0.47	1.53	0.00		25.00	0.00	0.00	493.18	0.80	373.70	519.56	0.65	0.62	0.74	2.00	1.89	2.00	0.000	-5.510	0.000	0.100	0.000	0.000	0.000
19.500	63.976	249.02	560.91	2.27	370.63	237.65	194.09	0.41	1.44	0.00		25.00	0.00	0.00	560.91	0.80	424.67	586.69	0.65	0.62	0.74	2.00	1.88	2.00	0.000	-6.560	0.000	0.100	0.000	0.000	0.000

LDI = 0.443 S = 0.049 m
0.16 ft

CPTu-4 (field)

LIQUEFACTION TRIGGERING ANALYSIS
LOS ANGELES WATER WHEEL
LOS ANGELES, CALIFORNIA

Geosyntec consultants

Input Parameters

Boring Designation	CPTu-4 (field)
Ground Surface Elevation (ft)	313
Peak Ground Acceleration (g)	0.94
Earthquake Magnitude, M=	6.6
Water Table Depth (m)	11.28
Field Water Table Elevation =	276
Unit Weight above Water Table (pcf)	120.9
Unit Weight below Water Table (pcf)	127.2

Intermediate Parameters

Unit Weight above Water Table (kN/m^3)	19.0
Unit Weight below Water Table (kN/m^3)	20.0
Magnitude scaling factor, MSF	1.27

Legend

= Manual Input
= Calculated Value
= Calculated Factor of Safety against Liquefaction is over 1.0
= Calculated Factor of Safety against Liquefaction is 1.0 or Lower
red text = Manual input cell with formula used as input (and subject to change)
= Cell value not relevant for this sheet

NOTE: There is a significant difference between field water table elevation and assumed historic high water elevation (i.e., about 18 ft). qc1N should be calculated for field conditions (using "field" sheet), then used to calculate FS for historic high conditions (using "high" sheet).

Depth (m b.g.s.)	Depth (ft b.g.s.)	Elevation (ft)	Tip q_{cN}	F_{sN}	σ_{vc} (kPa)	σ_{vc}' (kPa)	Q	F	I_c	Layer	Flag "clay" or "Unsaturated"	Fines (%)	Interpreted q_{cn} near interfaces	Thin layer factor	Interpreted q_{cn}	C_N	q_{c1N}	qcN1-cs	Stress reduc. coeff, r_d	CSR	K_α for sand	CRR for M=7.5 & σ_{vc}'=1 atm	CRR	Factor of Safety	Potential For Liquefaction
0.100	0.328	312.67			1.90	1.90	-1.00	0.00	#NUM!		unsaturated	25.00			0.00	1.70	0.00	27.39	1.01	0.61	1.10	0.06	n.a.	n.a.	NO
0.200	0.656	314.34			3.80	3.80	-1.00	0.00	#NUM!		unsaturated	25.00			0.00	1.70	0.00	27.39	1.01	0.61	1.10	0.06	n.a.	n.a.	NO
0.300	0.984	312.02			5.70	5.70	-1.00	0.00	#NUM!		unsaturated	25.00			0.00	1.70	0.00	27.39	1.00	0.61	1.10	0.06	n.a.	n.a.	NO
0.400	1.312	311.69			7.60	7.60	-1.00	0.00	#NUM!		unsaturated	25.00			0.00	1.70	0.00	27.39	1.00	0.61	1.10	0.06	n.a.	n.a.	NO
0.500	1.640	311.36			9.50	9.50	-1.00	0.00	#NUM!		unsaturated	25.00			0.00	1.70	0.00	27.39	1.00	0.61	1.10	0.06	n.a.	n.a.	NO
0.600	1.969	311.03			11.40	11.40	-1.00	0.00	#NUM!		unsaturated	25.00			0.00	1.70	0.00	27.39	1.00	0.61	1.10	0.06	n.a.	n.a.	NO
0.700	2.297	310.70			13.30	13.30	-1.00	0.00	#NUM!		unsaturated	25.00			0.00	1.70	0.00	27.39	1.00	0.61	1.10	0.06	n.a.	n.a.	NO
0.800	2.625	310.38			15.21	15.21	-1.00	0.00	#NUM!		unsaturated	25.00			0.00	1.70	0.00	27.39	1.00	0.61	1.10	0.06	n.a.	n.a.	NO
0.900	2.953	310.05			17.11	17.11	-1.00	0.00	#NUM!		unsaturated	25.00			0.00	1.70	0.00	27.39	1.00	0.61	1.10	0.06	n.a.	n.a.	NO
1.000	3.281	309.72			19.01	19.01	-1.00	0.00	#NUM!		unsaturated	25.00			0.00	1.70	0.00	27.39	1.00	0.61	1.10	0.06	n.a.	n.a.	NO
1.100	3.609	309.39			20.91	20.91	-1.00	0.00	#NUM!		unsaturated	25.00			0.00	1.70	0.00	27.39	0.99	0.61	1.09	0.06	n.a.	n.a.	NO
1.200	3.937	309.06			22.81	22.81	-1.00	0.00	#NUM!		unsaturated	25.00			0.00	1.70	0.00	27.39	0.99	0.61	1.09	0.06	n.a.	n.a.	NO
1.300	4.265	308.73			24.71	24.71	-1.00	0.00	#NUM!		unsaturated	25.00			0.00	1.70	0.00	27.39	0.99	0.61	1.08	0.06	n.a.	n.a.	NO
1.400	4.593	308.41	300.97	1.18	26.61	26.61	1141.35	0.39	0.91		unsaturated	25.00			300.97	1.42	427.90	590.94	0.99	0.61	1.10	2.00	n.a.	n.a.	NO
1.500	4.921	308.08	391.03	2.27	28.51	28.51	1384.26	0.58	1.04		unsaturated	25.00			391.03	1.40	545.93	746.38	0.99	0.60	1.10	2.00	n.a.	n.a.	NO
1.600	5.249	307.75	247.51	2.27	30.41	30.41	821.02	0.92	1.31		unsaturated	25.00			247.51	1.37	339.72	474.80	0.99	0.60	1.10	2.00	n.a.	n.a.	NO
1.700	5.577	307.42	184.37	2.34	32.31	32.31	575.29	1.27	1.50		unsaturated	25.00			184.37	1.35	249.04	355.37	0.99	0.60	1.10	2.00	n.a.	n.a.	NO
1.800	5.906	307.09	150.74	2.33	34.21	34.21	444.02	1.55	1.63		unsaturated	25.00			150.74	1.33	200.57	291.55	0.99	0.60	1.10	2.00	n.a.	n.a.	NO
1.900	6.234	306.77	130.59	2.29	36.11	36.11	364.23	1.76	1.72		unsaturated	25.00			130.59	1.31	171.45	253.20	0.98	0.60	1.10	2.00	n.a.	n.a.	NO
2.000	6.562	306.44	119.03	1.56	38.01	38.01	315.25	1.31	1.65		unsaturated	25.00			119.03	1.32	157.41	234.69	0.98	0.60	1.10	2.00	n.a.	n.a.	NO
2.100	6.890	306.11	99.44	0.58	39.91	39.91	250.63	0.58	1.45		unsaturated	25.00			99.44	1.35	134.32	204.29	0.98	0.60	1.10	1.40	n.a.	n.a.	NO
2.200	7.218	305.78	75.85	1.77	41.82	41.82	182.21	2.35	2.00		unsaturated	25.00			75.85	1.39	105.76	166.67	0.98	0.60	1.10	0.38	n.a.	n.a.	NO
2.300	7.546	305.45	111.80	1.41	43.72	43.72	257.29	1.27	1.70		unsaturated	25.00			111.80	1.29	144.53	217.73	0.98	0.60	1.10	2.00	n.a.	n.a.	NO
2.400	7.874	305.13	204.96	1.34	45.62	45.62	452.79	0.65	1.32		unsaturated	25.00			204.96	1.23	252.77	360.30	0.98	0.60	1.10	2.00	n.a.	n.a.	NO
2.500	8.202	304.80	312.76	1.29	47.52	47.52	663.78	0.41	1.06		unsaturated	25.00			312.76	1.22	381.60	529.96	0.98	0.60	1.10	2.00	n.a.	n.a.	NO
2.600	8.530	304.47	456.17	1.52	49.42	49.42	931.31	0.33	0.90		unsaturated	25.00			456.17	1.21	550.84	752.85	0.97	0.60	1.10	2.00	n.a.	n.a.	NO
2.700	8.858	304.14	503.77	0.93	51.32	51.32	990.47	0.19	0.68		unsaturated	25.00			503.77	1.20	602.29	820.62	0.97	0.59	1.10	2.00	n.a.	n.a.	NO
2.800	9.186	303.81	478.70	1.28	53.22	53.22	907.49	0.27	0.82		unsaturated	25.00			478.70	1.18	566.86	773.95	0.97	0.59	1.10	2.00	n.a.	n.a.	NO
2.900	9.514	303.49	478.00	1.31	55.12	55.12	874.88	0.27	0.84		unsaturated	25.00			478.00	1.17	560.81	765.99	0.97	0.59	1.10	2.00	n.a.	n.a.	NO
3.000	9.843	303.16	452.90	1.65	57.02	57.02	801.22	0.36	0.96		unsaturated	25.00			452.90	1.16	526.63	720.97	0.97	0.59	1.10	2.00	n.a.	n.a.	NO
3.100	10.171	302.83	439.23	1.93	58.92	58.92	751.91	0.44	1.05		unsaturated	25.00			439.23	1.15	506.34	694.24	0.97	0.59	1.10	2.00	n.a.	n.a.	NO
3.200	10.499	302.50	391.84	1.61	60.82	60.82	649.68	0.41	1.06		unsaturated	25.00			391.84	1.14	447.94	617.33	0.97	0.59	1.10	2.00	n.a.	n.a.	NO
3.300	10.827	302.17	299.79	2.81	62.72	62.72	481.74	0.94	1.43		unsaturated	25.00			299.79	1.13	339.94	475.10	0.96	0.59	1.10	2.00	n.a.	n.a.	NO
3.400	11.155	301.85	193.22	2.56	64.62	64.62	300.99	1.33	1.67		unsaturated	25.00			193.22	1.13	217.38	313.69	0.96	0.59	1.10	2.00	n.a.	n.a.	NO
3.500	11.483	301.52	211.71	2.00	66.52	66.52	320.43	0.95	1.54		unsaturated	25.00			211.71	1.12	236.36	338.68	0.96	0.59	1.10	2.00	n.a.	n.a.	NO
3.600	11.811	301.19	204.94	1.87	68.42	68.42	301.51	0.91	1.54		unsaturated	25.00			204.94	1.11	227.11	326.50	0.96	0.59	1.10	2.00	n.a.	n.a.	NO
3.700	12.139	300.86	103.66	1.86	70.33	70.33	147.87	1.80	1.97		unsaturated	25.00			103.66	1.14	117.81	182.55	0.96	0.58	1.08	0.58	n.a.	n.a.	NO
3.800	12.467	300.53	71.10	1.41	72.23	72.23	98.43	2.01	2.12		unsaturated	25.00			71.10	1.15	82.08	135.49	0.96	0.58	1.05	0.22	n.a.	n.a.	NO
3.900	12.795	300.20	72.19	1.10	74.13	74.13	97.36	1.54	2.04		unsaturated	25.00			72.19	1.14	82.39	135.90	0.95	0.58	1.04	0.22	n.a.	n.a.	NO
4.000	13.123	299.88	78.03	1.06	76.03	76.03	102.66	1.37	1.99		unsaturated	25.00			78.03	1.13	87.79	143.01	0.95	0.58	1.04	0.24	n.a.	n.a.	NO
4.100	13.451	299.55	208.49	4.94	77.93	77.93	269.21	2.38	1.91		unsaturated	25.00			208.49	1.07	223.25	321.42	0.95	0.58	1.08	2.00	n.a.	n.a.	NO
4.200	13.780	299.22	281.50	7.96	79.83	79.83	355.15	2.84	1.91		unsaturated	25.00			281.50	1.06	299.52	421.86	0.95	0.58	1.07	2.00	n.a.	n.a.	NO
4.300	14.108	298.89	192.60	3.12	81.73	81.73	237.01	1.63	1.80		unsaturated	25.00			192.60	1.06	203.67	295.62	0.95	0.58	1.06	2.00	n.a.	n.a.	NO
4.400	14.436	298.56	88.22	0.73	83.63	83.63	105.55	0.84	1.84		unsaturated	25.00			88.22	1.08	95.12	152.67	0.95	0.58	1.03	0.28	n.a.	n.a.	NO
4.500	14.764	298.24	41.42	0.60	85.53	85.53	47.91	1.48	2.27		unsaturated	25.00			41.42	1.09	45.23	86.95	0.94	0.58	1.02	0.12	n.a.	n.a.	NO
4.600	15.092	297.91	83.09	0.69	87.43	87.43	94.99	0.84	1.88		unsaturated	25.00			83.09	1.06	88.21	143.56	0.94	0.58	1.02	0.24	n.a.	n.a.	NO
4.700	15.420	297.58	205.62	1.04	89.33	89.33	231.48	0.51	1.44		unsaturated	25.00			205.62	1.03	212.39	307.11	0.94	0.57	1.04	2.00	n.a.	n.a.	NO
4.800	15.748	297.25	322.94	1.04	91.23	91.23	356.52	0.32	1.17		unsaturated	25.00			322.94	1.03	331.73	464.28	0.94	0.57	1.03	2.00	n.a.	n.a.	NO
4.900	16.076	296.92	379.33	1.04	93.13	93.13	410.37	0.28	1.08		unsaturated	25.00			379.33	1.02	387.54	537.78	0.94	0.57	1.02	2.00	n.a.	n.a.	NO
5.000	16.404	296.60	412.20	1.31	95.03	95.03	437.08	0.32	1.10		unsaturated	25.00			412.20	1.02	418.87	579.05	0.94	0.57	1.02	2.00	n.a.	n.a.	NO
5.100	16.732	296.27	489.82	1.72	96.94	96.94	509.36	0.35	1.08		unsaturated	25.00			489.82	1.01	495.16	679.52	0.93	0.57	1.01	2.00	n.a.	n.a.	NO

LIQUEFACTION TRIGGERING ANALYSIS
LOS ANGELES WATER WHEEL
LOS ANGELES, CALIFORNIA

Geosyntec consultants

5.200	17.060	295.94	542.32	2.01	98.84	98.84	553.19	0.37	1.07		unsaturated	25.00			542.32	1.01	545.43	745.72	0.93	0.57	1.01	2.00	n.a.	n.a.	NO
5.300	17.388	295.61	503.91	2.63	100.74	100.74	504.23	0.52	1.21		unsaturated	25.00			503.91	1.00	504.26	691.51	0.93	0.57	1.00	2.00	n.a.	n.a.	NO
5.400	17.717	295.28	462.10	3.12	102.64	102.64	453.73	0.68	1.33		unsaturated	25.00			462.10	1.00	460.14	633.40	0.93	0.57	1.00	2.00	n.a.	n.a.	NO
5.500	18.045	294.96	442.89	1.45	104.54	104.54	426.90	0.33	1.12		unsaturated	25.00			442.89	0.99	438.88	605.40	0.93	0.57	0.99	2.00	n.a.	n.a.	NO
5.600	18.373	294.63	398.69	1.17	106.44	106.44	377.32	0.29	1.13		unsaturated	25.00			398.69	0.99	393.21	545.25	0.92	0.56	0.98	2.00	n.a.	n.a.	NO
5.700	18.701	294.30	312.34	1.21	108.34	108.34	290.18	0.39	1.29		unsaturated	25.00			312.34	0.98	306.61	431.20	0.92	0.56	0.98	2.00	n.a.	n.a.	NO
5.800	19.029	293.97	332.32	1.14	110.24	110.24	303.46	0.34	1.24		unsaturated	25.00			332.32	0.98	324.73	455.07	0.92	0.56	0.97	2.00	n.a.	n.a.	NO
5.900	19.357	293.64	432.41	2.01	112.14	112.14	388.45	0.47	1.25		unsaturated	25.00			432.41	0.97	420.64	581.37	0.92	0.56	0.97	2.00	n.a.	n.a.	NO
6.000	19.685	293.31	553.32	2.73	114.04	114.04	489.05	0.49	1.20		unsaturated	25.00			553.32	0.97	535.87	733.14	0.92	0.56	0.96	2.00	n.a.	n.a.	NO
6.100	20.013	292.99	480.07	1.96	115.94	115.94	417.20	0.41	1.19		unsaturated	25.00			480.07	0.96	462.91	637.04	0.91	0.56	0.96	2.00	n.a.	n.a.	NO
6.200	20.341	292.66	409.32	2.19	117.84	117.84	349.82	0.54	1.33		unsaturated	25.00			409.32	0.96	393.00	544.97	0.91	0.56	0.95	2.00	n.a.	n.a.	NO
6.300	20.669	292.33	382.99	2.31	119.74	119.74	322.04	0.60	1.39		unsaturated	25.00			382.99	0.96	366.17	509.64	0.91	0.56	0.95	2.00	n.a.	n.a.	NO
6.400	20.997	292.00	429.07	1.79	121.64	121.64	355.26	0.42	1.25		unsaturated	25.00			429.07	0.95	408.53	565.43	0.91	0.56	0.94	2.00	n.a.	n.a.	NO
6.500	21.325	291.67	488.03	1.37	123.54	123.54	397.97	0.28	1.10		unsaturated	25.00			488.03	0.95	462.76	636.85	0.91	0.55	0.94	2.00	n.a.	n.a.	NO
6.600	21.654	291.35	450.30	1.54	125.45	125.45	361.55	0.34	1.18		unsaturated	25.00			450.30	0.94	425.27	587.47	0.91	0.55	0.93	2.00	n.a.	n.a.	NO
6.700	21.982	291.02	457.14	2.10	127.35	127.35	361.56	0.46	1.27		unsaturated	25.00			457.14	0.94	430.02	593.73	0.90	0.55	0.93	2.00	n.a.	n.a.	NO
6.800	22.310	290.69	458.32	2.02	129.25	129.25	357.15	0.44	1.26		unsaturated	25.00			458.32	0.94	429.45	592.98	0.90	0.55	0.93	2.00	n.a.	n.a.	NO
6.900	22.638	290.36	500.58	2.45	131.15	131.15	384.51	0.49	1.27		unsaturated	25.00			500.58	0.93	467.24	642.75	0.90	0.55	0.92	2.00	n.a.	n.a.	NO
7.000	22.966	290.03	647.11	3.35	133.05	133.05	490.24	0.52	1.22		unsaturated	25.00			647.11	0.93	601.73	819.88	0.90	0.55	0.92	2.00	n.a.	n.a.	NO
7.100	23.294	289.71	747.70	2.32	134.95	134.95	558.60	0.31	1.02		unsaturated	25.00			747.70	0.93	692.67	939.64	0.90	0.55	0.91	2.00	n.a.	n.a.	NO

CPTu-4 (high)

LIQUEFACTION TRIGGERING ANALYSIS
LOS ANGELES WATER WHEEL
LOS ANGELES, CALIFORNIA

Geosyntec consultants

Input Parameters

Boring Designation	CPTu-4 (high)
Ground Surface Elevation (ft)	313
Peak Ground Acceleration (g)	0.94
Earthquake Magnitude, M=	6.6
Water Table Depth (m)	5.94
Historic High Water Table Elevation =	293.5
Unit Weight above Water Table (pcf)	120.9
Unit Weight below Water Table (pcf)	127.2

Intermediate Parameters

Unit Weight above Water Table (kN/m^3)	19.0
Unit Weight below Water Table (kN/m^3)	20.0
Magnitude scaling factor, MSF	1.27

Legend

= Manual Input
= Calculated Value
= Calculated Factor of Safety against Liquefaction is over 1.0
= Calculated Factor of Safety against Liquefaction is 1.0 or Lower
red text = Manual input cell with formula used as input (and subject to change)
= Cell value not relevant for this sheet

NOTE: There is a significant difference between field water table elevation and assumed historic high water elevation (i.e., about 18 ft). qc1N should be calculated for field conditions (using "field" sheet), then used to calculate FS for historic high conditions (using "high" sheet).

Depth (m b.g.s.)	Depth (ft b.g.s.)	Elevation (ft)	Tip q_{cN}	F_{sN}	σ_{vc} (kPa)	σ_{vc}' (kPa)	Q	F	I_c	Layer	Flag "clay" or "Unsaturated"	Fines (%)	Interpreted q_{cn} near interfaces	Thin layer factor	Interpreted q_{cn}	C_N	q_{c1N}	qcN1-cs	Stress reduc. coeff, r_d	CSR	K_α for sand	CRR for M=7.5 & σ_{vc}'=1 atm	CRR	Factor of Safety	Potential For Liquefaction
0.100	0.328	312.67	0.00	0.00	1.90	1.90	-1.00	0.00	#NUM!	0.00	unsaturated	25.00	0.00	0.00	0.00	1.70	0.00	27.39	1.01	0.61	1.10	0.06	n.a.	2.00	NO
0.200	0.656	314.34	0.00	0.00	3.80	3.80	-1.00	0.00	#NUM!	0.00	unsaturated	25.00	0.00	0.00	0.00	1.70	0.00	27.39	1.01	0.61	1.10	0.06	n.a.	2.00	NO
0.300	0.984	312.02	0.00	0.00	5.70	5.70	-1.00	0.00	#NUM!	0.00	unsaturated	25.00	0.00	0.00	0.00	1.70	0.00	27.39	1.00	0.61	1.10	0.06	n.a.	2.00	NO
0.400	1.312	311.69	0.00	0.00	7.60	7.60	-1.00	0.00	#NUM!	0.00	unsaturated	25.00	0.00	0.00	0.00	1.70	0.00	27.39	1.00	0.61	1.10	0.06	n.a.	2.00	NO
0.500	1.640	311.36	0.00	0.00	9.50	9.50	-1.00	0.00	#NUM!	0.00	unsaturated	25.00	0.00	0.00	0.00	1.70	0.00	27.39	1.00	0.61	1.10	0.06	n.a.	2.00	NO
0.600	1.969	311.03	0.00	0.00	11.40	11.40	-1.00	0.00	#NUM!	0.00	unsaturated	25.00	0.00	0.00	0.00	1.70	0.00	27.39	1.00	0.61	1.10	0.06	n.a.	2.00	NO
0.700	2.297	310.70	0.00	0.00	13.30	13.30	-1.00	0.00	#NUM!	0.00	unsaturated	25.00	0.00	0.00	0.00	1.70	0.00	27.39	1.00	0.61	1.10	0.06	n.a.	2.00	NO
0.800	2.625	310.38	0.00	0.00	15.21	15.21	-1.00	0.00	#NUM!	0.00	unsaturated	25.00	0.00	0.00	0.00	1.70	0.00	27.39	1.00	0.61	1.10	0.06	n.a.	2.00	NO
0.900	2.953	310.05	0.00	0.00	17.11	17.11	-1.00	0.00	#NUM!	0.00	unsaturated	25.00	0.00	0.00	0.00	1.70	0.00	27.39	1.00	0.61	1.10	0.06	n.a.	2.00	NO
1.000	3.281	309.72	0.00	0.00	19.01	19.01	-1.00	0.00	#NUM!	0.00	unsaturated	25.00	0.00	0.00	0.00	1.70	0.00	27.39	1.00	0.61	1.10	0.06	n.a.	2.00	NO
1.100	3.609	309.39	0.00	0.00	20.91	20.91	-1.00	0.00	#NUM!	0.00	unsaturated	25.00	0.00	0.00	0.00	1.70	0.00	27.39	0.99	0.61	1.09	0.06	n.a.	2.00	NO
1.200	3.937	309.06	0.00	0.00	22.81	22.81	-1.00	0.00	#NUM!	0.00	unsaturated	25.00	0.00	0.00	0.00	1.70	0.00	27.39	0.99	0.61	1.09	0.06	n.a.	2.00	NO
1.300	4.265	308.73	0.00	0.00	24.71	24.71	-1.00	0.00	#NUM!	0.00	unsaturated	25.00	0.00	0.00	0.00	1.70	0.00	27.39	0.99	0.61	1.08	0.06	n.a.	2.00	NO
1.400	4.593	308.41	300.97	1.18	26.61	26.61	-1.00	0.00	#NUM!	0.00	unsaturated	25.00	0.00	0.00	300.97	1.42	427.90	590.94	0.99	0.61	1.10	2.00	n.a.	2.00	NO
1.500	4.921	308.08	391.03	2.27	28.51	28.51	-1.00	0.00	#NUM!	0.00	unsaturated	25.00	0.00	0.00	391.03	1.40	545.93	746.38	0.99	0.60	1.10	2.00	n.a.	2.00	NO
1.600	5.249	307.75	247.51	2.27	30.41	30.41	-1.00	0.00	#NUM!	0.00	unsaturated	25.00	0.00	0.00	247.51	1.37	339.72	474.80	0.99	0.60	1.10	2.00	n.a.	2.00	NO
1.700	5.577	307.42	184.37	2.34	32.31	32.31	-1.00	0.00	#NUM!	0.00	unsaturated	25.00	0.00	0.00	184.37	1.35	249.04	355.37	0.99	0.60	1.10	2.00	n.a.	2.00	NO
1.800	5.906	307.09	150.74	2.33	34.21	34.21	174.24	0.57	1.57	0.00	unsaturated	25.00	0.00	0.00	150.74	1.33	200.57	291.55	0.99	0.60	1.10	2.00	n.a.	2.00	NO
1.900	6.234	306.77	130.59	2.29	36.11	36.11	474.27	0.54	1.24	0.00	unsaturated	25.00	0.00	0.00	130.59	1.31	171.45	253.20	0.98	0.60	1.10	2.00	n.a.	2.00	NO
2.000	6.562	306.44	119.03	1.56	38.01	38.01	549.78	0.26	0.97	0.00	unsaturated	25.00	0.00	0.00	119.03	1.32	157.41	234.69	0.98	0.60	1.10	2.00	n.a.	2.00	NO
2.100	6.890	306.11	99.44	0.58	39.91	39.91	659.21	0.18	0.80	0.00	unsaturated	25.00	0.00	0.00	99.44	1.35	134.32	204.29	0.98	0.60	1.10	1.40	n.a.	2.00	NO
2.200	7.218	305.78	75.85	1.77	41.82	41.82	681.25	0.47	1.10	0.00	unsaturated	25.00	0.00	0.00	75.85	1.39	105.76	166.67	0.98	0.60	1.10	0.38	n.a.	2.00	NO
2.300	7.546	305.45	111.80	1.41	43.72	43.72	638.77	0.84	1.32	0.00	unsaturated	25.00	0.00	0.00	111.80	1.29	144.53	217.73	0.98	0.60	1.10	2.00	n.a.	2.00	NO
2.400	7.874	305.13	204.96	1.34	45.62	45.62	616.20	0.60	1.21	0.00	unsaturated	25.00	0.00	0.00	204.96	1.23	252.77	360.30	0.98	0.60	1.10	2.00	n.a.	2.00	NO
2.500	8.202	304.80	312.76	1.29	47.52	47.52	421.00	0.38	1.16	0.00	unsaturated	25.00	0.00	0.00	312.76	1.22	381.60	529.96	0.98	0.60	1.10	2.00	n.a.	2.00	NO
2.600	8.530	304.47	456.17	1.52	49.42	49.42	320.72	0.37	1.24	0.00	unsaturated	25.00	0.00	0.00	456.17	1.21	550.84	752.85	0.97	0.60	1.10	2.00	n.a.	2.00	NO
2.700	8.858	304.14	503.77	0.93	51.32	51.32	302.24	0.39	1.28	0.00	unsaturated	25.00	0.00	0.00	503.77	1.20	602.29	820.62	0.97	0.59	1.10	2.00	n.a.	2.00	NO
2.800	9.186	303.81	478.70	1.28	53.22	53.22	302.40	0.63	1.42	0.00	unsaturated	25.00	0.00	0.00	478.70	1.18	566.86	773.95	0.97	0.59	1.10	2.00	n.a.	2.00	NO
2.900	9.514	303.49	478.00	1.31	55.12	55.12	305.82	1.26	1.65	0.00	unsaturated	25.00	0.00	0.00	478.00	1.17	560.81	765.99	0.97	0.59	1.10	2.00	n.a.	2.00	NO
3.000	9.843	303.16	452.90	1.65	57.02	57.02	246.30	0.73	1.53	0.00	unsaturated	25.00	0.00	0.00	452.90	1.16	526.63	720.97	0.97	0.59	1.10	2.00	n.a.	2.00	NO
3.100	10.171	302.83	439.23	1.93	58.92	58.92	168.97	0.48	1.53	0.00	unsaturated	25.00	0.00	0.00	439.23	1.15	506.34	694.24	0.97	0.59	1.10	2.00	n.a.	2.00	NO
3.200	10.499	302.50	391.84	1.61	60.82	60.82	132.61	0.67	1.70	0.00	unsaturated	25.00	0.00	0.00	391.84	1.14	447.94	617.33	0.97	0.59	1.10	2.00	n.a.	2.00	NO
3.300	10.827	302.17	299.79	2.81	62.72	62.72	107.94	0.87	1.85	0.00	unsaturated	25.00	0.00	0.00	299.79	1.13	339.94	475.10	0.96	0.59	1.10	2.00	n.a.	2.00	NO
3.400	11.155	301.85	193.22	2.56	64.62	64.62	107.06	2.35	2.15	0.00	unsaturated	25.00	0.00	0.00	193.22	1.13	217.38	313.69	0.96	0.59	1.10	2.00	n.a.	2.00	NO
3.500	11.483	301.52	211.71	2.00	66.52	66.52	203.40	1.24	1.75	0.00	unsaturated	25.00	0.00	0.00	211.71	1.12	236.36	338.68	0.96	0.59	1.10	2.00	n.a.	2.00	NO
3.600	11.811	301.19	204.94	1.87	68.42	68.42	316.16	0.66	1.42	0.00	unsaturated	25.00	0.00	0.00	204.94	1.11	227.11	326.50	0.96	0.59	1.10	2.00	n.a.	2.00	NO
3.700	12.139	300.86	103.66	1.86	70.33	70.33	273.63	0.49	1.37	0.00	unsaturated	25.00	0.00	0.00	103.66	1.14	117.81	182.55	0.96	0.58	1.08	0.58	n.a.	2.00	NO
3.800	12.467	300.53	71.10	1.41	72.23	72.23	283.83	0.43	1.33	0.00	unsaturated	25.00	0.00	0.00	71.10	1.15	82.08	135.49	0.96	0.58	1.05	0.22	n.a.	2.00	NO
3.900	12.795	300.20	72.19	1.10	74.13	74.13	334.84	0.41	1.26	0.00	unsaturated	25.00	0.00	0.00	72.19	1.14	82.39	135.90	0.95	0.58	1.04	0.22	n.a.	2.00	NO
4.000	13.123	299.88	78.03	1.06	76.03	76.03	368.58	0.80	1.44	0.00	unsaturated	25.00	0.00	0.00	78.03	1.13	87.79	143.01	0.95	0.58	1.04	0.24	n.a.	2.00	NO
4.100	13.451	299.55	208.49	4.94	77.93	77.93	350.17	1.37	1.64	0.00	unsaturated	25.00	0.00	0.00	208.49	1.07	223.25	321.42	0.95	0.58	1.08	2.00	n.a.	2.00	NO
4.200	13.780	299.22	281.50	7.96	79.83	79.83	293.37	0.88	1.53	0.00	unsaturated	25.00	0.00	0.00	281.50	1.06	299.52	421.86	0.95	0.58	1.07	2.00	n.a.	2.00	NO
4.300	14.108	298.89	192.60	3.12	81.73	81.73	270.38	0.68	1.48	0.00	unsaturated	25.00	0.00	0.00	192.60	1.06	203.67	295.62	0.95	0.58	1.06	2.00	n.a.	2.00	NO
4.400	14.436	298.56	88.22	0.73	83.63	83.63	454.68	0.72	1.35	0.00	unsaturated	25.00	0.00	0.00	88.22	1.08	95.12	152.67	0.95	0.58	1.03	0.28	n.a.	2.00	NO
4.500	14.764	298.24	41.42	0.60	85.53	85.53	508.70	0.55	1.23	0.00	unsaturated	25.00	0.00	0.00	41.42	1.09	45.23	86.95	0.94	0.58	1.02	0.12	n.a.	2.00	NO
4.600	15.092	297.91	83.09	0.69	87.43	87.43	469.69	0.45	1.19	0.00	unsaturated	25.00	0.00	0.00	83.09	1.06	88.21	143.56	0.94	0.58	1.02	0.24	n.a.	2.00	NO
4.700	15.420	297.58	205.62	1.04	89.33	89.33	460.41	0.34	1.10	0.00	unsaturated	25.00	0.00	0.00	205.62	1.03	212.39	307.11	0.94	0.57	1.04	2.00	n.a.	2.00	NO
4.800	15.748	297.25	322.94	1.04	91.23	91.23	406.88	0.28	1.08	0.00	unsaturated	25.00	0.00	0.00	322.94	1.03	331.73	464.28	0.94	0.57	1.03	2.00	n.a.	2.00	NO
4.900	16.076	296.92	379.33	1.04	93.13	93.13	317.43	0.57	1.37	0.00	unsaturated	25.00	0.00	0.00	379.33	1.02	387.54	537.78	0.94	0.57	1.02	2.00	n.a.	2.00	NO
5.000	16.404	296.60	412.20	1.31	95.03	95.03	165.66	1.42	1.86	0.00	unsaturated	25.00	0.00	0.00	412.20	1.02	418.87	579.05	0.94	0.57	1.02	2.00	n.a.	2.00	NO
5.100	16.732	296.27	489.82	1.72	96.94	96.94	68.66	2.39	2.29	0.00	unsaturated	25.00	0.00	0.00	489.82	1.01	495.16	679.52	0.93	0.57	1.01	2.00	n.a.	2.00	NO

LIQUEFACTION TRIGGERING ANALYSIS
LOS ANGELES WATER WHEEL
LOS ANGELES, CALIFORNIA

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5.200	17.060	295.94	542.32	2.01	98.84	98.84	108.13	0.63	1.76	0.00	unsaturated	25.00	0.00	0.00	542.32	1.01	545.43	745.72	0.93	0.57	1.01	2.00	n.a.	2.00	NO
5.300	17.388	295.61	503.91	2.63	100.74	100.74	211.05	0.27	1.32	0.00	unsaturated	25.00	0.00	0.00	503.91	1.00	504.26	691.51	0.93	0.57	1.00	2.00	n.a.	2.00	NO
5.400	17.717	295.28	462.10	3.12	102.64	102.64	224.51	0.66	1.53	0.00	unsaturated	25.00	0.00	0.00	462.10	1.00	460.14	633.40	0.93	0.57	1.00	2.00	n.a.	2.00	NO
5.500	18.045	294.96	442.89	1.45	104.54	104.54	251.89	0.80	1.55	0.00	unsaturated	25.00	0.00	0.00	442.89	0.99	438.88	605.40	0.93	0.57	0.99	2.00	n.a.	2.00	NO
5.600	18.373	294.63	398.69	1.17	106.44	106.44	233.50	0.86	1.59	0.00	unsaturated	25.00	0.00	0.00	398.69	0.99	393.21	545.25	0.92	0.56	0.98	2.00	n.a.	2.00	NO
5.700	18.701	294.30	312.34	1.21	108.34	108.34	203.60	0.49	1.48	0.00	unsaturated	25.00	0.00	0.00	312.34	0.98	306.61	431.20	0.92	0.56	0.98	2.00	n.a.	2.00	NO
5.800	19.029	293.97	332.32	1.14	110.24	110.24	178.51	0.29	1.40	0.00	unsaturated	25.00	0.00	0.00	332.32	0.98	324.73	455.07	0.92	0.56	0.97	2.00	n.a.	2.00	NO
5.900	19.357	293.64	432.41	2.01	112.14	112.14	144.57	0.27	1.46	0.00	unsaturated	25.00	0.00	0.00	432.41	0.97	420.64	581.37	0.92	0.56	0.97	2.00	n.a.	2.00	NO
6.000	19.685	293.31	553.32	2.73	114.04	113.49	88.19	0.35	1.71	0.00		25.00	0.00	0.00	553.32	0.97	535.87	733.14	0.92	0.56	0.96	2.00	2.00	2.00	NO
6.100	20.013	292.99	480.07	1.96	115.94	114.41	47.90	0.62	2.06	0.00		25.00	0.00	0.00	480.07	0.97	462.91	637.04	0.91	0.57	0.96	2.00	2.00	2.00	NO
6.200	20.341	292.66	409.32	2.19	117.84	115.33	33.16	0.97	2.29	0.00		25.00	0.00	0.00	409.32	0.97	393.00	544.97	0.91	0.57	0.96	2.00	2.00	2.00	NO
6.300	20.669	292.33	382.99	2.31	119.74	116.25	48.38	0.52	2.02	0.00		25.00	0.00	0.00	382.99	0.96	366.17	509.64	0.91	0.57	0.96	2.00	2.00	2.00	NO
6.400	20.997	292.00	429.07	1.79	121.64	117.17	53.35	0.36	1.91	0.00		25.00	0.00	0.00	429.07	0.96	408.53	565.43	0.91	0.58	0.96	2.00	2.00	2.00	NO
6.500	21.325	291.67	488.03	1.37	123.54	118.09	53.84	0.27	1.86	0.00		25.00	0.00	0.00	488.03	0.96	462.76	636.85	0.91	0.58	0.95	2.00	2.00	2.00	NO
6.600	21.654	291.35	450.30	1.54	125.45	119.01	52.90	0.80	2.08	0.00		25.00	0.00	0.00	450.30	0.96	425.27	587.47	0.91	0.58	0.95	2.00	2.00	2.00	NO
6.700	21.982	291.02	457.14	2.10	127.35	119.93	60.71	1.01	2.08	0.00		25.00	0.00	0.00	457.14	0.96	430.02	593.73	0.90	0.59	0.95	2.00	2.00	2.00	NO
6.800	22.310	290.69	458.32	2.02	129.25	120.85	51.70	0.94	2.12	0.00		25.00	0.00	0.00	458.32	0.95	429.45	592.98	0.90	0.59	0.95	2.00	2.00	2.00	NO
6.900	22.638	290.36	500.58	2.45	131.15	121.77	66.36	0.61	1.93	0.00		25.00	0.00	0.00	500.58	0.95	467.24	642.75	0.90	0.59	0.94	2.00	2.00	2.00	NO
7.000	22.966	290.03	647.11	3.35	133.05	122.68	158.51	0.67	1.65	0.00		25.00	0.00	0.00	647.11	0.95	601.73	819.88	0.90	0.59	0.94	2.00	2.00	2.00	NO
7.100	23.294	289.71	747.70	2.32	134.95	123.60	199.78	0.52	1.50	0.00		25.00	0.00	0.00	747.70	0.95	692.67	939.64	0.90	0.60	0.94	2.00	2.00	2.00	NO

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APPENDIX M

METROLINK STANDARD 5001 – PIPELINES FOR NON-FLAMMABLE SUBSTANCES ACROSS OR ALONG RIGHT-OF-WAY

NOTES:

1. SCOPE

PIPELINES INCLUDED UNDER THESE SPECIFICATIONS ARE THOSE INSTALLED TO CARRYSTEAM, WATER OR ANY NON-FLAMMABLE SUBSTANCE WHICH FROM ITS NATURE ORPRESSURE, MIGHT CAUSE DAMAGE IF ESCAPING ON OR IN THE VICINITY OF SCRRA PROPERTY. ADDITIONAL PIPELINES COVERED UNDER THESE STANDARDS INCLUDE SMALL DIAMETER PIPES USED TO INSTALL OR PROTECT FIBER OPTIC SYSTEMS AND TELECOMMUNICATION LINES. THESE STANDARDS SHALL BE USED IN CONJUNCTION WITH THE SCRRA DESIGN CRITERIA MANUAL, CHAPTER 9, UTILITIES, AND THE AREMA MANUAL OF RAILWAY ENGINEERING CHAPTER 1, PART 5.

2. GENERAL REQUIREMENTS

a. PIPELINES UNDER SCRRA TRACKS AND ACROSS SCRRA RIGHTS-OF-WAY SHALL BE ENCASED IN A LARGER PIPE OR CONDUIT CALLED THE CASING PIPE AS INDICATED IN FIGURE 1. EXCEPTION MAY BE GRANTED ON CASE BY CASE BASIS FOR NON-PRESSURE PIPELINE.
b. CASING PIPE AND NON-CASED PIPELINES SHALL BE DESIGNED TO CARRY COOPER'S E-80 RAILROAD LIVE LOADING WITH DIESEL IMPACT FACTOR AS PER AREMA.
c. PIPELINES SHALL BE LOCATED, WHERE PRACTICABLE, TO CROSS TRACKS AT APPROXIMATELY RIGHT ANGLES BUT PREFERABLY AT NO LESS THAN 45 DEGREES AND SHALL NOT BE PLACED WITHIN CULVERTS NOR UNDER RAILWAY BRIDGES.
d. TEST BORING OR OTHER SOIL INVESTIGATIONS, APPROVED BY SCRRA SHALL BE MADE, TO DETERMINE THE NATURE OF THE UNDERLYING MATERIAL FOR ALL PIPELINES WITH SIZES EQUAL OR GREATER THAN 48 INCHES IN DIAMETER AND A DEPTH FROM TOP OF PIPE TO BASE OF RAIL BETWEEN FIVE FEET SIX INCHES AND TEN FEET. THE TEST BORING SHOULD BE MADE ON THE CENTERLINE OF THE PIPE NEAR THE END OF THE BALLAST SECTION (IF POSSIBLE) ON EACH SIDE OF THE TRACKS AND AS DEEP AS THE BOTTOM OF THE BORE.
e. EXCEPTION TO ANY DESIGN, CONSTRUCTION, LOCATION OR SPECIFICATIONS CONTAINED IN THIS STANDARD MUST BE AUTHORIZED BY SCRRA. REQUESTS FOR EXCEPTIONS WILL BE CONSIDERED ONLY WHERE IT IS SHOWN THAT EXTREME HARDSHIP AND/OR UNUSUAL CONDITIONS PROVIDE JUSTIFICATION AND WHERE ALTERNATE MEASURES CAN BE USED IN KEEPING WITH THE INTENT OF THIS STANDARD. ALL REQUESTS FOR EXCEPTIONS SHALL BE FULLY DOCUMENTED WITH DESIGN DATA, CALCULATIONS, COST COMPARISONS AND OTHER PERTINENT INFORMATION.
f. ALL PIPELINES SHALL BE PROMINENTLY MARKED BY SIGNS OR MARKERS (MAINTAINED BY OWNER) LOCATED OVER THE PIPE.

3. CARRIER PIPE

a. CARRIER LINE PIPE AND JOINTS SHALL BE OF ACCEPTED MATERIAL AND CONSTRUCTION AS APPROVED BY THE SCRRA DIRECTOR OF ENGINEERING AND CONSTRUCTION. JOINTS FOR CARRIER LINE PIPE OPERATING UNDER PRESSURE SHALL BE MECHANICAL OR WELDED TYPE. THE PIPE SHALL BE LAID WITH SUFFICIENT SLACK SO THAT IT IS NOT IN TENSION.
b. CARRIER PIPES SHALL BE MANUFACTURED IN ACCORDANCE WITH THE FOLLOWING STANDARDS AND SPECIFICATIONS:

A. STEEL PIPE - ASTM OR API.
B. DUCTILE IRON PIPE - ANSI A21.51/AWWA C151, CLASS 56.
C. REINFORCED CONCRETE PIPE - ASTM C76, MINIMUM OF CLASS III (3000 D) RCP IS ACCEPTABLE WITHOUT CASING FOR LONGITUDINAL PIPE LOCATED 45 FEET OR MORE FROM THE CENTERLINE OF THE NEAREST TRACK.
D. VITRIFIED CLAY PIPE - ASTM C700.
E PVC PLASTIC PIPE - ASTM D1784, MINIMUM SCHEDULE 40 PIPE.
F. HIGH DENSITY POLYETHYLENE (HDPE) SOLID WALL PIPE - ASTM D1248.
G. SEE AREMA CHAPTER 1, SECTION 5.2 FOR NON-FLAMMABLE GAS PIPE LINES.

4. CASING PIPE

a. CASING PIPE AND JOINTS SHALL BE OF STEEL AND LEAK PROOF CONSTRUCTION, CAPABLE OF AREMA (COOPER E-80 LIVE LOAD) AND HAVE A SPECIFIED MINIMUM YIELD STRENGTH OF AT LEAST 35,000 PSI. THE INSIDE DIAMETER OF THE CASING PIPE SHALL BE AT LEAST TWO INCHES GREATER THAN THE LARGEST OUTSIDE DIAMETER OF THE CARRIER PIPE, JOINTS OR COUPLINGS FOR CARRIER PIPE LESS THAN SIX INCHES IN DIAMETER; AND AT LEAST FOUR INCHES GREATER FOR CARRIER PIPE SIX INCHES AND OVER IN DIAMETER. IN ALL CASES THE SPACE PROVIDED SHALL BE ADEQUATE TO ALLOW FOR REMOVAL WITHOUT DISTURBING THE CASING PIPE OR ROADBED.
b. TABLE 1 INDICATES A MINIMUM THICKNESS BASED UPON SUPERIMPOSED LOADS ONLY AND IT IS THE RESPONSIBILITY OF THE LICENSEE AND/OR THE INSTALLER TO PROVIDE A CASING WHICH IS ADEQUATE FOR THE LOADS THAT RESULT DURING INSTALLATION. THE WALL THICKNESS MAY BE DECREASED BY 0.063 INCH, IF THE CASING IS INSTALLED WITH A PROTECTIVE COATING AND IS CATHODICALLY PROTECTED, EXCEPT FOR DIAMETERS UNDER 14 INCHES.
c. CASING PIPE UNDER SCRRA TRACKS AND ACROSS SCRRA RIGHT-OF-WAY SHALL EXTEND THE GREATER OF THE FOLLOWING DISTANCES, MEASURED AT RIGHT ANGLE TO CENTERLINE OF TRACK. IF ADDITIONAL TRACKS ARE CONSTRUCTED IN THE FUTURE, THE CASING SHALL BE EXTENDED AT THE LICENSEE'S EXPENSE.
A. ACROSS THE ENTIRE WIDTH OF THE SCRRA RIGHT-OF-WAY.
B. THREE FEET BEYOND THE DITCH LINE.
C. TWO FEET BEYOND THE TOE OF SLOPE.
D. A MINIMUM DISTANCE OF 25 FEET FROM EACH SIDE OF THE CENTERLINE OF OUTSIDE TRACK WHEN CASING IS SEALED AT BOTH ENDS AND,
E. A MINIMUM DISTANCE OF 45 FEET FROM EACH SIDE OF THE CENTERLINE OF OUTSIDE TRACK WHEN CASING IS OPEN AT BOTH ENDS.
d. THE DEPTH OF THE CASING SHALL NOT BE LESS THAN AS SHOWN IN FIGURE 1. HORIZONTAL DIRECTIONAL DRILLING OF A PIPELINE NOT CARRYING LIQUID SUBSTANCES AND HAVING A NOMINAL DIAMETER OF SIX INCHES OR LESS SHALL HAVE A MINIMUM COVER OF SIX FEET FROM BASE OF RAIL TO TOP OF PIPELINE. HORIZONTAL DIRECTIONAL DRILLING FOR ALL PIPELINES EXCEEDING SIX INCHES NOMINAL DIAMETER, OR FOR ANY NOMINAL DIAMETER PIPELINE CARRYING LIQUID SUBSTANCES SHALL HAVE A MINIMUM COVER FROM BASE OF RAIL TO TOP OF PIPELINE OF 12 FEET. INSTALLATION SHALL BE BY THE DRY BORE METHOD ONLY.

5. CONSTRUCTION

a. CASING PIPE SHALL BE CONSTRUCTED AS TO PREVENT LEAKAGE OF ANY SUBSTANCE FROM THE CASING THROUGHOUT ITS LENGTH, EXCEPT AT ENDS. CASING SHALL BE INSTALLED AS TO PREVENT THE FORMATION OF A WATERWAY UNDER THE ROADBED, AND WITH AN EVEN BEARING THROUGHOUT ITS LENGTH, AND SHALL SLOPE TO ONE END (EXCEPT FOR LONGITUDINAL OCCUPANCY).
b. THE FACES OF ALL PITS (JACKING AND RECEIVING) SHALL BE LOCATED A MINIMUM OF 25 FEET FROM THE CENTERLINE OF THE NEAREST TRACK, MEASURED AT RIGHT ANGLES TO TRACK. SHORING, IF REQUIRED, SHALL MEET SCRRA'S EXCAVATION SUPPORT GUIDELINES.
c. FOR ALL PIPELINES WITH SIZES EQUAL OR GREATER THAN 48 INCHES, RAIL ELEVATIONS OVER THE WORK MUST BE MONITORED AT INTERVALS PRESCRIBED BY SCRRA TO DETECT ANY TRACK MOVEMENT. MOVEMENTS OVER 1/4" VERTICALLY SHALL BE IMMEDIATELY REPORTED TO SCRRA. SCRRA WILL SURFACE THE TRACK SEVERAL TIMES IN ONE YEAR IF THERE IS ANY MOVEMENT AT LICENSEE AND/OR INSTALLER'S COST.
d. THE METHOD OF CONSTRUCTION SHALL MEET ALL CURRENT AREMA AND "GREEN BOOK" SPECIFICATIONS AND REQUIREMENTS.
e. THE BORING, TUNNELING OR JACKING OPERATION SHALL BE PROGRESSED ON A 24 HOUR BASIS WITHOUT STOPPAGE WHEN THE CASING IS 20 FEET FROM THE CENTERLINE OF THE NEAREST TRACK.
f. THE BORING, TUNNELING OR JACKING INSTALLATION SHALL HAVE A BORED HOLE DIAMETER ESSENTIALLY THE SAME AS THE OUTSIDE DIAMETER OF THE PIPE PLUS THE THICKNESS OF THE PROTECTIVE COATING. IF VOIDS SHOULD DEVELOP OR IF THE BORED HOLE DIAMETER IS GREATER THAN THE OUTSIDE DIAMETER OF THE PIPE (INCLUDING COATING) BY MORE THAN APPROXIMATELY 1 INCH, THE SPACE SHALL BE FILLED BY GROUTING OR OTHER REMEDIAL MEASURES TAKEN AS APPROVED BY SCRRA.
g. THE BORE AND JACK METHOD (PUSHING PIPE INTO THE EARTH WITH A BORING AUGER ROTATING WITHIN PIPE TO REMOVE SPOIL) IS ACCEPTABLE.
h. JACKING METHOD (PUSHING SECTIONS OF PIPE INTO POSITION WITH JACKS PLACED AGAINST A BACKSTOP AND EXCAVATION PERFORMED BY HAND FROM WITHIN THE JACKING SHIELD AT THE HEAD OF THE PIPE) IS ACCEPTABLE. IMMEDIATELY AFTER COMPLETION OF JACKING OPERATION, THE INSTALLATION SHALL BE PRESSURE GROUTED.
i. TUNNELING METHOD (PLACING RINGS OF LINER PLATE WITHIN THE TAIL SECTION OF A TUNNELING SHIELD OR TUNNELING MACHINE) IS ACCEPTABLE. TUNNELING SHALL NOT BE CONSIDERED WHERE LESS THAN SIX FEET OF COVER EXISTS OR WHERE EXCESSIVELY SANDY, LOOSE OR ROCKY SOILS ARE ANTICIPATED.
j. HORIZONTAL DIRECTIONAL DRILLING METHOD (BORING A SMALL DIAMETER PILOT HOLE ON A DESIRED VERTICAL AND HORIZONTAL ALIGNMENT USING A CUTTING HEAD WITH VISCOUS SLURRY AND PULLING A PIPE WITH A REAMER) IS ACCEPTABLE.
k. PIPE RAMMING METHOD (PUSHING A SOLID STEEL ROD UNDER THE ROADBED, ATTACHING A CONE SHAPED EXPANDER TO THE END OF THE ROD, ATTACHING A CASING PIPE TO THE EXPANDER AND PULLING BACK THE ROD) IS NOT ACCEPTABLE.
l. THE USE OF WATER JETTING TO FACILITATE CASING PLACEMENT AND SPOIL REMOVAL IS NOT PERMITTED.
m. JACKING, BORING, OR TUNNELING PIPES EQUAL TO OR GREATER THAN 48 INCHES NOMINAL DIAMETER WILL NOT BE ALLOWED WITH LESS THAN ONE AND ONE HALF TIMES THE PIPES NOMINAL DIAMETER OF COVER FROM BASE OF RAIL TO TOP OF PIPELINE.
n. JACKING AND BORING OF PIPELINES WITH A NOMINAL DIAMETER GREATER THAN 72 INCHES SHALL NOT BE ALLOWED UNLESS OTHERWISE APPROVED BY SCRRA.

6. SEALS AND SUPPORTS

THE ENDS OF CASING ARE TO BE SUITABLY SEALED AGAINST THE ENTRANCE OF FOREIGN MATERIAL, BUT ARE NOT TO BE TIGHTLY SEALED. ALL SUPPORTS, INSULATORS AND CENTERING DEVICES FOR THE CARRIER PIPE SHALL BE SO DESIGNED AND CONSTRUCTED THAT NO LOADS FROM THE ROADBED, TRAFFIC OR CASING PIPE ITSELF ARE TRANSMITTED TO CARRIER PIPE. THE SPACING OF SUCH SUPPORTS LONGITUDINALLY SHALL NOT BE GREATER THAN TEN FEET.

7. SHUT-OFF VALVES

ACCESSIBLE EMERGENCY SHUT-OFF VALVES SHALL BE INSTALLED WITHIN EFFECTIVE DISTANCES EACH SIDE OF THE TRACK AS MUTUALLY AGREED TO BY SCRRA AND THE PIPELINE COMPANY. WHERE PIPELINES ARE PROVIDED WITH AUTOMATIC CONTROL STATIONS AT LOCATIONS AND WITHIN DISTANCES APPROVED BY SCRRA DIRECTOR OF ENGINEERING AND CONSTRUCTION, NO ADDITIONAL VALVES SHALL BE REQUIRED. SHUT-OFF VALVES ON SCRRA RIGHT-OF-WAY SHOULD BE AVOIDED.

8. LONGITUDINAL PIPELINES

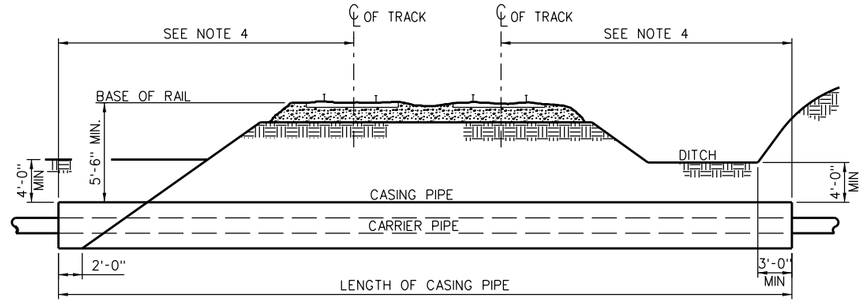
PIPELINES LAID LONGITUDINALLY ON SCRRA RIGHT-OF-WAY SHALL BE LOCATED AS FAR AS PRACTICABLE FROM ANY TRACKS OR OTHER IMPORTANT STRUCTURES AND AS CLOSE TO THE RAILROAD PROPERTY LINE AS POSSIBLE. IF LOCATED WITHIN 25 FEET OF THE CENTERLINE OF ANY TRACK OR WHERE THERE IS DANGER OF DAMAGE TO ANY BRIDGE, BUILDING OR STRUCTURE, THE CARRIER PIPE SHALL BE ENCASED OR OF SPECIAL DESIGN AS APPROVED BY SCRRA DIRECTOR OF ENGINEERING AND CONSTRUCTION. PIPELINES SHALL BE BURIED NOT LESS THAN FOUR (4) FEET FROM THE GROUND SURFACE TO THE TOP OF THE PIPE.

9. APPROVAL OF PLANS

SCRRA'S RIGHT-OF-WAY ENCROACHMENT APPLICATION, PLAN REVIEW FEES, AND PLANS FOR PROPOSED INSTALLATION SHALL BE SUBMITTED TO SCRRA FOR APPROVAL PRIOR TO CONSTRUCTION. PLANS SHALL BE DRAWN TO SCALE SHOWING THE RELATION OF THE PROPOSED PIPELINE TO SCRRA TRACKS, ANGLE OF CROSSING, LOCATION OF VALVES, SCRRA SURVEY STATION, RIGHT-OF-WAY LINES AND GENERAL LAYOUT OF TRACKS AND SCRRA FACILITIES. PLANS SHOULD ALSO SHOW A CROSS SECTION (OR SECTIONS) FROM FIELD SURVEY, SHOWING PIPE IN RELATION TO ACTUAL PROFILE OF GROUND AND TRACKS. ADDITONAL INFORMATION ON APPROVAL PROCESSES AND REQUIREMENTS ARE AVAILABLE ON SCRRA'S WEBSITE AT WWW.METROLINKTRAINS.COM.

10. EXECUTION OF WORK

THE PIPELINE REAL ESTATE AGREEMENT AND SCRRA'S TEMPORARY RIGHT-OF-ENTRY AGREEMENT (SCRRA FORM NO. 36) SHALL BE FULLY EXECUTED BEFORE ANY WORK WILL BE ALLOWED ON SCRRA RIGHT-OF-WAY. THE EXECUTION OF WORK ON SCRRA RIGHTS-OF-WAY, INCLUDING THE SUPPORTING OF TRACKS, SHALL BE SUBJECT TO THE INSPECTION AND DIRECTION OF SCRRA RIGHT-OF-WAY ENGINEER OR HIS/HER AUTHORIZED REPRESENTATIVE. THE INSTALLER SHALL PERFORM THE CONSTRUCTION OR MAINTENANCE WORK IN SUCH A MANNER AND AT SUCH TIMES AS SHALL NOT ENDANGER OR INTERFERE WITH SCRRA'S OPERATIONS, INCLUDING RELATION TO THE PROPER MANNER OF PROTECTING THE TRACKS, SIGNALS, FIBER OPTIC CABLES, PIPELINES, OTHER PROPERTY AND TENANTS OR LICENSEES AT OR IN THE VICINITY OF THE WORK DURING THE PERIOD OF CONSTRUCTION.



CASING REQUIREMENTS - FIGURE 1

TABLE 1

STEEL CASING (UNCOATED AND UNPROTECTED)			
NOMINAL DIAMETER (INCHES)	MIN. WALL THICKNESS (INCHES)	NOMINAL DIAMETER (INCHES)	MIN. WALL THICKNESS (INCHES)
14" & UNDER	0.250" (1/4")	44" & 46"	0.656" (21/32")
16"	0.281" (9/32")	48"	0.688" (11/16")
18"	0.312" (5/16")	50"	0.719" (23/32")
20" & 22"	0.344" (11/32")	52"	0.750" (3/4")
24"	0.375" (3/8")	54"	0.781" (25/32")
26"	0.406" (13/32")	56" & 58"	0.812" (13/16")
28"	0.438" (7/16")	60"	0.844" (27/32")
30"	0.469" (15/32")	62"	0.875" (7/8")
32"	0.500" (1/2")	64"	0.906" (29/32")
34" & 36"	0.531" (17/32")	66" & 68"	0.938" (15/16")
38"	0.562" (9/16")	70"	0.969" (31/32")
40"	0.594" (19/32")	72"	1.000" (1")
42"	0.625" (5/8")	OVER 72" MUST BE APPROVED BY SCRRA	

REV.	DATE	DESCRIPTION	DES.	ENG.
X	XX-XX-XX	REVISION	XX	XX

DRAWN BY: A. CARLOS DATE: 03/31/2011

ASSISTANT DIRECTOR: STANDARDS & DESIGN

DIRECTOR OF ENGINEERING AND CONSTRUCTION

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METROLINK®
SOUTHERN CALIFORNIA REGIONAL RAIL AUTHORITY
ONE GATEWAY PLAZA, 12TH FLOOR, L. A., CA. 90012

ENGINEERING STANDARDS

PIPE LINES
FOR NON – FLAMMABLE SUBSTANCES
ACROSS OR ALONG RIGHT OR WAY

STANDARD 5001
SCALE: NTS
REVISION –
SHEET 1 OF 1
CADD FILE: ES5001

UserName•› carlosa Date Plotted: 10/5/2011 2:27:50 PM Plot Driver•› S:\Plot Drivers\pdf.plt FileName•› s:\V8EngStds\5000\ES5001.dgn

Appendix F
EDR

Water Wheel
1745 North Spring Street
Los Angeles, CA 90012

Inquiry Number: 3348112.6
June 19, 2012

The EDR-City Directory Abstract

Environmental Data Resources Inc

440 Wheelers Farms Road
Milford, CT 06461
800.352.0050
www.edrnet.com

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SECTION

Executive Summary

Findings

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

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This Report contains certain information obtained from a variety of public and other sources reasonably available to Environmental Data Resources, Inc. It cannot be concluded from this Report that coverage information for the target and surrounding properties does not exist from other sources. **NO WARRANTY EXPRESSED OR IMPLIED, IS MADE WHATSOEVER IN CONNECTION WITH THIS REPORT. ENVIRONMENTAL DATA RESOURCES, INC. SPECIFICALLY DISCLAIMS THE MAKING OF ANY SUCH WARRANTIES, INCLUDING WITHOUT LIMITATION, MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE OR PURPOSE. ALL RISK IS ASSUMED BY THE USER. IN NO EVENT SHALL ENVIRONMENTAL DATA RESOURCES, INC. BE LIABLE TO ANYONE, WHETHER ARISING OUT OF ERRORS OR OMISSIONS, NEGLIGENCE, ACCIDENT OR ANY OTHER CAUSE, FOR ANY LOSS OR DAMAGE, INCLUDING, WITHOUT LIMITATION, SPECIAL, INCIDENTAL, CONSEQUENTIAL, OR EXEMPLARY DAMAGES. ANY LIABILITY ON THE PART OF ENVIRONMENTAL DATA RESOURCES, INC. IS STRICTLY LIMITED TO A REFUND OF THE AMOUNT PAID FOR THIS REPORT.** Purchaser accepts this Report "AS IS". Any analyses, estimates, ratings, environmental risk levels or risk codes provided in this Report are provided for illustrative purposes only, and are not intended to provide, nor should they be interpreted as providing any facts regarding, or prediction orforecast of, any environmental risk for any property. Only a Phase I Environmental Site Assessment performed by an environmental professional can provide information regarding the environmental risk for any property. Additionally, the information provided in this Report is not to be construed as legal advice.

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EXECUTIVE SUMMARY

DESCRIPTION

Environmental Data Resources, Inc.'s (EDR) City Directory Abstract is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's City Directory Abstract includes a search and abstract of available city directory data. For each address, the directory lists the name of the corresponding occupant at five year intervals.

Business directories including city, cross reference and telephone directories were reviewed, if available, at approximately five year intervals for the years spanning 1920 through 2006. This report compiles information gathered in this review by geocoding the latitude and longitude of properties identified and gathering information about properties within 332 feet of the target property.

A summary of the information obtained is provided in the text of this report.

RESEARCH SUMMARY

The following research sources were consulted in the preparation of this report. An "X" indicates where information was identified in the source and provided in this report.

Year	Source	TP	Adjoining	Text Abstract	Source Image
2006	Haines Company, Inc.	X	X	X	-
2004	Haines Company	-	-	-	-
2003	Haines & Company	-	-	-	-
2001	Haines & Company, Inc.	-	-	-	-
2000	Haines & Company	X	X	X	-
1999	Haines Company	-	-	-	-
1996	GTE	-	-	-	-
1995	Pacific Bell	-	-	-	-
1992	PACIFIC BELL WHITE PAGES	-	-	-	-
1991	Pacific Bell	-	-	-	-
1990	Pacific Bell	X	X	X	-
1986	Pacific Bell	-	X	X	-
1985	GTE	-	-	-	-
1981	Pacific Telephone	X	X	X	-
1980	Pacific Telephone	-	-	-	-
1976	Pacific Telephone	-	X	X	-
1975	Pacific Telephone Co	-	-	-	-
1972	R. L. Polk & Co.	-	-	-	-
1971	Pacific Telephone	-	X	X	-
1970	GTE	-	-	-	-
1969	Pacific Telephone	-	-	-	-
1967	Pacific Telephone	-	X	X	-
1966	Pacific Telephone	-	-	-	-
1965	GTE	-	-	-	-
1964	Pacific Telephone	-	X	X	-
1963	Pacific Telephone	-	-	-	-

EXECUTIVE SUMMARY

Year	Source	TP	Adjoining	Text Abstract	Source Image
1962	Pacific Telephone	-	X	X	-
1961	Luskey Brothers & Co	-	-	-	-
1960	Pacific Telephone	-	X	X	-
1958	Pacific Telephone	-	X	X	-
1957	Pacific Telephone	-	X	X	-
1956	General Telephone Company Publishers	-	-	-	-
1955	Home Directory Service	-	-	-	-
1954	R. L. Polk & Co.	-	X	X	-
1952	Los Angeles Directory Co.	-	-	-	-
1951	Pacific Telephone & Telegraph Co.	-	X	X	-
1950	Pacific Telephone	-	X	X	-
1949	Los Angeles Directory Co.	-	-	-	-
1948	Associated Telephone Company, Ltd.	-	-	-	-
1947	Pacific Directory Co.	-	X	X	-
1946	Southern California Telephone Co	-	-	-	-
1945	R. L. Polk & Co.	-	-	-	-
1944	R. L. Polk & Co.	-	-	-	-
1942	Los Angeles Directory Co.	-	X	X	-
1940	Los Angeles Directory Co.	-	X	X	-
1939	Los Angeles Directory Co.	-	-	-	-
1938	Los Angeles Directory Co.	-	-	-	-
1937	Los Angeles Directory Co.	-	X	X	-
1936	Los Angeles Directory Co.	-	-	-	-
1935	Los Angeles Directory Co.	-	-	-	-
1934	Los Angeles Directory Co.	-	-	-	-
1933	Los Angeles Directory Co.	-	X	X	-
1932	Los Angeles Directory Co.	-	-	-	-
1931	TRIBUNE-NEWS PUBLISHING CO.	-	-	-	-
1930	Los Angeles Directory Co.	-	-	-	-
1929	Los Angeles Directory Co.	-	X	X	-
1928	Los Angeles Directory Co.	-	X	X	-
1927	Kaasen Directory Company Publishers	-	-	-	-
1926	Los Angeles Directory Co.	-	-	-	-
1925	Los Angeles Directory Co.	-	-	-	-
1924	Los Angeles Directory Co.	-	X	X	-
1923	Los Angeles Directory Co.	-	-	-	-
1921	Los Angeles Directory Co.	-	-	-	-
1920	Los Angeles Directory Co.	-	-	-	-

EXECUTIVE SUMMARY

MAP INFORMATION

The Overview Map provides information on nearby property parcel boundaries. Properties on this map that were selected for research are listed below the map.



SELECTED ADDRESSES

The following addresses were selected by the client. Detailed findings are contained in the findings section. An "X" indicates where information was identified.

Address	***Type***	***Findings***
1745 North Spring Street	Map ID: 1	X
1756 N SPRING ST	Map ID: 12	X
1700 N SPRING ST	Map ID: 18	X
315 AURORA ST	Map ID: 2	X
1771 SPRING ST	Map ID: 20	
235 S AVENUE 17	Map ID: 21	X
1753 N SPRING ST	Map ID: 4	

EXECUTIVE SUMMARY

Address	***Type***	***Findings***
1727 N SPRING ST	Map ID: 5	X
314 AURORA ST	Map ID: 6	
312 AURORA ST	Map ID: 7	
1721 N SPRING ST	Map ID: 9	X

FINDINGS

TARGET PROPERTY INFORMATION

ADDRESS

1745 North Spring Street
Los Angeles, CA 90012

MapID: 1

FINDINGS DETAIL

Target Property research detail.

Year	*Uses*	*Source*
1990	CATHAY IMPORT & EXPORT INC	Pacific Bell
	LAP TANG INTERNATL	Pacific Bell
	LIM FASHION	Pacific Bell
	MAGIC DRAGON TRADING CO	Pacific Bell
	T & S CO	Pacific Bell
1981	MAN WAH IMPORTS WHSE	Pacific Telephone
2006	APPARREL 84 N	Haines Company, Inc.
	FAREAST 32 23 L m	Haines Company, Inc.
	FASHION	Haines Company, Inc.
	FASTSTITCH	Haines Company, Inc.
	FTrm LNES 32 s 44	Haines Company, Inc.
	K 4 M APi ARELS 323 r A	Haines Company, Inc.
	New CEn	Haines Company, Inc.
	T SASUI C 323 22 S 95 S	Haines Company, Inc.
	X&MAPArjt A L	Haines Company, Inc.
2000	A M A FASHION INC	Haines & Company
	CATHAY IMPORT & EXPRT	Haines & Company
	DIANAS FASHIONS	Haines & Company
	HUMPIE DUMPIE USA INC	Haines & Company
	K S GARMENT INC	Haines & Company

FINDINGS

ADJOINING PROPERTY DETAIL

The following Adjoining Property addresses were researched for this report. Detailed findings are provided for each address.

AURORA

315 AURORA

Year	Uses	Source
1971	Hys Used Container Co	Pacific Telephone
	Hys Nursery Can Supply	Pacific Telephone
1967	Hys Nursery Can Supply	Pacific Telephone
	Hys Used Container Co	Pacific Telephone
1962	Hys Used Container Co	Pacific Telephone

317 AURORA

Year	Uses	Source
1942	BURTON Harry C Verna E trucking	Los Angeles Directory Co.

AURORA LN

315 AURORA LN

Year	Uses	Source
1960	HY S USED CONTAINER CO	Pacific Telephone

AURORA ST

Map ID: 2

315 AURORA ST

Year	Uses	Source
1971	Hys Used Container Co	Pacific Telephone
	Hys Nursery Can Supply	Pacific Telephone
1967	Hys Nursery Can Supply	Pacific Telephone
	Hys Used Container Co	Pacific Telephone
1962	Hys Used Container Co	Pacific Telephone
1960	HY S USED CONTAINER CO	Pacific Telephone

317 AURORA ST

Year	Uses	Source
1951	Aurora Burton Harry Hoisting & Rigging Engnrs	Pacific Telephone & Telegraph Co.

FINDINGS

BAKER ST

1791 BAKER ST

Year	Uses	Source
2006	VALLEY CREST	Haines Company, Inc.
	LANDSCAPE	Haines Company, Inc.

1799 BAKER ST

Year	Uses	Source
2006	LNDSCP OEVLP	Haines Company, Inc.
	VALLEY CREST	Haines Company, Inc.

N SPRING

1714 N SPRING

Year	Uses	Source
1942	TAYLOR Melvin F restr	Los Angeles Directory Co.
1937	TAYLOR Melvin F Jessie A restr	Los Angeles Directory Co.
	TAYLOR Allan S H clk	Los Angeles Directory Co.
1929	FORSYTHE J Arth Rose restr	Los Angeles Directory Co.
1924	h	Los Angeles Directory Co.
	BROOKS & Carr A L Brooks G D Carr rest	Los Angeles Directory Co.
	CARR Geo D Brooks & Carr r	Los Angeles Directory Co.

1717 N SPRING

Year	Uses	Source
1986	YONG-HSING INC	Pacific Bell

1719 N SPRING

Year	Uses	Source
1986	CHEN CO	Pacific Bell

1726 N SPRING

Year	Uses	Source
1990	SUNNY TRADING	Pacific Bell
1986	CALIFORNIA PENTA CORP	Pacific Bell
	AUBAINE INTERNATL	Pacific Bell

1731 N SPRING

Year	Uses	Source
1990	NG FUNG HONG INC	Pacific Bell

Year	Uses	Source
1986	FAR EAST GROCERY INC	Pacific Bell
	TRI-8 IMPORT & EXPORT CORP	Pacific Bell
1981	MAN WAH IMPORTS FACTORY	Pacific Telephone
1962	Standard Oil Company of California Western Operations Inc	Pacific Telephone
	Dist Sales Ofc	Pacific Telephone
	Sales Plant	Pacific Telephone

1733 N SPRING

Year	Uses	Source
1990	H C FOODS CO LTD	Pacific Bell
1986	T & S COMPANY	Pacific Bell

1746 N SPRING

Year	Uses	Source
1990	IMPACT PLUS INC	Pacific Bell
	BORTZ OIL CO INC	Pacific Bell
1986	BORTZ OIL CO INC	Pacific Bell

N SPRING ST

Map ID: 18

1700 N SPRING ST

Year	Uses	Source
2000	J ENTERPRISE LTD	Haines & Company
1986	A C PRODUCT	Pacific Bell
1981	KOWLOON MARKET WHSE	Pacific Telephone
	KEYLIGHT INDUSTRIES INC	Pacific Telephone
	SPORT LIGHTS	Pacific Telephone
1976	KEYLIGHT INDUSTRIES INC	Pacific Telephone
	Glasbend Inc	Pacific Telephone
	Westco Casting Co Inc	Pacific Telephone
1971	CRAVEN RICHARD R CO mfrs rep	Pacific Telephone
	Glasbend Inc	Pacific Telephone
	Westco Casting Co Inc	Pacific Telephone
1960	TERRY JERI M MRS	Pacific Telephone
1958	S & M LAMP CO	Pacific Telephone
	Di Giorgio Wine Co	Pacific Telephone
1957	PARR JACK	Pacific Telephone
1954	VAN RIPER W E	R. L. Polk & Co.
1951	N Sprng Old Santa Fe Winery	Pacific Telephone & Telegraph Co.

FINDINGS

Year	Uses	Source
1951	N Sprng Santa Fe Vintage Co	Pacific Telephone & Telegraph Co.
1950	REED E S R	Pacific Telephone
1947	Reed E S	Pacific Directory Co.
1940	Smoak J	Los Angeles Directory Co.
1933	CENTRAL COMPANY INC R C Morris Pres Saml Splegelman Sec Treas Parlor Furniture Manufactures	Los Angeles Directory Co.
1928	Vacant	Los Angeles Directory Co.

1714 N SPRING ST

Year	Uses	Source
1954	888COTTA FRANCES	R. L. Polk & Co.
1947	Guthrie C A	Pacific Directory Co.
1940	ARunnells H A	Los Angeles Directory Co.

1715 N SPRING ST

Year	Uses	Source
1964	BIVENS PHOEBE	Pacific Telephone
1950	GREEN ROBT AR	Pacific Telephone
1947	Green R A	Pacific Directory Co.
1940	Cook L H	Los Angeles Directory Co.

1717 N SPRING ST

Year	Uses	Source
1947	Stewart 0 C	Pacific Directory Co.
1940	Stewart C O	Los Angeles Directory Co.
1928	Stewart C	Los Angeles Directory Co.

1718 N SPRING ST

Year	Uses	Source
1947	Cole H R	Pacific Directory Co.

Map ID: 9

1721 N SPRING ST

Year	Uses	Source
2006	I FASHI 323 227 s	Haines Company, Inc.
2000	HUNG Raymond RIN FASHION	Haines & Company
1990	YONG-HSIN INC	Pacific Bell
	YONG-HSIN INC	Pacific Bell
1986	YONG-HSIN INC	Pacific Bell
	YONG-HSIN INC	Pacific Bell
1981	SPRING AUTO WRECKING	Pacific Telephone

FINDINGS

Year	Uses	Source
1981	CROWN FILTER CO	Pacific Telephone
1976	Leonard R J Co Inc	Pacific Telephone
	Super Micronic Filter Corp Leonard R J Co Inc	Pacific Telephone

1723 N SPRING ST

Year	Uses	Source
1947	Parkinson F G	Pacific Directory Co.
1940	AMc Donald G E Rev	Los Angeles Directory Co.

1726 N SPRING ST

Year	Uses	Source
2006	L A Ut YLMT i B 23s 24 m	Haines Company, Inc.
	LALU Cif T 4 W 1a ia 21tt I	Haines Company, Inc.
1960	HUNTRODS ERMA MRS	Pacific Telephone
1947	Huntrods Frank	Pacific Directory Co.
1940	Applegate Arman	Los Angeles Directory Co.

Map ID: 5

1727 N SPRING ST

Year	Uses	Source
2006	1cw sms sc 7w 3t i	Haines Company, Inc.
	GEOF LOSMURE 3 Z	Haines Company, Inc.
2000	DONIS Alex	Haines & Company
	DURKIN Ken	Haines & Company
	TORREZ Eloy	Haines & Company
1990	WHITE FRANCES	Pacific Bell
	MARQUES DO JADRAQUE	Pacific Bell
	WOMAN S BUILDING THE	Pacific Bell
	WOMEN S BUILDING THE	Pacific Bell
1986	CISPES	Pacific Bell
	WGC TYPESETTIG	Pacific Bell
	WOMAN S BUILDING THE	Pacific Bell
	GAULKE C	Pacific Bell
	ELLIS G	Pacific Bell
	WHITE FRANCES	Pacific Bell
	WOMEN S BUILDING THE	Pacific Bell
	WOMEN S GRAPHIC CENTER STUDIO	Pacific Bell
	WOMEN S GRAPHIC CENTER TYPESETTING	Pacific Bell
	COULTER DOUG	Pacific Bell

FINDINGS

Year	Uses	Source
1981	WOMAN S BULIDING EXTENSION PROGRAM	Pacific Telephone
	WOMAN S BULIDING THE	Pacific Telephone
	WOMEN GRAPHIC CENTER TYPESETTING	Pacific Telephone
	FEMINIST STUDIO WORKSHOP	Pacific Telephone
	HERSELF HEALTH CLINIC	Pacific Telephone
1976	Sisterhood Book Store	Pacific Telephone
	Canis Gallery	Pacific Telephone
	Feminist Studio Workshop	Pacific Telephone
	Womans Building The	Pacific Telephone
	Womens Building Extension Program	Pacific Telephone
1967	Los Angeles Trunk Mfg Co	Pacific Telephone
1962	Los Angeles Trunk Mfg Co	Pacific Telephone
1950	WOOSWRD W C R	Pacific Telephone
1947	Woodward W C	Pacific Directory Co.
1940	Woodward W C	Los Angeles Directory Co.
1929	LOS ANGELES Woodworking Co C R Kayser pres L T Turner sec treas furn mfrs	Los Angeles Directory Co.
1924	STANDARD OIL CO Sales Dept J E Balsley Dist Sales Mgr	Los Angeles Directory Co.

1728 N SPRING ST

Year	Uses	Source
1957	DODDS GILBERT L	Pacific Telephone
1947	Vacant	Pacific Directory Co.

1731 N SPRING ST

Year	Uses	Source
2006	H&TS	Haines Company, Inc.
1964	MCELHINNEY J T	Pacific Telephone
1960	MC ELHINNEY J T	Pacific Telephone
1958	L A Sales Plant	Pacific Telephone
	Standard Oil Company of California Western Operations Inc Marketing Plants	Pacific Telephone
	L A Dist Sales Ofc	Pacific Telephone
	Standard Oil Company of California Western Operations Inc Wholesale Sales	Pacific Telephone
1957	EULEHINNEY J1	Pacific Telephone
1954	MCELHINNEY J T R	R. L. Polk & Co.
1950	MCELHINNEYJ T R	Pacific Telephone
1947	Blandford G A	Pacific Directory Co.

FINDINGS

Year	Uses	Source
1940	Hull G C	Los Angeles Directory Co.

1733 N SPRING ST

Year	Uses	Source
2006	OFFCE	Haines Company, Inc.
	SERWOES	Haines Company, Inc.

1734 N SPRING ST

Year	Uses	Source
1950	BENT ERNEST N R	Pacific Telephone
1947	Mc Gregor D W	Pacific Directory Co.

1735 N SPRING ST

Year	Uses	Source
1964	HOSTETLER HETTIE L	Pacific Telephone
1960	HOSTETLER HETTIE L	Pacific Telephone
1957	HOSTETLER HETTIE L	Pacific Telephone
1954	HOSTETLER V D	R. L. Polk & Co.
1947	Hostetler V D	Pacific Directory Co.
1940	SAHostetler V D	Los Angeles Directory Co.

1736 N SPRING ST

Year	Uses	Source
1928	Vacant	Los Angeles Directory Co.

1738 N SPRING ST

Year	Uses	Source
1947	Seydel K W	Pacific Directory Co.

1739 N SPRING ST

Year	Uses	Source
1964	DANIELS GEORGIA	Pacific Telephone
	DANIELS JOHN	Pacific Telephone
1947	Doan C C	Pacific Directory Co.
1940	Smith Hillis	Los Angeles Directory Co.
1928	Roper A C	Los Angeles Directory Co.

1746 N SPRING ST

Year	Uses	Source
2006	PRCXUCTSa Toys	Haines Company, Inc.
	USWi OCSSC M 3232 sm	Haines Company, Inc.

FINDINGS

Year	Uses	Source
2006	AMEicAS	Haines Company, Inc.
	TRA5 LA 8 L	Haines Company, Inc.

1756 N SPRING ST Map ID: 12

Year	Uses	Source
2006	No Current Listing	Haines Company, Inc.
2000	BORTZ Leo	Haines & Company
1951	N Sprng Standard Oil Co	Pacific Telephone & Telegraph Co.
1937	STANDARD Oil Co plants	Los Angeles Directory Co.
1929	Ladiner Harry C ydmn SPCo	Los Angeles Directory Co.
	STANDARD Oil Co plants	Los Angeles Directory Co.

S AVENUE 17

235 S AVENUE 17 Map ID: 21

Year	Uses	Source
2000	XXXX	Haines & Company

S SPRING ST

1714 S SPRING ST

Year	Uses	Source
1964	ACOSTA MARY	Pacific Telephone
1960	NILSON RONALD A	Pacific Telephone
1957	NILSON RONALD A	Pacific Telephone
1950	GUTHRIE CLARENCE A R	Pacific Telephone

1715 S SPRING ST

Year	Uses	Source
1960	TATUM HERSHAL	Pacific Telephone
1957	TATUM NEOMA L	Pacific Telephone
1954	TATUM NEOMA L	R. L. Polk & Co.

1717 S SPRING ST

Year	Uses	Source
1964	DE LONG R O	Pacific Telephone
1960	DE LONG R O	Pacific Telephone
1957	KDLE LONG R 0	Pacific Telephone
1954	DO LONG RO R	R. L. Polk & Co.

FINDINGS

1718 S SPRING ST

Year	Uses	Source
1964	COLE HAROLD	Pacific Telephone
1960	COLE HAROLD	Pacific Telephone

1722 S SPRING ST

Year	Uses	Source
1964	BURTON PANOLIN	Pacific Telephone
	BURTON W F	Pacific Telephone

1723 S SPRING ST

Year	Uses	Source
1957	TERRY JAS F	Pacific Telephone
1954	TERRY JAS F R	R. L. Polk & Co.
1950	PARKINSON F G R	Pacific Telephone

1724 S SPRING ST

Year	Uses	Source
1964	BROWN LILLIE MRS	Pacific Telephone

1728 S SPRING ST

Year	Uses	Source
1950	MCGREGOR DON W R	Pacific Telephone

1728A S SPRING ST

Year	Uses	Source
1960	CUCCIA VIC	Pacific Telephone

1728B S SPRING ST

Year	Uses	Source
1964	BARNES FRANCES	Pacific Telephone
	BARNES JERRY A SR	Pacific Telephone
1960	TROXEL CARL R	Pacific Telephone
1957	TROXEL CARL R	Pacific Telephone

1734 S SPRING ST

Year	Uses	Source
1964	PEREZ JOS H	Pacific Telephone
1960	PEREZ JOS H	Pacific Telephone
1957	MILLER MARTIN	Pacific Telephone
1954	MILE MARTIN0R	R. L. Polk & Co.

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1738 S SPRING ST

Year	Uses	Source
1964	MCDONALD JAS L	Pacific Telephone
	MCDONALD SHIRLEY F	Pacific Telephone
1960	SEYDEL KENNETH W	Pacific Telephone
1957	SEYDEL KENNETH W	Pacific Telephone
1954	SEYDEL (ENNETH WR	R. L. Polk & Co.
1950	SEYDEL KENNETH W R	Pacific Telephone

1739 S SPRING ST

Year	Uses	Source
1960	DOAN CLYDE	Pacific Telephone
1957	DOAN SYLVIA A	Pacific Telephone
	DOAN CLYDE	Pacific Telephone
1954	DOAN CLYDE R	R. L. Polk & Co.
	DOAN SYLVIA A	R. L. Polk & Co.
1950	DOAN CLYDE R	Pacific Telephone

1742 S SPRING ST

Year	Uses	Source
1957	COOMBE DELORIS A	Pacific Telephone

1743 S SPRING ST

Year	Uses	Source
1957	SPOTO JAS	Pacific Telephone
1954	SPOTO JAS R	R. L. Polk & Co.

1744 S SPRING ST

Year	Uses	Source
1964	ROBLES MIKE G	Pacific Telephone
	ROBLES VIRGINIA C	Pacific Telephone
1954	PIVOVAROFF JOHN J REV	R. L. Polk & Co.

1746 S SPRING ST

Year	Uses	Source
1964	JOJOLA EMMA	Pacific Telephone
	JOJOLA ARTHUR	Pacific Telephone

1747 S SPRING ST

Year	Uses	Source
1964	O BANNON VIVIAN COMPTON	Pacific Telephone

Year	Uses	Source
1964	O BANNON JOHN E COMPTON	Pacific Telephone
1960	FARLEY RAYMOND	Pacific Telephone
	BROWN T O	Pacific Telephone
1957	PRESTON HARRY E	Pacific Telephone
1954	PRESTON HARRY E R	R. L. Polk & Co.

SPRING N

1717 SPRING N

Year	Uses	Source
2000	XXXX	Haines & Company

1719 SPRING N

Year	Uses	Source
2000	XXXX	Haines & Company

1725 SPRING N

Year	Uses	Source
2000	LA LUCKY TRADING CO	Haines & Company

1731 SPRING N

Year	Uses	Source
2000	L & N FISH INC	Haines & Company
	H & T SEAFOOD	Haines & Company
	H & T SEAFOOD	Haines & Company

1733 SPRING N

Year	Uses	Source
2000	K M OFFICE SERVICES INC	Haines & Company

1735 SPRING N

Year	Uses	Source
2000	XXXX	Haines & Company

1746 SPRING N

Year	Uses	Source
2000	XXXX	Haines & Company

FINDINGS

SPRING ST

1724 SPRING ST

Year	*Uses*	*Source*
1976	Genl Ofcs	Pacific Telephone
	Pipeline Station	Pacific Telephone

SPRING ST N

1737 SPRING ST N

Year	*Uses*	*Source*
1951	N Sprng Standard Oil Co of Calif L A Main Plant	Pacific Telephone & Telegraph Co.

FINDINGS

TARGET PROPERTY: ADDRESS NOT IDENTIFIED IN RESEARCH SOURCE

The following Target Property addresses were researched for this report, and the addresses were not identified in the research source.

Address Researched	Address Not Identified in Research Source
1745 North Spring Street	2004, 2003, 2001, 1999, 1996, 1995, 1992, 1991, 1986, 1985, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920

ADJOINING PROPERTY: ADDRESSES NOT IDENTIFIED IN RESEARCH SOURCE

The following Adjoining Property addresses were researched for this report, and the addresses were not identified in research source.

Address Researched	Address Not Identified in Research Source
1700 N SPRING ST	2006, 2004, 2003, 2001, 1999, 1996, 1995, 1992, 1991, 1990, 1985, 1980, 1975, 1972, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1956, 1955, 1952, 1949, 1948, 1946, 1945, 1944, 1942, 1939, 1938, 1937, 1936, 1935, 1934, 1932, 1931, 1930, 1929, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1714 N SPRING	2006, 2004, 2003, 2001, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1940, 1939, 1938, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1928, 1927, 1926, 1925, 1923, 1921, 1920
1714 N SPRING ST	2006, 2004, 2003, 2001, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1952, 1951, 1950, 1949, 1948, 1946, 1945, 1944, 1942, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1714 S SPRING ST	2006, 2004, 2003, 2001, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1963, 1962, 1961, 1958, 1956, 1955, 1954, 1952, 1951, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1715 N SPRING ST	2006, 2004, 2003, 2001, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1949, 1948, 1946, 1945, 1944, 1942, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1715 S SPRING ST	2006, 2004, 2003, 2001, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1958, 1956, 1955, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1717 N SPRING	2006, 2004, 2003, 2001, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1717 N SPRING ST	2006, 2004, 2003, 2001, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1946, 1945, 1944, 1942, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1927, 1926, 1925, 1924, 1923, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
1717 S SPRING ST	2006, 2004, 2003, 2001, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1963, 1962, 1961, 1958, 1956, 1955, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1717 SPRING N	2006, 2004, 2003, 2001, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1718 N SPRING ST	2006, 2004, 2003, 2001, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1718 S SPRING ST	2006, 2004, 2003, 2001, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1963, 1962, 1961, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1719 N SPRING	2006, 2004, 2003, 2001, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1719 SPRING N	2006, 2004, 2003, 2001, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1721 N SPRING ST	2004, 2003, 2001, 1999, 1996, 1995, 1992, 1991, 1985, 1980, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1722 S SPRING ST	2006, 2004, 2003, 2001, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1723 N SPRING ST	2006, 2004, 2003, 2001, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1946, 1945, 1944, 1942, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1723 S SPRING ST	2006, 2004, 2003, 2001, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1956, 1955, 1952, 1951, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1724 S SPRING ST	2006, 2004, 2003, 2001, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1724 SPRING ST	2006, 2004, 2003, 2001, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
1725 SPRING N	2006, 2004, 2003, 2001, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1726 N SPRING	2006, 2004, 2003, 2001, 2000, 1999, 1996, 1995, 1992, 1991, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1726 N SPRING ST	2004, 2003, 2001, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1946, 1945, 1944, 1942, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1727 N SPRING ST	2004, 2003, 2001, 1999, 1996, 1995, 1992, 1991, 1985, 1980, 1975, 1972, 1971, 1970, 1969, 1966, 1965, 1964, 1963, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1949, 1948, 1946, 1945, 1944, 1942, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1928, 1927, 1926, 1925, 1923, 1921, 1920
1728 N SPRING ST	2006, 2004, 2003, 2001, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1728 S SPRING ST	2006, 2004, 2003, 2001, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1728A S SPRING ST	2006, 2004, 2003, 2001, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1728B S SPRING ST	2006, 2004, 2003, 2001, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1963, 1962, 1961, 1958, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1731 N SPRING	2006, 2004, 2003, 2001, 2000, 1999, 1996, 1995, 1992, 1991, 1985, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1731 N SPRING ST	2004, 2003, 2001, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1963, 1962, 1961, 1956, 1955, 1952, 1951, 1949, 1948, 1946, 1945, 1944, 1942, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1731 SPRING N	2006, 2004, 2003, 2001, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1733 N SPRING	2006, 2004, 2003, 2001, 2000, 1999, 1996, 1995, 1992, 1991, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920

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Address Researched	Address Not Identified in Research Source
1733 N SPRING ST	2004, 2003, 2001, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1733 SPRING N	2006, 2004, 2003, 2001, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1734 N SPRING ST	2006, 2004, 2003, 2001, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1949, 1948, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1734 S SPRING ST	2006, 2004, 2003, 2001, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1963, 1962, 1961, 1958, 1956, 1955, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1735 N SPRING ST	2006, 2004, 2003, 2001, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1963, 1962, 1961, 1958, 1956, 1955, 1952, 1951, 1950, 1949, 1948, 1946, 1945, 1944, 1942, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1735 SPRING N	2006, 2004, 2003, 2001, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1736 N SPRING ST	2006, 2004, 2003, 2001, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1737 SPRING ST N	2006, 2004, 2003, 2001, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1738 N SPRING ST	2006, 2004, 2003, 2001, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1738 S SPRING ST	2006, 2004, 2003, 2001, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1963, 1962, 1961, 1958, 1956, 1955, 1952, 1951, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1739 N SPRING ST	2006, 2004, 2003, 2001, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1946, 1945, 1944, 1942, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1739 S SPRING ST	2006, 2004, 2003, 2001, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1958, 1956, 1955, 1952, 1951, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920

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Address Researched	Address Not Identified in Research Source
1742 S SPRING ST	2006, 2004, 2003, 2001, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1743 S SPRING ST	2006, 2004, 2003, 2001, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1956, 1955, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1744 S SPRING ST	2006, 2004, 2003, 2001, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1746 N SPRING	2006, 2004, 2003, 2001, 2000, 1999, 1996, 1995, 1992, 1991, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1746 N SPRING ST	2004, 2003, 2001, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1746 S SPRING ST	2006, 2004, 2003, 2001, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1746 SPRING N	2006, 2004, 2003, 2001, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1747 S SPRING ST	2006, 2004, 2003, 2001, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1963, 1962, 1961, 1958, 1956, 1955, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1753 N SPRING ST	2006, 2004, 2003, 2001, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1756 N SPRING ST	2004, 2003, 2001, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1771 SPRING ST	2006, 2004, 2003, 2001, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1791 BAKER ST	2004, 2003, 2001, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
1799 BAKER ST	2004, 2003, 2001, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
235 S AVENUE 17	2006, 2004, 2003, 2001, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
312 AURORA ST	2006, 2004, 2003, 2001, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
314 AURORA ST	2006, 2004, 2003, 2001, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
315 AURORA	2006, 2004, 2003, 2001, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1970, 1969, 1966, 1965, 1964, 1963, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
315 AURORA LN	2006, 2004, 2003, 2001, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
315 AURORA ST	2006, 2004, 2003, 2001, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1970, 1969, 1966, 1965, 1964, 1963, 1961, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
317 AURORA	2006, 2004, 2003, 2001, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
317 AURORA ST	2006, 2004, 2003, 2001, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920

Water Wheel
1745 North Spring Street
Los Angeles, CA 90012

Inquiry Number: 3348112.2s
June 19, 2012

The EDR Radius Map™ Report with GeoCheck®

EDR® Environmental Data Resources Inc

440 Wheelers Farms Road
Milford, CT 06461
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Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

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EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc (EDR). The report was designed to assist parties seeking to meet the search requirements of EPA's Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), the ASTM Standard Practice for Environmental Site Assessments (E 1527-05) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

TARGET PROPERTY INFORMATION

ADDRESS

1745 NORTH SPRING STREET
LOS ANGELES, CA 90012

COORDINATES

Latitude (North):	34.0702000 - 34° 4' 12.72''
Longitude (West):	118.2257000 - 118° 13' 32.52''
Universal Tranverse Mercator:	Zone 11
UTM X (Meters):	386896.7
UTM Y (Meters):	3770422.8
Elevation:	307 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property Map:	34118-A2 LOS ANGELES, CA
Most Recent Revision:	1994

AERIAL PHOTOGRAPHY IN THIS REPORT

Portions of Photo from:	2009, 2010
Source:	USDA

TARGET PROPERTY SEARCH RESULTS

The target property was identified in the following records. For more information on this property see page 8 of the attached EDR Radius Map report:

Site	Database(s)	EPA ID
CATHAY COMPANY INC. 1745 N SPRING ST LOS ANGELES, CA 90012	FTTS HIST FTTS FINDS	N/A

EXECUTIVE SUMMARY

DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records either on the target property or within the search radius around the target property for the following databases:

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

NPL ---------- National Priority List
Proposed NPL ---------- Proposed National Priority List Sites
NPL LIENS ---------- Federal Superfund Liens

Federal Delisted NPL site list

Delisted NPL ---------- National Priority List Deletions

Federal CERCLIS list

CERCLIS ---------- Comprehensive Environmental Response, Compensation, and Liability Information System
FEDERAL FACILITY ---------- Federal Facility Site Information listing

Federal RCRA generators list

RCRA-CESQG ---------- RCRA - Conditionally Exempt Small Quantity Generator

Federal institutional controls / engineering controls registries

US ENG CONTROLS ---------- Engineering Controls Sites List
US INST CONTROL ---------- Sites with Institutional Controls

Federal ERNS list

ERNS ---------- Emergency Response Notification System

State and tribal landfill and/or solid waste disposal site lists

SWF/LF ---------- Solid Waste Information System

State and tribal leaking storage tank lists

INDIAN LUST ---------- Leaking Underground Storage Tanks on Indian Land

State and tribal registered storage tank lists

AST ---------- Aboveground Petroleum Storage Tank Facilities
INDIAN UST ---------- Underground Storage Tanks on Indian Land
FEMA UST ---------- Underground Storage Tank Listing

State and tribal voluntary cleanup sites

INDIAN VCP ---------- Voluntary Cleanup Priority Listing

EXECUTIVE SUMMARY

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS ..... A Listing of Brownfields Sites

Local Lists of Landfill / Solid Waste Disposal Sites

DEBRIS REGION 9 ..... Torres Martinez Reservation Illegal Dump Site Locations
ODI ..... Open Dump Inventory
WMUDS/SWAT ..... Waste Management Unit Database
SWRCY ..... Recycler Database
HAULERS ..... Registered Waste Tire Haulers Listing
INDIAN ODI ..... Report on the Status of Open Dumps on Indian Lands

Local Lists of Hazardous waste / Contaminated Sites

US CDL ..... Clandestine Drug Labs
SCH ..... School Property Evaluation Program
Toxic Pits ..... Toxic Pits Cleanup Act Sites
AOCONCERN ..... San Gabriel Valley Areas of Concern
CDL ..... Clandestine Drug Labs
US HIST CDL ..... National Clandestine Laboratory Register

Local Land Records

LIENS 2 ..... CERCLA Lien Information
LUCIS ..... Land Use Control Information System
LIENS ..... Environmental Liens Listing

Records of Emergency Release Reports

HMIRS ..... Hazardous Materials Information Reporting System
CHMIRS ..... California Hazardous Material Incident Report System
LDS ..... Land Disposal Sites Listing
MCS ..... Military Cleanup Sites Listing

Other Ascertainable Records

DOT OPS ..... Incident and Accident Data
DOD ..... Department of Defense Sites
FUDS ..... Formerly Used Defense Sites
ROD ..... Records Of Decision
UMTRA ..... Uranium Mill Tailings Sites
MINES ..... Mines Master Index File
TRIS ..... Toxic Chemical Release Inventory System
TSCA ..... Toxic Substances Control Act
SSTS ..... Section 7 Tracking Systems
ICIS ..... Integrated Compliance Information System
PADS ..... PCB Activity Database System
MLTS ..... Material Licensing Tracking System
RADINFO ..... Radiation Information Database
RAATS ..... RCRA Administrative Action Tracking System

UIC	UIC Listing
NPDES	NPDES Permits Listing
WDS	Waste Discharge System
Notify 65	Proposition 65 Records
LA Co. Site Mitigation	Site Mitigation List
DRYCLEANERS	Cleaner Facilities
WIP	Well Investigation Program Case List
LOS ANGELES CO. HMS	HMS: Street Number List
ENF	Enforcement Action Listing
HAZNET	Facility and Manifest Data
EMI	Emissions Inventory Data
INDIAN RESERV	Indian Reservations
SCRD DRYCLEANERS	State Coalition for Remediation of Drycleaners Listing
PCB TRANSFORMER	PCB Transformer Registration Database
COAL ASH EPA	Coal Combustion Residues Surface Impoundments List
EPA WATCH LIST	EPA WATCH LIST
COAL ASH DOE	Sleam-Electric Plan Operation Data
HWT	Registered Hazardous Waste Transporter Database
PROC	Certified Processors Database
FINANCIAL ASSURANCE	Financial Assurance Information Listing
MWMP	Medical Waste Management Program Listing

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were identified in the following databases.

Elevations have been determined from the USGS Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified. Sites with an elevation equal to or higher than the target property have been differentiated below from sites with an elevation lower than the target property.
Page numbers and map identification numbers refer to the EDR Radius Map report where detailed data on individual sites can be reviewed.

Sites listed in ***bold italics*** are in multiple databases.

Unmappable (orphan) sites are not considered in the foregoing analysis.

STANDARD ENVIRONMENTAL RECORDS

Federal CERCLIS NFRAP site List

CERC-NFRAP: Archived sites are sites that have been removed and archived from the inventory of CERCLIS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list this site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. This decision does not necessarily mean that there is no hazard associated with a given site; it only means that, based upon available information, the location is not judged to be a potential NPL site.

A review of the CERC-NFRAP list, as provided by EDR, and dated 12/28/2011 has revealed that there are 3 CERC-NFRAP sites within approximately 0.5 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
TRUFLEX RUBBER	***1667 N MAIN ST***	***SSW 1/8 - 1/4 (0.196 mi.)***	***H29***	***66***
MAIN STREET CENTER	***1630 NORTH MAIN STREET,***	***SSW 1/8 - 1/4 (0.224 mi.)***	***K39***	***88***
CALIFORNIA BRASS MFG	1447 NAUD ST	SW 1/4 - 1/2 (0.416 mi.)	R71	197

EXECUTIVE SUMMARY

Federal RCRA CORRACTS facilities list

CORRACTS: CORRACTS is a list of handlers with RCRA Corrective Action Activity. This report shows which nationally-defined corrective action core events have occurred for every handler that has had corrective action activity.

A review of the CORRACTS list, as provided by EDR, and dated 08/19/2011 has revealed that there is 1 CORRACTS site within approximately 1 mile of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
MAIN STREET CENTER	***1630 NORTH MAIN STREET,***	***SSW 1/8 - 1/4 (0.224 mi.)***	***K39***	***88***

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF: RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

A review of the RCRA-TSDF list, as provided by EDR, and dated 03/15/2012 has revealed that there is 1 RCRA-TSDF site within approximately 0.5 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
MAIN STREET CENTER	***1630 NORTH MAIN STREET,***	***SSW 1/8 - 1/4 (0.224 mi.)***	***K39***	***88***

Federal RCRA generators list

RCRA-LQG: RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month.

A review of the RCRA-LQG list, as provided by EDR, and dated 03/15/2012 has revealed that there are 3 RCRA-LQG sites within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
LACMTA DIVISION 21	1800 BAKER STREET	NNW 0 - 1/8 (0.106 mi.)	10	40

Lower Elevation	Address	Direction / Distance	Map ID	Page
F AND L ENT INC	***1739 N ALBION ST***	***SE 1/8 - 1/4 (0.194 mi.)***	***G25***	***59***
MAIN STREET CENTER	***1630 NORTH MAIN STREET,***	***SSW 1/8 - 1/4 (0.224 mi.)***	***K39***	***88***

RCRA-SQG: RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

A review of the RCRA-SQG list, as provided by EDR, and dated 03/15/2012 has revealed that there are 5 RCRA-SQG sites within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
K M OFFICE SERVICES	*1733 N SPRING ST*	*WSW 0 - 1/8 (0.027 mi.)*	*A2*	*8*
KIM PHUOC JEWELRY INC	*1646 N SPRING ST*	*WSW 1/8 - 1/4 (0.144 mi.)*	*12*	*42*
B & N REPAIR BODY SHOP	*1813 N BROADWAY*	*ENE 1/8 - 1/4 (0.228 mi.)*	*M48*	*148*
SERVICE MOTOR PARTS CO	*1815 N BROADWAY*	*ENE 1/8 - 1/4 (0.229 mi.)*	*M50*	*151*

Lower Elevation	Address	Direction / Distance	Map ID	Page
TRUFLEX RUBBER	*1667 N MAIN ST*	*SSW 1/8 - 1/4 (0.196 mi.)*	*H29*	*66*

State- and tribal - equivalent NPL

RESPONSE: Identifies confirmed release sites where DTSC is involved in remediation, either in a lead or oversight capacity. These confirmed release sites are generally high-priority and high potential risk.

A review of the RESPONSE list, as provided by EDR, and dated 05/07/2012 has revealed that there are 3 RESPONSE sites within approximately 1 mile of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
BORTZ OIL COMPANY	*1746 NORTH SPRING STREE*	*WSW 0 - 1/8 (0.050 mi.)*	*B6*	*14*
M.O.R.E. OIL COMPANY	*645 SOUTH AVE. 21*	*SE 1/2 - 1 (0.614 mi.)*	*81*	*236*

Lower Elevation	Address	Direction / Distance	Map ID	Page
WILLIAM MEAD HOMES	*1300 CARDINAL STREET*	*SSW 1/2 - 1 (0.573 mi.)*	*80*	*216*

State- and tribal - equivalent CERCLIS

ENVIROSTOR: The Department of Toxic Substances Control's (DTSC's) Site Mitigation and Brownfields Reuse Program's (SMBRP's) EnviroStor database identifes sites that have known contamination or sites for which there may be reasons to investigate further. The database includes the following site types: Federal Superfund sites (National Priorities List (NPL)); State Response, including Military Facilities and State Superfund; Voluntary Cleanup; and School sites. EnviroStor provides similar information to the information that was available in CalSites, and provides additional site information, including, but not limited to, identification of formerly-contaminated properties that have been released for reuse, properties where environmental deed restrictions have been recorded to prevent inappropriate land uses, and risk characterization information that is used to assess potential impacts to public health and the environment at contaminated sites.

A review of the ENVIROSTOR list, as provided by EDR, and dated 05/07/2012 has revealed that there are 18 ENVIROSTOR sites within approximately 1 mile of the target property.

EXECUTIVE SUMMARY

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
BORTZ OIL COMPANY Status: Active	***1746 NORTH SPRING STREE***	***WSW 0 - 1/8 (0.050 mi.)***	***B6***	***14***
VICTOR INDUSTRIAL BATTERY Status: Certified O&M - Land Use Restrictions Only	***138 N SAN FERNANDO RD***	***NNE 1/4 - 1/2 (0.413 mi.)***	***68***	***186***
LAUSD/ SOLANO AVE ELEM Status: Active	***615 SOLANO AVE***	***NW 1/2 - 1 (0.546 mi.)***	***78***	***209***
M.O.R.E. OIL COMPANY Status: Certified	***645 SOUTH AVE. 21***	***SE 1/2 - 1 (0.614 mi.)***	***81***	***236***
JAYBEE SITE AT LINCOLN HEIGHTS Status: Active	***301 WEST AVENUE 26***	***NNE 1/2 - 1 (0.782 mi.)***	***U85***	***249***
PROPOSED AMCAL MULTI-HOUSING D Status: Refer: 1248 Local Agency	306-360 W. AVE. 26	NNE 1/2 - 1 (0.783 mi.)	U86	252

Lower Elevation	Address	Direction / Distance	Map ID	Page
TRUFLEX RUBBER Status: Inactive - Needs Evaluation	***1667 N MAIN ST***	***SSW 1/8 - 1/4 (0.196 mi.)***	***H29***	***66***
MAIN STREET OIL DEPOT Status: Inactive - Needs Evaluation	***1630 MAIN ST N***	***SSW 1/8 - 1/4 (0.224 mi.)***	***K41***	***128***
LA DEPARTMENT WATER & POWER Status: Active	***1630 N MAIN ST STE 16***	***SSW 1/8 - 1/4 (0.224 mi.)***	***K43***	***134***
CHAMPION IRRIGATION PRODUCTS I Status: Refer: 1248 Local Agency	***1460 NAUD ST***	***SW 1/4 - 1/2 (0.399 mi.)***	***R67***	***184***
CALIFORNIA BRASS MANUFACTURING Status: Refer: Other Agency	1447 NAUD STREET	SW 1/4 - 1/2 (0.416 mi.)	R70	196
EMPIRE CHEMICAL CO., INC. Status: Refer: Other Agency	***715 LAMAR ST***	***SSE 1/4 - 1/2 (0.429 mi.)***	***S73***	***199***
WITCO/ALLIED KELITE DIVISION Status: No Further Action	***1250 NORTH MAIN STREET***	***SW 1/2 - 1 (0.564 mi.)***	***79***	***212***
WILLIAM MEAD HOMES Status: Active	***1300 CARDINAL STREET***	***SSW 1/2 - 1 (0.573 mi.)***	***80***	***216***
BAUCHET ST SITE Status: Active	***490 BAUCHET ST***	***SSW 1/2 - 1 (0.716 mi.)***	***82***	***239***
FORMER CORNFIELD RAIL YARD Status: Certified	***1245 N SPRING ST***	***SW 1/2 - 1 (0.752 mi.)***	***83***	***244***
MAGNUS COMPANY, INC Status: No Further Action	860 NORTH MAIN STREET	SW 1/2 - 1 (0.870 mi.)	88	256
MOGUL CORPORATION Status: No Further Action	967 NORTH VIGNES STREET	SSW 1/2 - 1 (0.891 mi.)	89	258

State and tribal leaking storage tank lists

LUST: The Leaking Underground Storage Tank Incident Reports contain an inventory of reported leaking underground storage tank incidents. The data come from the State Water Resources Control Board Leaking Underground Storage Tank Information System.

A review of the LUST list, as provided by EDR, and dated 05/09/2012 has revealed that there are 16

LUST sites within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
BORTZ OIL	***1746 SPRING ST N***	***WSW 0 - 1/8 (0.048 mi.)***	***B3***	***10***
BILL'S AUTOMOTIVE #2	***1796 N SPRING ST***	***ENE 1/8 - 1/4 (0.198 mi.)***	***I30***	***73***
Status: Completed - Case Closed				
CENTRAL TRAFFIC YARD	1831 PASADENA AVE	NE 1/4 - 1/2 (0.266 mi.)	O60	162
LA DEPT TRANSPORTATION MATERIA	***1831 PASADENA AVE***	***NE 1/4 - 1/2 (0.266 mi.)***	***O61***	***163***
Status: Completed - Case Closed				
UNION PACIFIC/RAILROAD COMPANY	***1322 BROADWAY N***	***W 1/4 - 1/2 (0.352 mi.)***	***Q64***	***176***
Status: Completed - Case Closed				
NASA OIL SERVICE STATION	2001 BROADWAY N	ENE 1/4 - 1/2 (0.361 mi.)	66	180
Status: Completed - Case Closed				
DOMENICH BASSO, INC.	***1201 N BROADWAY***	***W 1/4 - 1/2 (0.416 mi.)***	***69***	***190***
Status: Completed - Case Closed				
N E MUNICIPAL BUILDING	401 AVENUE 19 N	N 1/4 - 1/2 (0.475 mi.)	T77	206
Status: Completed - Case Closed				

Lower Elevation	Address	Direction / Distance	Map ID	Page
ALBION DAIRY (FORMER)	***1739 ALBION ST***	***SE 1/8 - 1/4 (0.194 mi.)***	***G22***	***54***
Status: Open - Remediation				
Status: Open - Verification Monitoring				
**Additional key fields are available in the Map Findings section*				
MAIN STREET DAIRY (FORMER)	***1620 SPRING ST N***	***WSW 1/8 - 1/4 (0.215 mi.)***	***J34***	***80***
Status: Completed - Case Closed				
MAIN STREET OIL DEPOT	***1630 MAIN ST N***	***SSW 1/8 - 1/4 (0.224 mi.)***	***K41***	***128***
Status: Open - Remediation				
VALSPAR CORPORTION	***620 LAMAR ST***	***SE 1/4 - 1/2 (0.317 mi.)***	***P62***	***167***
TRANSIT MIXED CONCRETE CO-LOS	***625 LAMAR ST***	***SSE 1/4 - 1/2 (0.319 mi.)***	***P63***	***173***
Status: Completed - Case Closed				
Status: Completed - Case Closed				
WETSERN BRASSWORKS	1440 SPRING ST.	WSW 1/4 - 1/2 (0.423 mi.)	72	198
Status: Completed - Case Closed				
EMPIRE CHEMICAL CO., INC.	***715 LAMAR ST***	***SSE 1/4 - 1/2 (0.429 mi.)***	***S73***	***199***
Status: Completed - Case Closed				
UPS MAIN ST. LAMAR HUB	1800 MAIN ST. N.	SSE 1/4 - 1/2 (0.430 mi.)	S74	203
Status: Completed - Case Closed				

SLIC: SLIC Region comes from the California Regional Water Quality Control Board.

A review of the SLIC list, as provided by EDR, and dated 05/09/2012 has revealed that there are 4 SLIC sites within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
BORTZ OIL	***1746 SPRING ST N***	***WSW 0 - 1/8 (0.048 mi.)***	***B3***	***10***
Facility Status: Open - Site Assessment				

Lower Elevation	Address	Direction / Distance	Map ID	Page
TRUFLEX RUBBER PRODUCTS	1667 MAIN	SSW 1/8 - 1/4 (0.196 mi.)	H27	64

Lower Elevation	Address	Direction / Distance	Map ID	Page
TRUFLEX RUBBER	***1667 N MAIN ST***	***SSW 1/8 - 1/4 (0.196 mi.)***	***H29***	***66***
Facility Status: Completed - Case Closed				
VALSPAR CORPORTION	***620 LAMAR ST***	***SE 1/4 - 1/2 (0.317 mi.)***	***P62***	***167***
Facility Status: Open - Site Assessment				
Facility Status: Completed - Case Closed				

State and tribal registered storage tank lists

UST: The Underground Storage Tank database contains registered USTs. USTs are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA). The data come from the State Water Resources Control Board's Hazardous Substance Storage Container Database.

A review of the UST list, as provided by EDR, and dated 05/09/2012 has revealed that there are 5 UST sites within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
GABEL'S COSMETICS, INCORPORATE	126 SOUTH AVENUE 18	NE 1/8 - 1/4 (0.230 mi.)	L53	154
ATLAS CARPET MILLS	340 SOUTH AVENUE 17	ESE 1/8 - 1/4 (0.243 mi.)	N56	158

Lower Elevation	Address	Direction / Distance	Map ID	Page
DANNY K. WONG	117 WILHARDT ST	S 1/8 - 1/4 (0.164 mi.)	E18	52
ROSS SWISS DAIRIES, INCORPORAT	1739 ALBION ST	SE 1/8 - 1/4 (0.194 mi.)	G23	57
MAIN STREET	1630 N MAIN ST	SSW 1/8 - 1/4 (0.224 mi.)	K42	134

State and tribal voluntary cleanup sites

VCP: Contains low threat level properties with either confirmed or unconfirmed releases and the project proponents have request that DTSC oversee investigation and/or cleanup activities and have agreed to provide coverage for DTSC's costs.

A review of the VCP list, as provided by EDR, and dated 05/07/2012 has revealed that there are 2 VCP sites within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
VICTOR INDUSTRIAL BATTERY	***138 N SAN FERNANDO RD***	***NNE 1/4 - 1/2 (0.413 mi.)***	***68***	***186***

Lower Elevation	Address	Direction / Distance	Map ID	Page
MAIN STREET OIL DEPOT	***1630 MAIN ST N***	***SSW 1/8 - 1/4 (0.224 mi.)***	***K41***	***128***

ADDITIONAL ENVIRONMENTAL RECORDS

Local Lists of Hazardous waste / Contaminated Sites

HIST Cal-Sites: Formerly known as ASPIS, this database contains both known and potential hazardous substance sites. The source is the California Department of Toxic Substance Control. No longer updated by the state agency. It has been replaced by ENVIROSTOR.

A review of the HIST Cal-Sites list, as provided by EDR, and dated 08/08/2005 has revealed that there are 3 HIST Cal-Sites sites within approximately 1 mile of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
BORTZ OIL COMPANY	***1746 NORTH SPRING STREE***	***WSW 0 - 1/8 (0.050 mi.)***	***B6***	***14***
M.O.R.E. OIL COMPANY	***645 SOUTH AVE. 21***	***SE 1/2 - 1 (0.614 mi.)***	***81***	***236***

Lower Elevation	Address	Direction / Distance	Map ID	Page
WILLIAM MEAD HOMES	***1300 CARDINAL STREET***	***SSW 1/2 - 1 (0.573 mi.)***	***80***	***216***

Local Lists of Registered Storage Tanks

CA FID UST: The Facility Inventory Database contains active and inactive underground storage tank locations. The source is the State Water Resource Control Board.

A review of the CA FID UST list, as provided by EDR, and dated 10/31/1994 has revealed that there are 20 CA FID UST sites within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
BORTZ OIL CO., INC.	***1746 N SPRING ST***	***WSW 0 - 1/8 (0.050 mi.)***	***B5***	***12***
DEPT. OF GEN SERVICE OF STATE	1525 S BROADWAY	NNE 1/8 - 1/4 (0.149 mi.)	D13	45
CITY FORD COMPANY, INCORPORATE	***1600 PASADENA AVE***	***NE 1/8 - 1/4 (0.159 mi.)***	***D16***	***48***
YOUNG-NAK PRESS CHURCH	***1721 N BROADWAY***	***NE 1/8 - 1/4 (0.171 mi.)***	***19***	***52***
BILL'S AUTOMOTIVE #2	***1796 N SPRING ST***	***ENE 1/8 - 1/4 (0.198 mi.)***	***I30***	***73***
CERTIFIED MANAGEMENT CO	***219 S AVENUE 18***	***ENE 1/8 - 1/4 (0.215 mi.)***	***33***	***80***
WESTWAY ENTERPRISES INCORPORAT	***137 S AVENUE 18***	***NE 1/8 - 1/4 (0.225 mi.)***	***L46***	***147***
YOUNG NAK PRESBYTARIAN CHURCH	***125 S AVENUE 18***	***NE 1/8 - 1/4 (0.229 mi.)***	***L49***	***150***
GABEL'S COSMETICS, INCORPORATE	***126 S AVENUE 18***	***NE 1/8 - 1/4 (0.230 mi.)***	***L52***	***153***
ATLAS CARPET MILLS, INC.(DYE H	***340 SO. AVENUE***	***ESE 1/8 - 1/4 (0.243 mi.)***	***N55***	***155***
CATHERINA MAGNESS	***101 N AVENUE 18***	***NNE 1/8 - 1/4 (0.244 mi.)***	***O58***	***160***
WESTWAY ENTERPRISES, INC	***1800 PASADENA AVE***	***NNE 1/8 - 1/4 (0.244 mi.)***	***O59***	***161***

Lower Elevation	Address	Direction / Distance	Map ID	Page
ALAN WONG-ALCO	***119 WILHARDT ST***	***S 1/8 - 1/4 (0.163 mi.)***	***E17***	***51***
DIXON BOILER WORKS, INC	***1625 NAUD ST***	***SW 1/8 - 1/4 (0.193 mi.)***	***F21***	***53***
FOREMOST DAIRIES, INCORPORATED	***1739 ALBION ST***	***SE 1/8 - 1/4 (0.194 mi.)***	***G26***	***62***
TRUFLEX RUBBER PROD CO	***1667 N MAIN ST***	***SSW 1/8 - 1/4 (0.196 mi.)***	***H28***	***64***
MAIN STREET DAIRY INC	***1620 N SPRING ST***	***WSW 1/8 - 1/4 (0.215 mi.)***	***J36***	***84***
CARNATION COMPANY	***1639 N MAIN ST***	***SSW 1/8 - 1/4 (0.217 mi.)***	***K37***	***87***
GENERAL SERVICE HQ	***1630 N MAIN ST***	***SSW 1/8 - 1/4 (0.224 mi.)***	***K40***	***123***
L & M AUTO SERVICE	***1749 N MAIN ST***	***SSE 1/8 - 1/4 (0.227 mi.)***	***47***	***147***

EXECUTIVE SUMMARY

HIST UST: Historical UST Registered Database.

A review of the HIST UST list, as provided by EDR, and dated 10/15/1990 has revealed that there are 10 HIST UST sites within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
BORTZ OIL CO., INC.	***1746 N SPRING ST***	***WSW 0 - 1/8 (0.050 mi.)***	***B7***	***37***
SERVICE STATION 4962	100 ELYSIAN PARK AVE	NW 1/8 - 1/4 (0.144 mi.)	11	41
CITY FORD COMPANY, INC	1600 PASADENA AVE	NE 1/8 - 1/4 (0.159 mi.)	D15	46
BILL'S AUTOMOTIVE #2	***1796 N SPRING ST***	***ENE 1/8 - 1/4 (0.198 mi.)***	***I30***	***73***
GABEL'S COSMETICS, INC.	***126 S AVENUE 18***	***NE 1/8 - 1/4 (0.230 mi.)***	***L51***	***152***
ATLAS CARPET MILLS, INC.(DYE H	***340 SO. AVENUE***	***ESE 1/8 - 1/4 (0.243 mi.)***	***N55***	***155***

Lower Elevation	Address	Direction / Distance	Map ID	Page
DIXON BOILER WORKS, INC.	1625 NAUD ST	SW 1/8 - 1/4 (0.193 mi.)	F20	53
FOREMOST DAIRIES INC.	1739 ALBION ST	SE 1/8 - 1/4 (0.194 mi.)	G24	58
CARNATION DAIRY	1620 N SPRING ST	WSW 1/8 - 1/4 (0.215 mi.)	J35	82
GENERAL STORES	***1630 N MAIN ST***	***SSW 1/8 - 1/4 (0.224 mi.)***	***K44***	***138***

SWEEPS UST: Statewide Environmental Evaluation and Planning System. This underground storage tank listing was updated and maintained by a company contacted by the SWRCB in the early 1990's. The listing is no longer updated or maintained. The local agency is the contact for more information on a site on the SWEEPS list.

A review of the SWEEPS UST list, as provided by EDR, and dated 06/01/1994 has revealed that there are 20 SWEEPS UST sites within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
BORTZ OIL CO., INC.	***1746 N SPRING ST***	***WSW 0 - 1/8 (0.050 mi.)***	***B5***	***12***
BUENA VISTA CHORINATION STATIO	1561 N BROADWAY	NE 1/8 - 1/4 (0.157 mi.)	D14	45
CITY FORD COMPANY, INCORPORATE	***1600 PASADENA AVE***	***NE 1/8 - 1/4 (0.159 mi.)***	***D16***	***48***
YOUNG-NAK PRESS CHURCH	***1721 N BROADWAY***	***NE 1/8 - 1/4 (0.171 mi.)***	***19***	***52***
BILL'S AUTOMOTIVE #2	***1796 N SPRING ST***	***ENE 1/8 - 1/4 (0.198 mi.)***	***I30***	***73***
CERTIFIED MANAGEMENT CO	***219 S AVENUE 18***	***ENE 1/8 - 1/4 (0.215 mi.)***	***33***	***80***
WESTWAY ENTERPRISES INCORPORAT	***137 S AVENUE 18***	***NE 1/8 - 1/4 (0.225 mi.)***	***L46***	***147***
YOUNG NAK PRESBYTARIAN CHURCH	***125 S AVENUE 18***	***NE 1/8 - 1/4 (0.229 mi.)***	***L49***	***150***
GABEL'S COSMETICS, INCORPORATE	***126 S AVENUE 18***	***NE 1/8 - 1/4 (0.230 mi.)***	***L52***	***153***
ATLAS CARPET MILLS	***340 S AVENUE 17***	***ESE 1/8 - 1/4 (0.243 mi.)***	***N57***	***158***
CATHERINA MAGNESS	***101 N AVENUE 18***	***NNE 1/8 - 1/4 (0.244 mi.)***	***O58***	***160***
WESTWAY ENTERPRISES, INC	***1800 PASADENA AVE***	***NNE 1/8 - 1/4 (0.244 mi.)***	***O59***	***161***

Lower Elevation	Address	Direction / Distance	Map ID	Page
ALAN WONG-ALCO	***119 WILHARDT ST***	***S 1/8 - 1/4 (0.163 mi.)***	***E17***	***51***
DIXON BOILER WORKS, INC	***1625 NAUD ST***	***SW 1/8 - 1/4 (0.193 mi.)***	***F21***	***53***
FOREMOST DAIRIES, INCORPORATED	***1739 ALBION ST***	***SE 1/8 - 1/4 (0.194 mi.)***	***G26***	***62***
TRUFLEX RUBBER PROD CO	***1667 N MAIN ST***	***SSW 1/8 - 1/4 (0.196 mi.)***	***H28***	***64***
MAIN STREET DAIRY INC	***1620 N SPRING ST***	***WSW 1/8 - 1/4 (0.215 mi.)***	***J36***	***84***
CARNATION COMPANY	***1639 N MAIN ST***	***SSW 1/8 - 1/4 (0.217 mi.)***	***K37***	***87***
GENERAL SERVICE HQ	***1630 N MAIN ST***	***SSW 1/8 - 1/4 (0.224 mi.)***	***K40***	***123***
L & M AUTO SERVICE	***1749 N MAIN ST***	***SSE 1/8 - 1/4 (0.227 mi.)***	***47***	***147***

EXECUTIVE SUMMARY

Local Land Records

DEED: The use of recorded land use restrictions is one of the methods the DTSC uses to protect the public from unsafe exposures to hazardous substances and wastes .

A review of the DEED list, as provided by EDR, and dated 03/12/2012 has revealed that there are 2 DEED sites within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
BORTZ OIL COMPANY	***1746 NORTH SPRING STREE***	***WSW 0 - 1/8 (0.050 mi.)***	***B6***	***14***
VICTOR INDUSTRIAL BATTERY	***138 N SAN FERNANDO RD***	***NNE 1/4 - 1/2 (0.413 mi.)***	***68***	***186***

Other Ascertainable Records

RCRA-NonGen: RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

A review of the RCRA-NonGen list, as provided by EDR, and dated 03/15/2012 has revealed that there is 1 RCRA-NonGen site within approximately 0.25 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
CARING CHEMICAL COMPANY	***1718 NORTH NAUD***	***SSW 0 - 1/8 (0.106 mi.)***	***C9***	***39***

CONSENT: Major Legal settlements that establish responsibility and standards for cleanup at NPL (superfund) sites. Released periodically by U.S. District Courts after settlement by parties to litigation matters.

A review of the CONSENT list, as provided by EDR, and dated 12/01/2011 has revealed that there is 1 CONSENT site within approximately 1 mile of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
BUILDERS HARDWARE FINISHERS	***1846 SICHEL ST***	***ESE 1/2 - 1 (0.818 mi.)***	***87***	***253***

CA BOND EXP. PLAN: Department of Health Services developed a site-specific expenditure plan as the basis for an appropriation of Hazardous Substance Cleanup Bond Act funds. It is not updated.

A review of the CA BOND EXP. PLAN list, as provided by EDR, and dated 01/01/1989 has revealed that there is 1 CA BOND EXP. PLAN site within approximately 1 mile of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
BORTZ OIL COMPANY	1746 NORTH SPRING STREE	WSW 0 - 1/8 (0.050 mi.)	B4	12

EXECUTIVE SUMMARY

Cortese: The sites for the list are designated by the State Water Resource Control Board (LUST), the Integrated Waste Board (SWF/LS), and the Department of Toxic Substances Control (Cal-Sites).

A review of the Cortese list, as provided by EDR, and dated 04/02/2012 has revealed that there is 1 Cortese site within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
BORTZ OIL COMPANY	***1746 NORTH SPRING STREE***	***WSW 0 - 1/8 (0.050 mi.)***	***B6***	***14***

HIST CORTESE: The sites for the list are designated by the State Water Resource Control Board [LUST], the Integrated Waste Board [SWF/LS], and the Department of Toxic Substances Control [CALSITES]. This listing is no longer updated by the state agency.

A review of the HIST CORTESE list, as provided by EDR, and dated 04/01/2001 has revealed that there are 12 HIST CORTESE sites within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
BORTZ OIL CO., INC.	***1746 N SPRING ST***	***WSW 0 - 1/8 (0.050 mi.)***	***B7***	***37***
BILL'S AUTOMOTIVE #2	***1796 N SPRING ST***	***ENE 1/8 - 1/4 (0.198 mi.)***	***I30***	***73***
UNION PACIFIC/RAILROAD CO	1322 BROADWAY	W 1/4 - 1/2 (0.353 mi.)	Q65	179
N E MUNICIPAL BUILDING	401 19	N 1/4 - 1/2 (0.475 mi.)	T76	206

Lower Elevation	Address	Direction / Distance	Map ID	Page
ALBION DAIRY (FORMER)	***1739 ALBION ST***	***SE 1/8 - 1/4 (0.194 mi.)***	***G22***	***54***
TRUFLEX RUBBER	***1667 N MAIN ST***	***SSW 1/8 - 1/4 (0.196 mi.)***	***H29***	***66***
MAIN STREET DAIRY (FORMER)	***1620 SPRING ST N***	***WSW 1/8 - 1/4 (0.215 mi.)***	***J34***	***80***
MAIN STREET OIL DEPOT	***1630 MAIN ST N***	***SSW 1/8 - 1/4 (0.224 mi.)***	***K41***	***128***
VALSPAR CORPORTION	***620 LAMAR ST***	***SE 1/4 - 1/2 (0.317 mi.)***	***P62***	***167***
TRANSIT MIXED CONCRETE CO-LOS	***625 LAMAR ST***	***SSE 1/4 - 1/2 (0.319 mi.)***	***P63***	***173***
EMPIRE CHEMICAL CO., INC.	***715 LAMAR ST***	***SSE 1/4 - 1/2 (0.429 mi.)***	***S73***	***199***
UPS MAIN ST. LA FACILITY	714 LAMAR	SSE 1/4 - 1/2 (0.430 mi.)	S75	206

This RCRA cleanup baseline includes facilities expected to need corrective action.

A review of the 2020 CORRECTIVE ACTION list, as provided by EDR, and dated 11/11/2011 has revealed that there is 1 2020 CORRECTIVE ACTION site within approximately 0.25 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
MAIN STREET CENTER	***1630 NORTH MAIN STREET,***	***SSW 1/8 - 1/4 (0.224 mi.)***	***K39***	***88***

HWP: Detailed information on permitted hazardous waste facilities and corrective action ("cleanups") tracked in EnviroStor.

A review of the HWP list, as provided by EDR, and dated 08/09/2010 has revealed that there is 1 HWP site within approximately 1 mile of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
MAIN STREET CENTER	***1630 NORTH MAIN STREET,***	***SSW 1/8 - 1/4 (0.224 mi.)***	***K39***	***88***

EXECUTIVE SUMMARY

EDR PROPRIETARY RECORDS

EDR Proprietary Records

Manufactured Gas Plants: The EDR Proprietary Manufactured Gas Plant Database includes records of coal gas plants (manufactured gas plants) compiled by EDR's researchers. Manufactured gas sites were used in the United States from the 1800's to 1950's to produce a gas that could be distributed and used as fuel. These plants used whale oil, rosin, coal, or a mixture of coal, oil, and water that also produced a significant amount of waste. Many of the byproducts of the gas production, such as coal tar (oily waste containing volatile and non-volatile chemicals), sludges, oils and other compounds are potentially hazardous to human health and the environment. The byproduct from this process was frequently disposed of directly at the plant site and can remain or spread slowly, serving as a continuous source of soil and groundwater contamination.

A review of the Manufactured Gas Plants list, as provided by EDR, has revealed that there are 3 Manufactured Gas Plants sites within approximately 1 mile of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
SO CAL GAS/ LA MAIN ST MGP	1630 NORTH MAIN STREET	SSW 1/8 - 1/4 (0.224 mi.)	K45	146
SO CAL GAS/ALISO E MGP	490 BAUCHET STREET AND	SSW 1/2 - 1 (0.779 mi.)	84	249
SO CAL GAS/ALISO D MGP	CESAR CHAVEZ AND LYONS	SSW 1/2 - 1 (0.914 mi.)	90	259

EDR Historical Auto Stations: EDR has searched selected national collections of business directories and has collected listings of potential gas station/filling station/service station sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include gas station/filling station/service station establishments. The categories reviewed included, but were not limited to gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, etc.

A review of the EDR Historical Auto Stations list, as provided by EDR, has revealed that there are 4 EDR Historical Auto Stations sites within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
SCHULZ P F	1796 N BROADWAY	ENE 1/8 - 1/4 (0.204 mi.)	I31	79
DETTRE SCHULZ	1801 N BROADWAY	ENE 1/8 - 1/4 (0.214 mi.)	I32	79
BROUWERS ALBT	1821 N BROADWAY	ENE 1/8 - 1/4 (0.233 mi.)	M54	155

Lower Elevation	Address	Direction / Distance	Map ID	Page
SCHLEGEL HERBT	1720 NAUD ST	SSW 0 - 1/8 (0.102 mi.)	C8	38

EDR Historical Cleaners: EDR has searched selected national collections of business directories and has collected listings of potential dry cleaner sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include dry cleaning establishments. The categories reviewed included, but were not limited to dry cleaners, cleaners, laundry, laundromat, cleaning/laundry, wash & dry etc.

A review of the EDR Historical Cleaners list, as provided by EDR, has revealed that there is 1 EDR Historical Cleaners site within approximately 0.25 miles of the target property.

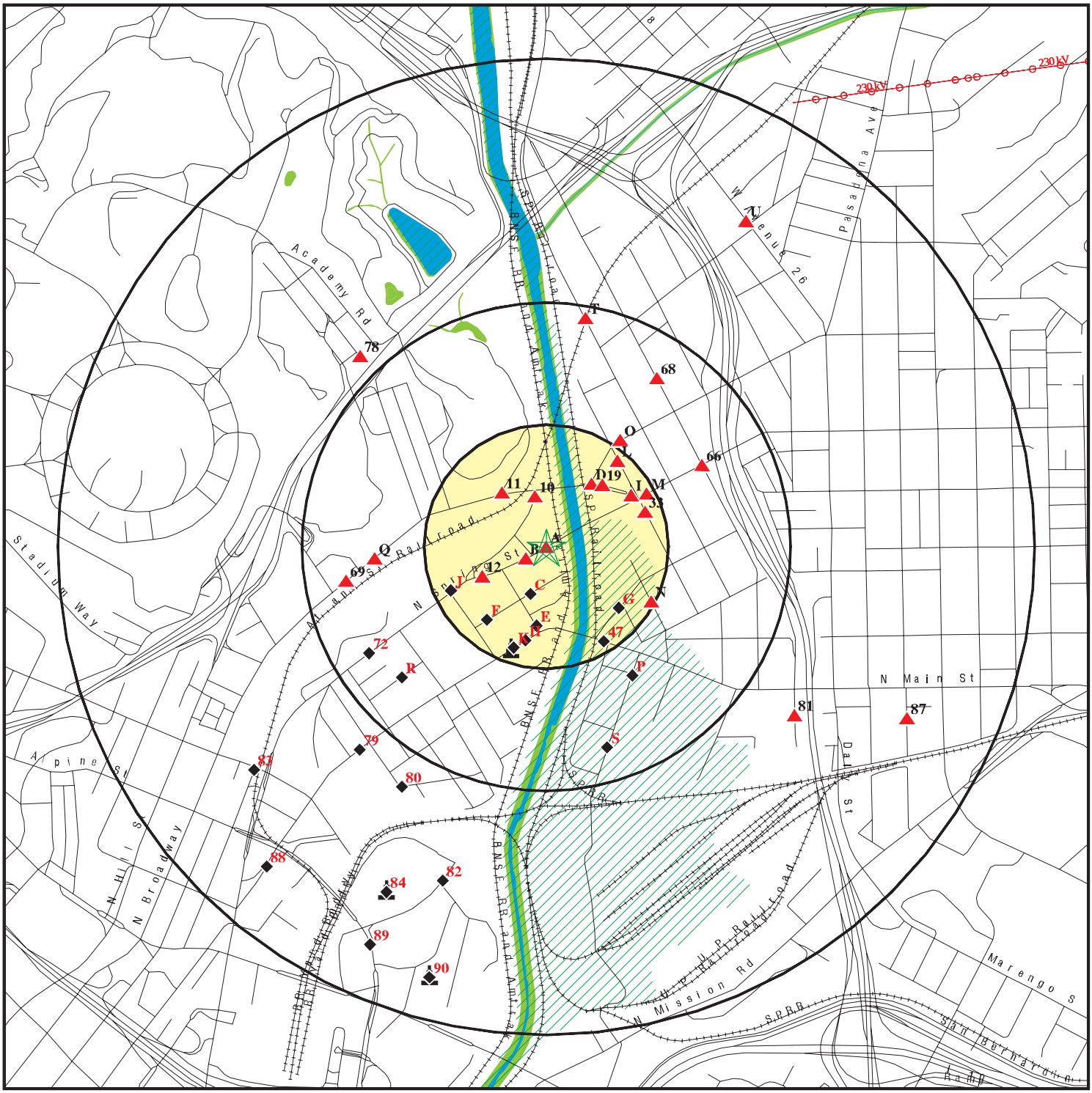
Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
FROOMSON SAML	1802 N BROADWAY	ENE 1/8 - 1/4 (0.220 mi.)	I38	88

EXECUTIVE SUMMARY

Due to poor or inadequate address information, the following sites were not mapped. Count: 20 records.

Site Name	Database(s)
TUNEUP MASTERS SHOP #67	HIST CORTESE
W-H TANK LINES INC	FINDS,HWP,HAZNET,RCRA-NLR,SLIC
	REGION 2
COMMERCIAL INDUSTRIAL	FID,SWEEPS UST
EMPIRE CHEMICAL COMPANY, INC.	FID,LUST SAN MATEO,SWEEPS UST
MAIN STREET ABANDONED DRUMS	CERCLIS
LA PUMPING PLANT #92	CERCLIS,FINDS,RCRA-SQG
BARON MFG	CERCLIS-NFRAP
ROSS SWISS DAIRIES	LUST SAN MATEO
MOBIL #11-H41 (FORMER)	LUST SAN MATEO
TRANSIT MIXED CONCRETE COMPANY	LUST SAN MATEO
	AST
LA DEPT OF WATER AND POWER BUENA V	HAZNET
CALTRANS	RCRA-SQG,FINDS
BUENA VISTA PUMP STATION	RCRA-LQG
	ERNS
	ERNS
	ERNS
IMANI FE	BROWNFIELDS
CROWN COACH SITE	BROWNFIELDS
METRO RAIL PASADENA BLUE LINE	ENVIROSTOR

OVERVIEW MAP - 3348112.2s



Target Property

Sites at elevations higher than or equal to the target property

Sites at elevations lower than the target property

Manufactured Gas Plants

National Priority List Sites

Dept. Defense Sites

0 1/4 1/2 1 Miles

Indian Reservations BIA

Power transmission lines

Oil & Gas pipelines from USGS

100-year flood zone

500-year flood zone

National Wetland Inventory

Areas of Concern

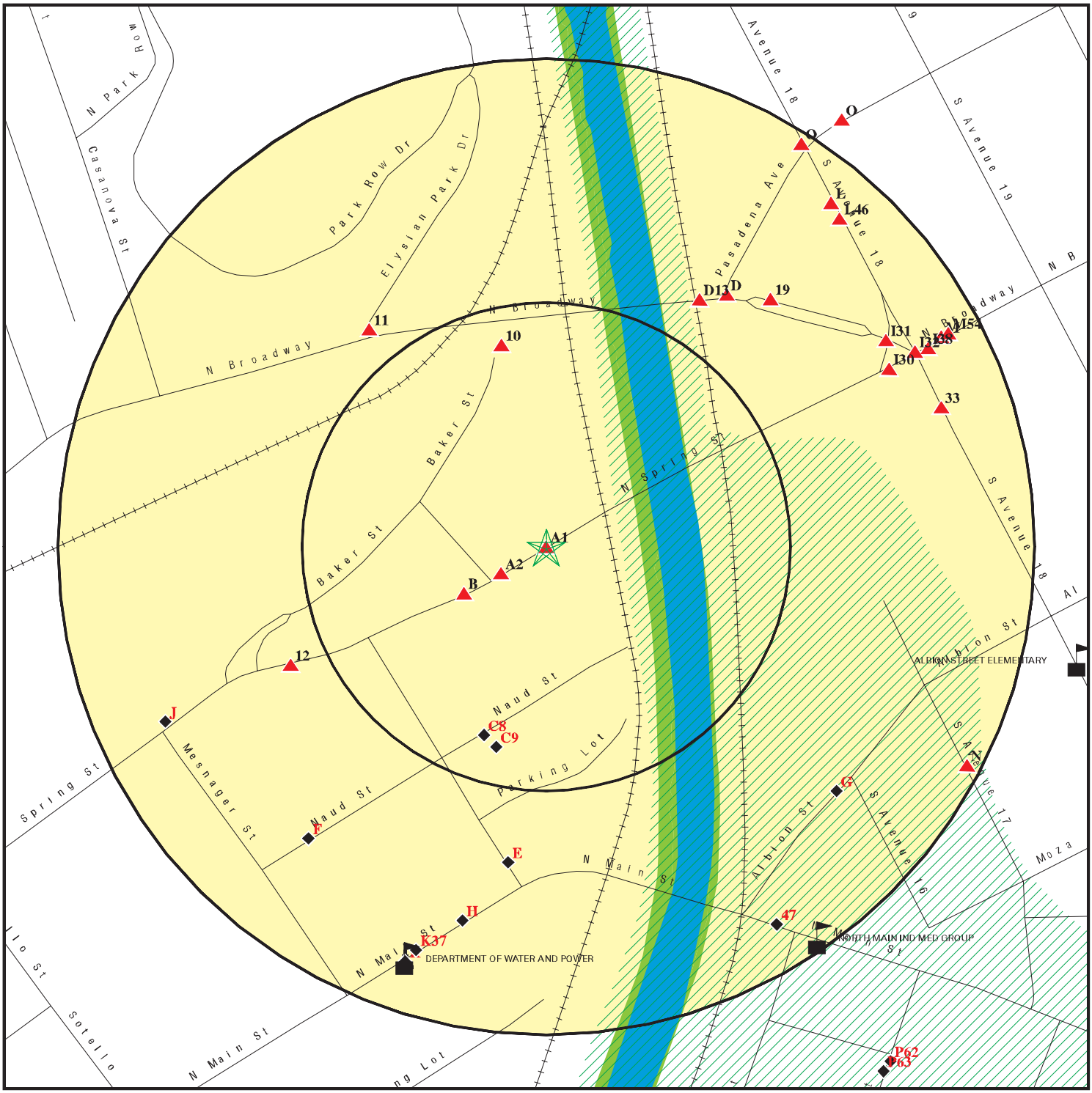
N

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME: Water Wheel ADDRESS: 1745 North Spring Street Los Angeles CA 90012 LAT/LONG: 34.0702 / 118.2257	CLIENT: GeoSyntec Consultants CONTACT: J. S. Rowlands INQUIRY #: 3348112.2s DATE: June 19, 2012 6:47 pm

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DETAIL MAP - 3348112.2s



0 1/16 1/8 1/4 Miles

- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- Sensitive Receptors
- National Priority List Sites
- Dept. Defense Sites
- Indian Reservations BIA
- Oil & Gas pipelines from USGS
- 100-year flood zone
- 500-year flood zone
- National Wetland Inventory
- Areas of Concern

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME: Water Wheel	CLIENT: GeoSyntec Consultants
ADDRESS: 1745 North Spring Street Los Angeles CA 90012	CONTACT: J. S. Rowlands
LAT/LONG: 34.0702 / 118.2257	INQUIRY #: 3348112.2s
	DATE: June 19, 2012 6:48 pm

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MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
STANDARD ENVIRONMENTAL RECORDS								
Federal NPL site list								
NPL	1.000		0	0	0	0	NR	0
Proposed NPL	1.000		0	0	0	0	NR	0
NPL LIENS	TP		NR	NR	NR	NR	NR	0
Federal Delisted NPL site list								
Delisted NPL	1.000		0	0	0	0	NR	0
Federal CERCLIS list								
CERCLIS	0.500		0	0	0	NR	NR	0
FEDERAL FACILITY	1.000		0	0	0	0	NR	0
Federal CERCLIS NFRAP site List								
CERC-NFRAP	0.500		0	2	1	NR	NR	3
Federal RCRA CORRACTS facilities list								
CORRACTS	1.000		0	1	0	0	NR	1
Federal RCRA non-CORRACTS TSD facilities list								
RCRA-TSDF	0.500		0	1	0	NR	NR	1
Federal RCRA generators list								
RCRA-LQG	0.250		1	2	NR	NR	NR	3
RCRA-SQG	0.250		1	4	NR	NR	NR	5
RCRA-CESQG	0.250		0	0	NR	NR	NR	0
Federal institutional controls / engineering controls registries								
US ENG CONTROLS	0.500		0	0	0	NR	NR	0
US INST CONTROL	0.500		0	0	0	NR	NR	0
Federal ERNS list								
ERNS	TP		NR	NR	NR	NR	NR	0
State- and tribal - equivalent NPL								
RESPONSE	1.000		1	0	0	2	NR	3
State- and tribal - equivalent CERCLIS								
ENVIROSTOR	1.000		1	3	4	10	NR	18
State and tribal landfill and/or solid waste disposal site lists								
SWF/LF	0.500		0	0	0	NR	NR	0
State and tribal leaking storage tank lists								
LUST	0.500		1	4	11	NR	NR	16
SLIC	0.500		1	2	1	NR	NR	4

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
INDIAN LUST	0.500		0	0	0	NR	NR	0
State and tribal registered storage tank lists								
UST	0.250		0	5	NR	NR	NR	5
AST	0.250		0	0	NR	NR	NR	0
INDIAN UST	0.250		0	0	NR	NR	NR	0
FEMA UST	0.250		0	0	NR	NR	NR	0
State and tribal voluntary cleanup sites								
VCP	0.500		0	1	1	NR	NR	2
INDIAN VCP	0.500		0	0	0	NR	NR	0
ADDITIONAL ENVIRONMENTAL RECORDS								
Local Brownfield lists								
US BROWNFIELDS	0.500		0	0	0	NR	NR	0
Local Lists of Landfill / Solid Waste Disposal Sites								
DEBRIS REGION 9	0.500		0	0	0	NR	NR	0
ODI	0.500		0	0	0	NR	NR	0
WMUDS/SWAT	0.500		0	0	0	NR	NR	0
SWRCY	0.500		0	0	0	NR	NR	0
HAULERS	TP		NR	NR	NR	NR	NR	0
INDIAN ODI	0.500		0	0	0	NR	NR	0
Local Lists of Hazardous waste / Contaminated Sites								
US CDL	TP		NR	NR	NR	NR	NR	0
HIST Cal-Sites	1.000		1	0	0	2	NR	3
SCH	0.250		0	0	NR	NR	NR	0
Toxic Pits	1.000		0	0	0	0	NR	0
AOCONCERN	1.000		0	0	0	0	NR	0
CDL	TP		NR	NR	NR	NR	NR	0
US HIST CDL	TP		NR	NR	NR	NR	NR	0
Local Lists of Registered Storage Tanks								
CA FID UST	0.250		1	19	NR	NR	NR	20
HIST UST	0.250		1	9	NR	NR	NR	10
SWEEPS UST	0.250		1	19	NR	NR	NR	20
Local Land Records								
LIENS 2	TP		NR	NR	NR	NR	NR	0
LUCIS	0.500		0	0	0	NR	NR	0
LIENS	TP		NR	NR	NR	NR	NR	0
DEED	0.500		1	0	1	NR	NR	2
Records of Emergency Release Reports								
HMIRS	TP		NR	NR	NR	NR	NR	0
CHMIRS	TP		NR	NR	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
LDS	TP		NR	NR	NR	NR	NR	0
MCS	TP		NR	NR	NR	NR	NR	0
Other Ascertainable Records								
RCRA-NonGen	0.250		1	0	NR	NR	NR	1
DOT OPS	TP		NR	NR	NR	NR	NR	0
DOD	1.000		0	0	0	0	NR	0
FUDS	1.000		0	0	0	0	NR	0
CONSENT	1.000		0	0	0	1	NR	1
ROD	1.000		0	0	0	0	NR	0
UMTRA	0.500		0	0	0	NR	NR	0
MINES	0.250		0	0	NR	NR	NR	0
TRIS	TP		NR	NR	NR	NR	NR	0
TSCA	TP		NR	NR	NR	NR	NR	0
FTTS	TP	1	NR	NR	NR	NR	NR	1
HIST FTTS	TP	1	NR	NR	NR	NR	NR	1
SSTS	TP		NR	NR	NR	NR	NR	0
ICIS	TP		NR	NR	NR	NR	NR	0
PADS	TP		NR	NR	NR	NR	NR	0
MLTS	TP		NR	NR	NR	NR	NR	0
RADINFO	TP		NR	NR	NR	NR	NR	0
FINDS	TP	1	NR	NR	NR	NR	NR	1
RAATS	TP		NR	NR	NR	NR	NR	0
CA BOND EXP. PLAN	1.000		1	0	0	0	NR	1
UIC	TP		NR	NR	NR	NR	NR	0
NPDES	TP		NR	NR	NR	NR	NR	0
WDS	TP		NR	NR	NR	NR	NR	0
Cortese	0.500		1	0	0	NR	NR	1
HIST CORTESE	0.500		1	5	6	NR	NR	12
Notify 65	1.000		0	0	0	0	NR	0
LA Co. Site Mitigation	TP		NR	NR	NR	NR	NR	0
DRYCLEANERS	0.250		0	0	NR	NR	NR	0
WIP	0.250		0	0	NR	NR	NR	0
LOS ANGELES CO. HMS	TP		NR	NR	NR	NR	NR	0
ENF	TP		NR	NR	NR	NR	NR	0
HAZNET	TP		NR	NR	NR	NR	NR	0
EMI	TP		NR	NR	NR	NR	NR	0
INDIAN RESERV	1.000		0	0	0	0	NR	0
SCRD DRYCLEANERS	0.500		0	0	0	NR	NR	0
PCB TRANSFORMER	TP		NR	NR	NR	NR	NR	0
COAL ASH EPA	0.500		0	0	0	NR	NR	0
EPA WATCH LIST	TP		NR	NR	NR	NR	NR	0
2020 CORRECTIVE ACTION	0.250		0	1	NR	NR	NR	1
COAL ASH DOE	TP		NR	NR	NR	NR	NR	0
HWP	1.000		0	1	0	0	NR	1
HWT	0.250		0	0	NR	NR	NR	0
PROC	0.500		0	0	0	NR	NR	0
FINANCIAL ASSURANCE	TP		NR	NR	NR	NR	NR	0
MWMP	0.250		0	0	NR	NR	NR	0
EDR PROPRIETARY RECORDS								
EDR Proprietary Records								
Manufactured Gas Plants	1.000		0	1	0	2	NR	3

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
EDR Historical Auto Stations	0.250		1	3	NR	NR	NR	4
EDR Historical Cleaners	0.250		0	1	NR	NR	NR	1

NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

A1
Target
Property

CATHAY COMPANY INC.
1745 N SPRING ST
LOS ANGELES, CA 90012

FTTS **1005622916**
HIST FTTS **N/A**
FINDS

Site 1 of 2 in cluster A

Actual:
307 ft.

FTTS INSP:

Inspection Number:	19960402F3262 1
Region:	09
Inspection Date:	04/02/96
Inspector:	MGUTIERREZ
Violation occurred:	No
Investigation Type:	Import
Investigation Reason:	For Cause, Government
Legislation Code:	FIFRA
Facility Function:	Marketplace

HIST FTTS INSP:

Inspection Number:	19960402F3262 1
Region:	09
Inspection Date:	Not reported
Inspector:	MGUTIERREZ
Violation occurred:	No
Investigation Type:	Import
Investigation Reason:	For Cause, Government
Legislation Code:	FIFRA
Facility Function:	Marketplace

FINDS:

Registry ID: 110011646362

Environmental Interest/Information System
NCDB (National Compliance Data Base) supports implementation of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) and the Toxic Substances Control Act (TSCA). The system tracks inspections in regions and states with cooperative agreements, enforcement actions, and settlements.

A2
WSW
< 1/8
0.027 mi.
142 ft.

K M OFFICE SERVICES
1733 N SPRING ST
LOS ANGELES, CA 90012

RCRA-SQG **1004675415**
FINDS **CAR000072637**

Site 2 of 2 in cluster A

Relative:
Higher

Actual:
309 ft.

RCRA-SQG:

Date form received by agency:	05/08/2000
Facility name:	K M OFFICE SERVICES
Facility address:	1733 N SPRING ST LOS ANGELES, CA 90012
EPA ID:	CAR000072637
Contact:	BABE CROICK
Contact address:	1733 N SPRING ST LOS ANGELES, CA 90012
Contact country:	US
Contact telephone:	(323) 224-0297

K M OFFICE SERVICES (Continued) **1004675415**

Contact email: Not reported
EPA Region: 09
Classification: Small Small Quantity Generator
Description: Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:
Owner/operator name: BABE CRONICK
Owner/operator address: 1733 N SPRING ST
LOS ANGELES, CA 90012
Owner/operator country: Not reported
Owner/operator telephone: (323) 224-0297
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Historical Generators:
Date form received by agency: 05/08/2000
Facility name: K M OFFICE SERVICES
Classification: Small Quantity Generator

Hazardous Waste Summary:
Waste code: D001
Waste name: IGNITABLE HAZARDOUS WASTES ARE THOSE WASTES WHICH HAVE A FLASHPOINT OF LESS THAN 140 DEGREES FAHRENHEIT AS DETERMINED BY A PENSKY-MARTENS CLOSED CUP FLASH POINT TESTER. ANOTHER METHOD OF DETERMINING THE FLASH POINT OF A WASTE IS TO REVIEW THE MATERIAL SAFETY DATA SHEET, WHICH CAN BE OBTAINED FROM THE MANUFACTURER OR DISTRIBUTOR OF THE MATERIAL. LACQUER THINNER IS AN EXAMPLE OF A COMMONLY USED SOLVENT WHICH WOULD BE CONSIDERED AS IGNITABLE HAZARDOUS WASTE.

Waste code: D002
Waste name: A WASTE WHICH HAS A PH OF LESS THAN 2 OR GREATER THAN 12.5 IS CONSIDERED TO BE A CORROSIVE HAZARDOUS WASTE. SODIUM HYDROXIDE, A

K M OFFICE SERVICES (Continued) **1004675415**

CAUSTIC SOLUTION WITH A HIGH PH, IS OFTEN USED BY INDUSTRIES TO CLEAN OR DEGREASE PARTS. HYDROCHLORIC ACID, A SOLUTION WITH A LOW PH, IS USED BY MANY INDUSTRIES TO CLEAN METAL PARTS PRIOR TO PAINTING. WHEN THESE CAUSTIC OR ACID SOLUTIONS BECOME CONTAMINATED AND MUST BE DISPOSED, THE WASTE WOULD BE A CORROSIVE HAZARDOUS WASTE.

Violation Status: No violations found

FINDS:

Registry ID: 110002936681

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

B3 **BORTZ OIL** **LUST S105034018**
WSW **1746 SPRING ST N** **SLIC N/A**
< 1/8 **LOS ANGELES, CA 90012**
0.048 mi.
255 ft. **Site 1 of 5 in cluster B**

Relative:
Higher

Actual:
310 ft.

LUST REG 4:

Region:	4	
Regional Board:	04	
County:	Los Angeles	
Facility Id:	000776	
Status:	Pollution Characterization	
Substance:	Gasoline	
Substance Quantity:	Not reported	
Local Case No:	Not reported	
Case Type:	Groundwater	
Abatement Method Used at the Site:		Not reported
Global ID:	T0603700024	
W Global ID:	W0605100649	
Staff:	TOX	
Local Agency:	19050	
Cross Street:	WILHARDT	
Enforcement Type:	Not reported	
Date Leak Discovered:	10/16/1986	
Date Leak First Reported:		4/15/1986
Date Leak Record Entered:	12/31/1986	
Date Confirmation Began:	Not reported	
Date Leak Stopped:	10/16/1986	
Date Case Last Changed on Database:		8/10/1987
Date the Case was Closed:		Not reported
How Leak Discovered:	Tank Closure	
How Leak Stopped:	Not reported	
Cause of Leak:	UNK	
Leak Source:	UNK	
Operator:	BORTZ, STEVE	
Water System:	DAVE GRIFFITH L A D W P	
Well Name:	Not reported	

BORTZ OIL (Continued) **S105034018**

Approx. Dist To Production Well (ft):	6385.199841498733730782547849
Source of Cleanup Funding:	UNK
Preliminary Site Assessment Workplan Submitted:	Not reported
Preliminary Site Assessment Began:	Not reported
Pollution Characterization Began:	8/10/1987
Remediation Plan Submitted:	Not reported
Remedial Action Underway:	Not reported
Post Remedial Action Monitoring Began:	Not reported
Enforcement Action Date:	Not reported
Historical Max MTBE Date:	Not reported
Hist Max MTBE Conc in Groundwater:	Not reported
Hist Max MTBE Conc in Soil:	Not reported
Significant Interim Remedial Action Taken:	Not reported
GW Qualifier:	Not reported
Soil Qualifier:	Not reported
Organization:	Not reported
Owner Contact:	Not reported
Responsible Party:	BORTZ, LEO
RP Address:	1746 N SPRING, LOS ANGELES, CA 90012
Program:	SLIC
Lat/Long:	34.070334 / -1
Local Agency Staff:	PEJ
Beneficial Use:	Not reported
Priority:	Not reported
Cleanup Fund Id:	Not reported
Suspended:	Not reported
Assigned Name:	2600649-001GEN
Summary:	Not reported

SLIC:

Region:	STATE
Facility Status:	**Open - Site Assessment**
Status Date:	08/10/1987
Global Id:	T0603700024
Lead Agency:	LOS ANGELES RWQCB (REGION 4)
Lead Agency Case Number:	Not reported
Latitude:	34.070334
Longitude:	-118.2248486
Case Type:	Cleanup Program Site
Case Worker:	DDD
Local Agency:	LOS ANGELES, CITY OF
RB Case Number:	000776
File Location:	Not reported
Potential Media Affected:	Aquifer used for drinking water supply
Potential Contaminants of Concern:	Gasoline
Site History:	Not reported

Click here to access the California GeoTracker records for this facility:

B4 **BORTZ OIL COMPANY** **CA BOND EXP. PLAN** **S105960450**
WSW **1746 NORTH SPRING STREET, P.O BOX 60368** **N/A**
< 1/8 **LOS ANGELES, CA 90060**
0.050 mi.
265 ft. **Site 2 of 5 in cluster B**

Relative:
Higher

Actual:
310 ft.

CA BOND EXP. PLAN:

Reponsible Party:	DETAILED SITE EXPENDITURE PLAN
Project Revenue Source Company:	Not reported
Project Revenue Source Addr:	Not reported
Project Revenue Source City,St,Zip:	Not reported
Project Revenue Source Desc:	The responsible parties have been found to be in noncompliance with an order issued by the Department. Therefore, it will be necessary to utilize Bond funds to remediate this site. DHS will undertake appropriate cost recovery actions. This has not been identified as a NPL site, nor does it appear, to be a likely NPL candidate in the future. Therefore, it appears unlikely that federal funds are a viable source of revenue for this site.
Site Description:	Bortz Oil was a petroleum products blending and packaging facility. The packaging warehouse was destroyed by fire in 1984. During reconstruction, pervasive subsurface contamination was detected. The site now operates only as a warehouse for storage of chemical products.
Hazardous Waste Desc:	Subsurface exploration has revealed that the soil and ground water are contaminated with acetone, toluene, xylene, benzene, methyl ethyl ketone (MEK), methylene chloride and 1,2-dichloroethane (DCE).
Threat To Public Health & Env:	Major routes of concern for human and animal exposure are soils, surface water and ground water. The Los Angeles River Channel is 100 feet from the site. Contamination of the soil and ground water was documented in January, 1986. The shallow and deeper aquifers are believed to be hydraulically connected. Soil gas vapors could pose an explosive threat; no threat has been identified to date.
Site Activity Status:	A remedial action order was issued April 13, 1987 directing the RPs to mitigate the site. A remedial investigation work plan was submitted and approved with modifications by DHS. Implementation of the remedial investigation commenced August 10, 1987. Routine monitoring of the ground water monitoring wells and vapor collection system is being conducted. The responsible parties were found in non-compliance with the order on April 28, 1988. Completion of the RI/FS is projected for January, 1990.

B5 **BORTZ OIL CO., INC.** **CA FID UST** **S101617133**
WSW **1746 N SPRING ST** **SWEEPS UST** **N/A**
< 1/8 **LOS ANGELES, CA 90012**
0.050 mi.
265 ft. **Site 3 of 5 in cluster B**

Relative:
Higher

Actual:
310 ft.

CA FID UST:

Facility ID:	19001193
Regulated By:	UTNKI
Regulated ID:	00020984
Cortese Code:	Not reported
SIC Code:	Not reported
Facility Phone:	2132231067
Mail To:	Not reported
Mailing Address:	1746 N SPRING ST
Mailing Address 2:	Not reported
Mailing City,St,Zip:	LOS ANGELES 900120000
Contact:	Not reported
Contact Phone:	Not reported
DUNs Number:	Not reported
NPDES Number:	Not reported
EPA ID:	Not reported

BORTZ OIL CO., INC. (Continued) **S101617133**

Comments: Not reported
Status: Inactive

SWEEPS UST:
Status: Not reported
Comp Number: 1514
Number: Not reported
Board Of Equalization: 44-011836
Ref Date: Not reported
Act Date: Not reported
Created Date: Not reported
Tank Status: Not reported
Owner Tank Id: Not reported
Swrcb Tank Id: 19-050-001514-000001
Actv Date: Not reported
Capacity: 2000
Tank Use: CHEMICAL
Stg: PRODUCT
Content: UNKNOWN
Number Of Tanks: 4

Status: Not reported
Comp Number: 1514
Number: Not reported
Board Of Equalization: 44-011836
Ref Date: Not reported
Act Date: Not reported
Created Date: Not reported
Tank Status: Not reported
Owner Tank Id: Not reported
Swrcb Tank Id: 19-050-001514-000002
Actv Date: Not reported
Capacity: 4000
Tank Use: CHEMICAL
Stg: PRODUCT
Content: UNKNOWN
Number Of Tanks: Not reported

Status: Not reported
Comp Number: 1514
Number: Not reported
Board Of Equalization: 44-011836
Ref Date: Not reported
Act Date: Not reported
Created Date: Not reported
Tank Status: Not reported
Owner Tank Id: Not reported
Swrcb Tank Id: 19-050-001514-000003
Actv Date: Not reported
Capacity: Not reported
Tank Use: M.V. FUEL
Stg: PRODUCT
Content: REG UNLEADED
Number Of Tanks: Not reported

Status: Not reported
Comp Number: 1514

BORTZ OIL CO., INC. (Continued) **S101617133**

Number:	Not reported
Board Of Equalization:	44-011836
Ref Date:	Not reported
Act Date:	Not reported
Created Date:	Not reported
Tank Status:	Not reported
Owner Tank Id:	Not reported
Swrcb Tank Id:	19-050-001514-000004
Actv Date:	Not reported
Capacity:	6000
Tank Use:	CHEMICAL
Stg:	PRODUCT
Content:	UNKNOWN
Number Of Tanks:	Not reported

B6 **BORTZ OIL COMPANY** **HIST Cal-Sites** **S100833375**
WSW **1746 NORTH SPRING STREET** **Cortese** **N/A**
< 1/8 **LOS ANGELES, CA 90012** **DEED**
0.050 mi. **RESPONSE**
265 ft. **Site 4 of 5 in cluster B** **ENVIROSTOR**

Relative:
Higher

Actual:
310 ft.

Calsite:

Facility ID:	19290289
Region:	3
Region Name:	GLENDALE
Branch:	SA
Branch Name:	SO CAL - GLENDALE
File Name:	Not reported
State Senate District:	08011996
Status:	ANNUAL WORKPLAN (AWP) - ACTIVE SITE
Status Name:	ANNUAL WORKPLAN - ACTIVE SITE
Lead Agency:	DTSC
Lead Agency:	DEPT OF TOXIC SUBSTANCES CONTROL
Facility Type:	RP
Type Name:	RESPONSIBLE PARTY
NPL:	Not Listed
SIC Code:	29
SIC Name:	MANU - PETROLEUM & COAL PRODUCTS
Access:	Not reported
Cortese:	Not reported
Hazardous Ranking Score:	Not reported
Date Site Hazard Ranked:	Not reported
Groundwater Contamination:	Confirmed
Staff Member Responsible for Site:	LPARNASS
Supervisor Responsible for Site:	Not reported
Region Water Control Board:	Not reported
Region Water Control Board Name:	Not reported
Lat/Long Direction:	Not reported
Lat/Long (dms):	0 0 0 / 0 0 0
Lat/long Method:	Not reported
Lat/Long Description:	Not reported
State Assembly District Code:	45
State Senate District Code:	22
Facility ID:	19290289
Activity:	ORDER
Activity Name:	I/SE, IORSE, FFA, FFSRA, VCA, EA
AWP Code:	RAO
Proposed Budget:	0

BORTZ OIL COMPANY (Continued) **S100833375**

AWP Completion Date:	Not reported
Revised Due Date:	Not reported
Comments Date:	04151987
Est Person-Yrs to complete:	0
Estimated Size:	Not reported
Request to Delete Activity:	Not reported
Activity Status:	AWP
Definition of Status:	ANNUAL WORKPLAN - ACTIVE SITE
Liquids Removed (Gals):	0
Liquids Treated (Gals):	0
Action Included Capping:	Not reported
Well Decommissioned:	Not reported
Action Included Fencing:	Not reported
Removal Action Certification:	Not reported
Activity Comments:	Not reported
For Commercial Reuse:	0
For Industrial Reuse:	0
For Residential Reuse:	0
Unknown Type:	0
Facility ID:	19290289
Activity:	ORDER
Activity Name:	I/SE, IORSE, FFA, FFSRA, VCA, EA
AWP Code:	AMEND
Proposed Budget:	0
AWP Completion Date:	Not reported
Revised Due Date:	Not reported
Comments Date:	07061988
Est Person-Yrs to complete:	0
Estimated Size:	Not reported
Request to Delete Activity:	Not reported
Activity Status:	AWP
Definition of Status:	ANNUAL WORKPLAN - ACTIVE SITE
Liquids Removed (Gals):	0
Liquids Treated (Gals):	0
Action Included Capping:	Not reported
Well Decommissioned:	Not reported
Action Included Fencing:	Not reported
Removal Action Certification:	Not reported
Activity Comments:	Not reported
For Commercial Reuse:	0
For Industrial Reuse:	0
For Residential Reuse:	0
Unknown Type:	0
Facility ID:	19290289
Activity:	FDNC
Activity Name:	FINAL DETERMINATION OF NON-COMPLIANCE
AWP Code:	Not reported
Proposed Budget:	0
AWP Completion Date:	Not reported
Revised Due Date:	Not reported
Comments Date:	07311990
Est Person-Yrs to complete:	0
Estimated Size:	Not reported
Request to Delete Activity:	Not reported
Activity Status:	AWP
Definition of Status:	ANNUAL WORKPLAN - ACTIVE SITE
Liquids Removed (Gals):	0

BORTZ OIL COMPANY (Continued) **S100833375**

Liquids Treated (Gals):	0
Action Included Capping:	Not reported
Well Decommissioned:	Not reported
Action Included Fencing:	Not reported
Removal Action Certification:	Not reported
Activity Comments:	Not reported
For Commercial Reuse:	0
For Industrial Reuse:	0
For Residential Reuse:	0
Unknown Type:	0
Facility ID:	19290289
Activity:	ORDER
Activity Name:	I/SE, IORSE, FFA, FFSRA, VCA, EA
AWP Code:	NAUD
Proposed Budget:	0
AWP Completion Date:	Not reported
Revised Due Date:	Not reported
Comments Date:	10231992
Est Person-Yrs to complete:	0
Estimated Size:	Not reported
Request to Delete Activity:	Not reported
Activity Status:	AWP
Definition of Status:	ANNUAL WORKPLAN - ACTIVE SITE
Liquids Removed (Gals):	0
Liquids Treated (Gals):	0
Action Included Capping:	Not reported
Well Decommissioned:	Not reported
Action Included Fencing:	Not reported
Removal Action Certification:	Not reported
Activity Comments:	Not reported
For Commercial Reuse:	0
For Industrial Reuse:	0
For Residential Reuse:	0
Unknown Type:	0
Facility ID:	19290289
Activity:	FRIFS
Activity Name:	FOCUSED REMEDIAL INVESTIGATION/FEASIBILITY STUDY
AWP Code:	NAUD
Proposed Budget:	0
AWP Completion Date:	Not reported
Revised Due Date:	Not reported
Comments Date:	01261993
Est Person-Yrs to complete:	0
Estimated Size:	Not reported
Request to Delete Activity:	Not reported
Activity Status:	AWP
Definition of Status:	ANNUAL WORKPLAN - ACTIVE SITE
Liquids Removed (Gals):	0
Liquids Treated (Gals):	0
Action Included Capping:	Not reported
Well Decommissioned:	Not reported
Action Included Fencing:	Not reported
Removal Action Certification:	Not reported
Activity Comments:	Not reported
For Commercial Reuse:	0
For Industrial Reuse:	0
For Residential Reuse:	0

BORTZ OIL COMPANY (Continued) **S100833375**

Unknown Type:	0
Facility ID:	19290289
Activity:	CEQA
Activity Name:	CEQA INCLUDING NEGATIVE DECS
AWP Code:	NAUD
Proposed Budget:	0
AWP Completion Date:	Not reported
Revised Due Date:	Not reported
Comments Date:	07071993
Est Person-Yrs to complete:	0
Estimated Size:	Not reported
Request to Delete Activity:	Not reported
Activity Status:	AWP
Definition of Status:	ANNUAL WORKPLAN - ACTIVE SITE
Liquids Removed (Gals):	0
Liquids Treated (Gals):	0
Action Included Capping:	Not reported
Well Decommissioned:	Not reported
Action Included Fencing:	Not reported
Removal Action Certification:	Not reported
Activity Comments:	Not reported
For Commercial Reuse:	0
For Industrial Reuse:	0
For Residential Reuse:	0
Unknown Type:	0
Facility ID:	19290289
Activity:	CEQA
Activity Name:	CEQA INCLUDING NEGATIVE DECS
AWP Code:	NEGDE
Proposed Budget:	0
AWP Completion Date:	Not reported
Revised Due Date:	Not reported
Comments Date:	07071993
Est Person-Yrs to complete:	0
Estimated Size:	Not reported
Request to Delete Activity:	Not reported
Activity Status:	AWP
Definition of Status:	ANNUAL WORKPLAN - ACTIVE SITE
Liquids Removed (Gals):	0
Liquids Treated (Gals):	0
Action Included Capping:	Not reported
Well Decommissioned:	Not reported
Action Included Fencing:	Not reported
Removal Action Certification:	Not reported
Activity Comments:	Not reported
For Commercial Reuse:	0
For Industrial Reuse:	0
For Residential Reuse:	0
Unknown Type:	0
Facility ID:	19290289
Activity:	DES
Activity Name:	DESIGN
AWP Code:	NAUD
Proposed Budget:	0
AWP Completion Date:	Not reported
Revised Due Date:	Not reported
Comments Date:	07081993

BORTZ OIL COMPANY (Continued) **S100833375**

Est Person-Yrs to complete:	0
Estimated Size:	Not reported
Request to Delete Activity:	Not reported
Activity Status:	AWP
Definition of Status:	ANNUAL WORKPLAN - ACTIVE SITE
Liquids Removed (Gals):	0
Liquids Treated (Gals):	0
Action Included Capping:	Not reported
Well Decommissioned:	Not reported
Action Included Fencing:	Not reported
Removal Action Certification:	Not reported
Activity Comments:	Not reported
For Commercial Reuse:	0
For Industrial Reuse:	0
For Residential Reuse:	0
Unknown Type:	0
Facility ID:	19290289
Activity:	RAP
Activity Name:	REMEDIAL ACTION PLAN / RECORD OF DECISION
AWP Code:	NAUD
Proposed Budget:	0
AWP Completion Date:	Not reported
Revised Due Date:	Not reported
Comments Date:	07081993
Est Person-Yrs to complete:	0
Estimated Size:	Not reported
Request to Delete Activity:	Not reported
Activity Status:	AWP
Definition of Status:	ANNUAL WORKPLAN - ACTIVE SITE
Liquids Removed (Gals):	0
Liquids Treated (Gals):	0
Action Included Capping:	Not reported
Well Decommissioned:	Not reported
Action Included Fencing:	Not reported
Removal Action Certification:	Not reported
Activity Comments:	Not reported
For Commercial Reuse:	0
For Industrial Reuse:	0
For Residential Reuse:	0
Unknown Type:	0
Facility ID:	19290289
Activity:	FRA
Activity Name:	FINAL REMEDIAL ACTION
AWP Code:	NAUD
Proposed Budget:	0
AWP Completion Date:	Not reported
Revised Due Date:	Not reported
Comments Date:	10281993
Est Person-Yrs to complete:	0
Estimated Size:	Not reported
Request to Delete Activity:	Not reported
Activity Status:	AWP
Definition of Status:	ANNUAL WORKPLAN - ACTIVE SITE
Liquids Removed (Gals):	0
Liquids Treated (Gals):	0
Action Included Capping:	Not reported
Well Decommissioned:	Not reported

BORTZ OIL COMPANY (Continued) **S100833375**

Action Included Fencing:	Not reported
Removal Action Certification:	Not reported
Activity Comments:	Not reported
For Commercial Reuse:	0
For Industrial Reuse:	0
For Residential Reuse:	0
Unknown Type:	0
Facility ID:	19290289
Activity:	CEQA
Activity Name:	CEQA INCLUDING NEGATIVE DECS
AWP Code:	Not reported
Proposed Budget:	0
AWP Completion Date:	Not reported
Revised Due Date:	Not reported
Comments Date:	08021996
Est Person-Yrs to complete:	0
Estimated Size:	Not reported
Request to Delete Activity:	Not reported
Activity Status:	AWP
Definition of Status:	ANNUAL WORKPLAN - ACTIVE SITE
Liquids Removed (Gals):	0
Liquids Treated (Gals):	0
Action Included Capping:	Not reported
Well Decommissioned:	Not reported
Action Included Fencing:	Not reported
Removal Action Certification:	Not reported
Activity Comments:	Not reported
For Commercial Reuse:	0
For Industrial Reuse:	0
For Residential Reuse:	0
Unknown Type:	0
Facility ID:	19290289
Activity:	RAW
Activity Name:	REMOVAL ACTION WORKPLAN
AWP Code:	Not reported
Proposed Budget:	0
AWP Completion Date:	Not reported
Revised Due Date:	Not reported
Comments Date:	08021996
Est Person-Yrs to complete:	0
Estimated Size:	Not reported
Request to Delete Activity:	Not reported
Activity Status:	AWP
Definition of Status:	ANNUAL WORKPLAN - ACTIVE SITE
Liquids Removed (Gals):	0
Liquids Treated (Gals):	0
Action Included Capping:	Not reported
Well Decommissioned:	Not reported
Action Included Fencing:	Not reported
Removal Action Certification:	Not reported
Activity Comments:	Not reported
For Commercial Reuse:	0
For Industrial Reuse:	0
For Residential Reuse:	0
Unknown Type:	0
Facility ID:	19290289
Activity:	RA

BORTZ OIL COMPANY (Continued) **S100833375**

Activity Name:	REMOVAL ACTION
AWP Code:	Not reported
Proposed Budget:	0
AWP Completion Date:	Not reported
Revised Due Date:	Not reported
Comments Date:	10311997
Est Person-Yrs to complete:	0
Estimated Size:	S
Request to Delete Activity:	Not reported
Activity Status:	AWP
Definition of Status:	ANNUAL WORKPLAN - ACTIVE SITE
Liquids Removed (Gals):	0
Liquids Treated (Gals):	0
Action Included Capping:	Not reported
Well Decommissioned:	Not reported
Action Included Fencing:	Not reported
Removal Action Certification:	Not reported
Activity Comments:	Not reported
For Commercial Reuse:	0
For Industrial Reuse:	0
For Residential Reuse:	0
Unknown Type:	0
Facility ID:	19290289
Activity:	CHP65
Activity Name:	AMENDED ORDER/AGREEMENT, CHAPTER 6.5 TRANSITION
AWP Code:	ORDER
Proposed Budget:	0
AWP Completion Date:	Not reported
Revised Due Date:	Not reported
Comments Date:	12211998
Est Person-Yrs to complete:	0
Estimated Size:	Not reported
Request to Delete Activity:	Not reported
Activity Status:	AWP
Definition of Status:	ANNUAL WORKPLAN - ACTIVE SITE
Liquids Removed (Gals):	0
Liquids Treated (Gals):	0
Action Included Capping:	Not reported
Well Decommissioned:	Not reported
Action Included Fencing:	Not reported
Removal Action Certification:	Not reported
Activity Comments:	Not reported
For Commercial Reuse:	0
For Industrial Reuse:	0
For Residential Reuse:	0
Unknown Type:	0
Facility ID:	19290289
Activity:	CERT
Activity Name:	CERTIFICATION
AWP Code:	Not reported
Proposed Budget:	0
AWP Completion Date:	06302007
Revised Due Date:	Not reported
Comments Date:	Not reported
Est Person-Yrs to complete:	0
Estimated Size:	Not reported
Request to Delete Activity:	Not reported

BORTZ OIL COMPANY (Continued) **S100833375**

Activity Status:	AWP
Definition of Status:	ANNUAL WORKPLAN - ACTIVE SITE
Liquids Removed (Gals):	0
Liquids Treated (Gals):	0
Action Included Capping:	Not reported
Well Decommissioned:	Not reported
Action Included Fencing:	Not reported
Removal Action Certification:	Not reported
Activity Comments:	Not reported
For Commercial Reuse:	0
For Industrial Reuse:	0
For Residential Reuse:	0
Unknown Type:	0
Facility ID:	19290289
Activity:	RA
Activity Name:	REMOVAL ACTION
AWP Code:	SOIL
Proposed Budget:	0
AWP Completion Date:	Not reported
Revised Due Date:	Not reported
Comments Date:	08292002
Est Person-Yrs to complete:	0
Estimated Size:	Not reported
Request to Delete Activity:	Not reported
Activity Status:	AWP
Definition of Status:	ANNUAL WORKPLAN - ACTIVE SITE
Liquids Removed (Gals):	0
Liquids Treated (Gals):	18500
Action Included Capping:	Not reported
Well Decommissioned:	Not reported
Action Included Fencing:	X
Removal Action Certification:	N
Activity Comments:	THE SOIL CLEANUP GOALS SPECIFIED IN THE SOIL REMOVAL ACTION WORKPLANHAVE BEEN ATTAINED THROUGH THE IMPLEMENTATION OF THE SOIL VAPOR EXTRACTION SYSTEM. HOWEVER GROUNDWATER STILL NEEDS FURTHER INVESTIGATION.
For Commercial Reuse:	0
For Industrial Reuse:	0
For Residential Reuse:	0
Unknown Type:	0
Facility ID:	19290289
Activity:	CEQA
Activity Name:	CEQA INCLUDING NEGATIVE DECS
AWP Code:	NOE
Proposed Budget:	0
AWP Completion Date:	Not reported
Revised Due Date:	Not reported
Comments Date:	06302000
Est Person-Yrs to complete:	0
Estimated Size:	Not reported
Request to Delete Activity:	Not reported
Activity Status:	AWP
Definition of Status:	ANNUAL WORKPLAN - ACTIVE SITE
Liquids Removed (Gals):	0
Liquids Treated (Gals):	0
Action Included Capping:	Not reported
Well Decommissioned:	Not reported

BORTZ OIL COMPANY (Continued) **S100833375**

Action Included Fencing:	Not reported
Removal Action Certification:	Not reported
Activity Comments:	Not reported
For Commercial Reuse:	0
For Industrial Reuse:	0
For Residential Reuse:	0
Unknown Type:	0
Facility ID:	19290289
Activity:	RAW
Activity Name:	REMOVAL ACTION WORKPLAN
AWP Code:	SOIL
Proposed Budget:	0
AWP Completion Date:	Not reported
Revised Due Date:	Not reported
Comments Date:	06302000
Est Person-Yrs to complete:	0
Estimated Size:	Not reported
Request to Delete Activity:	Not reported
Activity Status:	AWP
Definition of Status:	ANNUAL WORKPLAN - ACTIVE SITE
Liquids Removed (Gals):	0
Liquids Treated (Gals):	0
Action Included Capping:	Not reported
Well Decommissioned:	Not reported
Action Included Fencing:	Not reported
Removal Action Certification:	Not reported
Activity Comments:	Not reported
For Commercial Reuse:	0
For Industrial Reuse:	0
For Residential Reuse:	0
Unknown Type:	0
Facility ID:	19290289
Activity:	DEED
Activity Name:	DEED RESTRICTIONS
AWP Code:	Not reported
Proposed Budget:	0
AWP Completion Date:	Not reported
Revised Due Date:	Not reported
Comments Date:	08192002
Est Person-Yrs to complete:	0
Estimated Size:	Not reported
Request to Delete Activity:	Not reported
Activity Status:	AWP
Definition of Status:	ANNUAL WORKPLAN - ACTIVE SITE
Liquids Removed (Gals):	0
Liquids Treated (Gals):	0
Action Included Capping:	Not reported
Well Decommissioned:	Not reported
Action Included Fencing:	Not reported
Removal Action Certification:	Not reported
Activity Comments:	Not reported
For Commercial Reuse:	0
For Industrial Reuse:	0
For Residential Reuse:	0
Unknown Type:	0
Facility ID:	19290289
Activity:	RAW

BORTZ OIL COMPANY (Continued) **S100833375**

Activity Name:	REMOVAL ACTION WORKPLAN
AWP Code:	GW
Proposed Budget:	0
AWP Completion Date:	12302005
Revised Due Date:	Not reported
Comments Date:	Not reported
Est Person-Yrs to complete:	0
Estimated Size:	Not reported
Request to Delete Activity:	Not reported
Activity Status:	AWP
Definition of Status:	ANNUAL WORKPLAN - ACTIVE SITE
Liquids Removed (Gals):	0
Liquids Treated (Gals):	0
Action Included Capping:	Not reported
Well Decommissioned:	Not reported
Action Included Fencing:	Not reported
Removal Action Certification:	Not reported
Activity Comments:	Not reported
For Commercial Reuse:	0
For Industrial Reuse:	0
For Residential Reuse:	0
Unknown Type:	0
Facility ID:	19290289
Activity:	PEA
Activity Name:	PRELIMINARY ENDANGERMENT ASSESSMENT
AWP Code:	PEAE
Proposed Budget:	0
AWP Completion Date:	07312005
Revised Due Date:	Not reported
Comments Date:	Not reported
Est Person-Yrs to complete:	0
Estimated Size:	Not reported
Request to Delete Activity:	Not reported
Activity Status:	AWP
Definition of Status:	ANNUAL WORKPLAN - ACTIVE SITE
Liquids Removed (Gals):	0
Liquids Treated (Gals):	0
Action Included Capping:	Not reported
Well Decommissioned:	Not reported
Action Included Fencing:	Not reported
Removal Action Certification:	Not reported
Activity Comments:	Not reported
For Commercial Reuse:	0
For Industrial Reuse:	0
For Residential Reuse:	0
Unknown Type:	0
Facility ID:	19290289
Activity:	RA
Activity Name:	REMOVAL ACTION
AWP Code:	GW
Proposed Budget:	0
AWP Completion Date:	12302006
Revised Due Date:	Not reported
Comments Date:	Not reported
Est Person-Yrs to complete:	0
Estimated Size:	Not reported
Request to Delete Activity:	Not reported

BORTZ OIL COMPANY (Continued) **S100833375**

Activity Status:	AWP
Definition of Status:	ANNUAL WORKPLAN - ACTIVE SITE
Liquids Removed (Gals):	0
Liquids Treated (Gals):	0
Action Included Capping:	Not reported
Well Decommissioned:	Not reported
Action Included Fencing:	Not reported
Removal Action Certification:	Not reported
Activity Comments:	Not reported
For Commercial Reuse:	0
For Industrial Reuse:	0
For Residential Reuse:	0
Unknown Type:	0
Alternate Address:	PO BOX 60368
Alternate City,St,Zip:	LOS ANGELES, CA 90012
Alternate Address:	1746 NORTH SPRING STREET
Alternate City,St,Zip:	LOS ANGELES, CA 90012
Background Info:	The Bortz Oil Company (BOC) was a petroleum products blending and packaging facility. The site produced various petroleum products (i.e. kerosene, paint, acetone, methyl ethyl ketone (MEK),lacquer thinners, and denatured alcohol). High levels of hydrocarbons and chlorinated solvents have been identified in the soil, while 1,1-dichloroethane (DCE), vinyl chloride, petroleum hydrocarbons, and benzene have been detected in the groundwater. On August 9, 1984, a fire broke out in one of the metal and concrete warehouse facilities on the North Spring Street property. Undetermined amounts of chemicals were consumed by the fire and spilled on the ground, which has since percolated into the soil. The Department's inspection in December 1985, and January 1986, revealed that there were numerous uncontrolled chemical spills, leaking valves and drums, and illegal disposal of chemicals at the site. Since the groundwater is not being used as a drinking water source, the potential impact of the contaminated groundwater is not an immediate concern. The groundwater investigation will be conducted after the Spring Street property is sold. Direct contact with the contaminated soil, inhalation, and dermal absorption are the potential routes of exposure. On April 14, 1987, the Department issued a Remedial Action Order (RAO) to BOC to develop and implement the Remedial Investigation/Feasibility Study (RI/FS), Remedial Action Plan (RAP) and remediation. On July 6, 1988, the RAO was modified to include additional property (1726 N. Naud Street) owned by (BOC). Although remedial activities have been slowed due to the death of the owner in March 1990 the Department approved the Focused Feasibility Study Report for the Naud Street property. The Probate Court has determined that BOC's assets will be used towards the remediation of the Naud Street Property. On October 23, 1992, the Dept. negotiated a Consent Order with the Executor of the BOC estate. In August 1996, DTSC completed a removal action on the North Spring Street property. Bortz removed above-ground tanks and structures and near surface piping.
Comments Date:	06302000

BORTZ OIL COMPANY (Continued) **S100833375**

Comments:	former Bortz Oil site. Bortz will implement a soil vapor
Comments Date:	06302000
Comments:	extraction technology to achieve the remedial goals set forth
Comments Date:	06302000
Comments:	in the RAW. DTSC has determined and filed a CEQA Notice of
Comments Date:	06302000
Comments:	Exemption for the Site.
Comments Date:	06302000
Comments:	The Removal Action Workplan (RAW) for the above site was approved
Comments Date:	06302000
Comments:	on June 30, 2000. As indicated in the RAW, Soil Vapor
Comments Date:	06302000
Comments:	Extraction will be implemented at the area designated as AOPC-2.
Comments Date:	06302000
Comments:	Not reported
Comments Date:	07071993
Comments:	The CEQA documents (negative declaration) for the Bortz Oil
Comments Date:	07071993
Comments:	Company are submitted to the State Clearinghouse. The only
Comments Date:	07071993
Comments:	comment received was from Caltrans who requested that
Comments Date:	07071993
Comments:	transportation be conducted on off-peak hours.
Comments Date:	07081993
Comments:	The Final RAP for the Bortz Oil Company is approved. The
Comments Date:	07081993
Comments:	alternative selected is to excavate and dispose of contamin-
Comments Date:	07081993
Comments:	ated soil. The Final RAP also contains the Remedial Design
Comments Date:	07081993
Comments:	Workplan which was approved concurrent with the adoption of
Comments Date:	07081993
Comments:	the Final RAP.
Comments Date:	07251991
Comments:	Petroleum products blending and packaging facility. During
Comments Date:	07251991
Comments:	production of petroleum products, various hazardous
Comments Date:	07251991
Comments:	substances were used, including mineral spirits & kerosene.
Comments Date:	07251991
Comments:	High levels of hydrocarbons and chlorinated solvents have
Comments Date:	07251991
Comments:	been identified in the soil while 1,1-dichloroethane (DCE),
Comments Date:	07251991
Comments:	vinyl chloride, petroleum hydrocarbons, and benzene have
Comments Date:	07251991
Comments:	been detected in the groundwater.
Comments Date:	08021996
Comments:	DTSC approves the Removal Action Workplan and Neg. Dec. for
Comments Date:	08021996
Comments:	Bortz Oil-Spring Street property. The Removal Action
Comments Date:	08021996
Comments:	involves removal of above-ground tanks and structures.
Comments Date:	08192002
Comments:	A deed restriction to restrict use of the property was recorded
Comments Date:	08192002
Comments:	on August 19, 2002. The deed restriction prohibits sensitive

BORTZ OIL COMPANY (Continued) **S100833375**

Comments Date:	08192002
Comments:	uses of the property including, but not limited to residential,
Comments Date:	08192002
Comments:	hospital, public or private school uses for persons under 21
Comments Date:	08192002
Comments:	years of age, and daycare uses for children.
Comments Date:	08192002
Comments:	Not reported
Comments Date:	08292002
Comments:	DTSC certified that the soil cleanup has been completed in
Comments Date:	08292002
Comments:	accordance with the provisions of the approval RAW. A deed
Comments Date:	08292002
Comments:	restriction has been recorded prior to DTSC's issuance of
Comments Date:	08292002
Comments:	certification. This certification is for the soil only.
Comments Date:	08292002
Comments:	Not reported
Comments Date:	10061999
Comments:	DTSC reviewes the Feasibility Studies (FS) report dated 10/6/99.
Comments Date:	10061999
Comments:	Due to the potential presence of MTBE, a revised Baseline Risk
Comments Date:	10061999
Comments:	Assessment is being considered. Estimated time of approval is
Comments Date:	10061999
Comments:	June 2000.
Comments Date:	10281993
Comments:	The Department of Toxic Substances Control completes
Comments Date:	10281993
Comments:	review of the Bortz Oil Company, Naud Street Property,
Comments Date:	10281993
Comments:	Final Site Closure Report. DTSC determined
Comments Date:	10281993
Comments:	that the removal activities are in accordance with the
Comments Date:	10281993
Comments:	provisions of the Remedial Action Plan.
Comments Date:	10301997
Comments:	Completion of RA. The RA included removal of above-ground tanks
Comments Date:	10301997
Comments:	and structures and rough grading.
Comments Date:	12082004
Comments:	DTSC signed an acceptance of Allowance of Creditors Claim with
Comments Date:	12082004
Comments:	the Bortz Estate in December 8th, 2004. The Estate settled past
Comments Date:	12082004
Comments:	costs.
Comments Date:	12211998
Comments:	Transition to Chapter 6.5. Amendment to the existing Consent
Comments Date:	12211998
Comments:	Order No. 86/87-039RA signed by the RP.
Comments Date:	01071998
Comments:	Bortz conducts a soil gas survey on the North Spring Street
Comments Date:	01071998
Comments:	property. Bortz also samples all the groundwater monitoring
Comments Date:	01071998
Comments:	wells.
Comments Date:	02102003

BORTZ OIL COMPANY (Continued) **S100833375**

Comments:	Semi-annual groundwater monitoring begins. ISOC groundwater
Comments Date:	02102003
Comments:	remediation pilot test begins.
Comments Date:	03012000
Comments:	DTSC reviews a draft Soil Removal Action Workplan
Comments Date:	03012000
Comments:	for the North Spring Street property was submitted to DTSC
Comments Date:	03012000
Comments:	for review and approval.
Comments Date:	04042002
Comments:	Soil Vapor extraction was operated from June 2000 to April 2001.
Comments Date:	04042002
Comments:	Soil Vapor confirmation sampling completed on 12/15/2001
Comments Date:	04042002
Comments:	indicate that cleanup goals for the Site have been met.
Comments Date:	04151998
Comments:	Sampling report submitted and accepted by DTSC.
Comments Date:	05131999
Comments:	DTSC reviews the Baseline Risk Assessment (BRA) report dated
Comments Date:	05131999
Comments:	May 13, 1999. DTSC concurres with the BRA with minor comments.
Comments Date:	06302000
Comments:	DTSC approves the Soil Removal Action Workplan (RAW) for the
ID Name:	BEP DATABASE PCODE
ID Value:	P32059
ID Name:	CALSTARS CODE
ID Value:	300017
Alternate Name:	BORTZ OIL COMPANY
Special Programs Code:	Not reported
Special Programs Name:	Not reported

CORTESE:

Region:	CORTESE
Envirostor Id:	19290289
Site/Facility Type:	STATE RESPONSE
Cleanup Status:	ACTIVE - LAND USE RESTRICTIONS
Status Date:	08/01/1996
Site Code:	300017
Latitude:	34.07
Longitude:	-118.22527
Owner:	Not reported
Enf Type:	Not reported
Swat R:	Not reported
Flag:	export
Order No:	Not reported
Waste Discharge System No:	Not reported
Effective Date:	Not reported
Region 2:	Not reported
WID Id:	Not reported
Solid Waste Id No:	Not reported
Waste Management Uit Name:	Not reported

DEED:

Area:	PROJECT WIDE
Sub Area:	Not reported
Site Type:	STATE RESPONSE

BORTZ OIL COMPANY (Continued) **S100833375**

Status: ACTIVE
Deed Date(s): 08/19/2002

AWP:

AWP Facility ID:	19290289
Region Code:	3
Region:	GLENDALE
SMBR Branch Code:	SA
SMBR Branch Unit:	SO CAL - GLENDALE
Site Name.:	Not reported
Current Status Date:	08011996
Current Status:	ANNUAL WORKPLAN - ACTIVE SITE
Lead Agency Code:	DTSC
Lead Agency:	DEPT OF TOXIC SUBSTANCES CONTROL
Facility Type:	responsible party
Awp Site Type:	RESPONSIBLE PARTY
NPL:	Not Listed
Tier Of AWP Site:	Not reported
Source Of Funding:	F
Responsible Staff Member:	LPARNASS
Supervisor Responsible:	Not reported
SIC Code:	29
Facility SIC:	MANU - PETROLEUM & COAL PRODUCTS
RWQCB Code:	Not reported
RWQCB Associated With Site:	Not reported
Site Access Controlled:	Not reported
Site Listed HWS List:	Not reported
Hazard Ranking Score:	Not reported
Date Site Hazard Ranked:	Not reported
Groundwater Contamination:	Confirmed
# Of Contamination Sources:	2
Lat/Long:	Not reported
Lat/Long (dms):	0 0 0 / 0 0 0
Lat/long Method:	Not reported
Description Of Entity:	Not reported
State Assembly Distt Code:	45
State Senate District:	22

RESPONSE:

Facility ID:	19290289
Site Type:	State Response
Site Type Detail:	State Response or NPL
Acres:	1.4
National Priorities List:	NO
Cleanup Oversight Agencies:	SMBRP
Lead Agency:	SMBRP
Lead Agency Description:	DTSC - Site Mitigation And Brownfield Reuse Program
Project Manager:	Stephanie Lewis
Supervisor:	Juli Propes
Division Branch:	Cleanup Chatsworth
Site Code:	300017
Site Mgmt. Req.:	DAY, ELD, HOS, SCH, RES
Assembly:	51
Senate:	24
Special Program Status:	Not reported
Status:	Active

BORTZ OIL COMPANY (Continued) **S100833375**

Status Date:	08/01/1996
Restricted Use:	YES
Funding:	Responsible Party
Latitude:	34.07
Longitude:	-118.2252
APN:	5409-002-029
Past Use:	DISTRIBUTOR - CHEMICAL, MANUFACTURING - CHEMICALS
Potential COC:	10003, 10009, 10067, 30003, 30016, 30022, 30026, 30027, 30028
Confirmed COC:	30003,30016
Potential Description:	OTH, SOIL
Alias Name:	5409-002-029
Alias Type:	APN
Alias Name:	110033619172
Alias Type:	EPA (FRS #)
Alias Name:	P32059
Alias Type:	PCode
Alias Name:	300017
Alias Type:	Project Code (Site Code)
Alias Name:	19290289
Alias Type:	Envirostor ID Number

Completed Info:

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Land Use Restriction
Completed Date:	08/19/2002
Comments:	A deed restriction to restrict use of the property was recorded on August 19, 2002. The deed restriction prohibits sensitive uses of the property including, but not limited to residential, hospital, public or private school uses for persons under 21 years of age, and daycare uses for children.

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Notice of Exemption
Completed Date:	06/30/2000
Comments:	DTSC approves the Soil Removal Action Workplan (RAW) for the former Bortz Oil site. Bortz will implement a soil vapor extraction technology to achieve the remedial goals set forth in the RAW. DTSC has determined and filed a CEQA Notice of Exemption for the Site. The Removal Action Workplan (RAW) for the above site was approved on June 30, 2000. As indicated in the RAW, Soil Vapor Extraction will be implemented at the area designated as AOPC-2.

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Initial Study/ Neg. Declaration
Completed Date:	08/02/1996
Comments:	DTSC approves the Removal Action Workplan and Neg. Dec. for Bortz Oil-Spring Street property. The Removal Action involves removal of above-ground tanks and structures.

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Initial Study/ Neg. Declaration
Completed Date:	07/07/1993
Comments:	Not reported

BORTZ OIL COMPANY (Continued) **S100833375**

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: CEQA - Initial Study/ Neg. Declaration
Completed Date: 07/07/1993
Comments: The CEQA documents (negative declaration) for the Bortz Oil Company are submitted to the State Clearinghouse. The only comment received was from Caltrans who requested that transportation be conducted on off-peak hours.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Consent Order
Completed Date: 10/23/1992
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Final Determination of Non-Compliance
Completed Date: 07/31/1990
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Unilateral Order (I/SE, RAO, CAO, EPA AO)
Completed Date: 07/06/1988
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Unilateral Order (I/SE, RAO, CAO, EPA AO)
Completed Date: 04/15/1987
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: * Cost Recovery Settlements/Decrees
Completed Date: 12/08/2004
Comments: DTSC signed an acceptance of Allowance of Creditors Claim with the Bortz Estate in December 8th, 2004. The Estate settled past costs.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Consent Order
Completed Date: 12/21/1998
Comments: Transition to Chapter 6.5. Amendment to the existing Consent Order No. 86/87-039RA signed by the RP.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Amendment - Order/Agreement
Completed Date: 08/18/2005
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Technical Workplan
Completed Date: 03/02/2006

BORTZ OIL COMPANY (Continued) **S100833375**

Comments:	workplan approved
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Workplan
Completed Date:	06/30/2000
Comments:	Not reported
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Completion Report
Completed Date:	08/29/2002
Comments:	DTSC certified that the soil cleanup has been completed in accordance with the provisions of the approval RAW. A deed restriction has been recorded prior to DTSC's issuance of certification. This certification is for the soil only.
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Completion Report
Completed Date:	10/31/1997
Comments:	Not reported
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Workplan
Completed Date:	08/02/1996
Comments:	Not reported
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Completion Report
Completed Date:	10/28/1993
Comments:	The Department of Toxic Substances Control completes review of the Bortz Oil Company, Naud Street Property, Final Site Closure Report. DTSC determined that the removal activities are in accordance with the provisions of the Remedial Action Plan.
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Plan
Completed Date:	07/08/1993
Comments:	Not reported
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Design/Implementation Workplan
Completed Date:	07/08/1993
Comments:	The Final RAP for the Bortz Oil Company is approved. The alternative selected is to excavate and dispose of contamin- ated soil. The Final RAP also contains the Remedial Design Workplan which was approved concurrent with the adoption of the Final RAP.
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Workplan
Completed Date:	01/26/1993

BORTZ OIL COMPANY (Continued) **S100833375**

Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Remedial Investigation Workplan
Completed Date: 11/17/2003
Comments: MTBE and VOC contaminated groundwater to be treated with iSOC technology

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Technical Workplan
Completed Date: 09/07/2005
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Remedial Investigation Report
Completed Date: 01/31/1990
Comments: approved

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Remedial Action Completion Report
Completed Date: 07/29/2010
Comments: Meeting scheduled for 9/16/2010 with RP and consultant to discuss the off-site contributions to the onsite contamination that exists.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Monitoring Report
Completed Date: 09/08/2011
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Other Report
Completed Date: 05/18/2011
Comments: Not reported

Future Area Name: PROJECT WIDE
Future Sub Area Name: Not reported
Future Document Type: Removal Action Workplan
Future Due Date: 2012
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported

ENVIROSTOR:
Site Type: State Response
Site Type Detailed: State Response or NPL
Acres: 1.4
NPL: NO
Regulatory Agencies: SMBRP
Lead Agency: SMBRP

BORTZ OIL COMPANY (Continued) **S100833375**

Program Manager: Stephanie Lewis
Supervisor: Juli Propes
Division Branch: Cleanup Chatsworth
Facility ID: 19290289
Site Code: 300017
Assembly: 51
Senate: 24
Special Program: Not reported
Status: Active
Status Date: 08/01/1996
Restricted Use: YES
Site Mgmt. Req.: DAY, ELD, HOS, SCH, RES
Funding: Responsible Party
Latitude: 34.07
Longitude: -118.2252
APN: 5409-002-029
Past Use: DISTRIBUTOR - CHEMICAL, MANUFACTURING - CHEMICALS
Potential COC: 10003, 10009, 10067, 30003, 30016, 30022, 30026, 30027, 30028
Confirmed COC: 30003,30016
Potential Description: OTH, SOIL
Alias Name: 5409-002-029
Alias Type: APN
Alias Name: 110033619172
Alias Type: EPA (FRS #)
Alias Name: P32059
Alias Type: PCode
Alias Name: 300017
Alias Type: Project Code (Site Code)
Alias Name: 19290289
Alias Type: Envirostor ID Number

Completed Info:
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Land Use Restriction
Completed Date: 08/19/2002
Comments: A deed restriction to restrict use of the property was recorded on August 19, 2002. The deed restriction prohibits sensitive uses of the property including, but not limited to residential, hospital, public or private school uses for persons under 21 years of age, and daycare uses for children.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: CEQA - Notice of Exemption
Completed Date: 06/30/2000
Comments: DTSC approves the Soil Removal Action Workplan (RAW) for the former Bortz Oil site. Bortz will implement a soil vapor extraction technology to achieve the remedial goals set forth in the RAW. DTSC has determined and filed a CEQA Notice of Exemption for the Site. The Removal Action Workplan (RAW) for the above site was approved on June 30, 2000. As indicated in the RAW, Soil Vapor Extraction will be implemented at the area designated as AOPC-2.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: CEQA - Initial Study/ Neg. Declaration
Completed Date: 08/02/1996

BORTZ OIL COMPANY (Continued) **S100833375**

Comments:	DTSC approves the Removal Action Workplan and Neg. Dec. for Bortz Oil-Spring Street property. The Removal Action involves removal of above-ground tanks and structures.
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Initial Study/ Neg. Declaration
Completed Date:	07/07/1993
Comments:	Not reported
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Initial Study/ Neg. Declaration
Completed Date:	07/07/1993
Comments:	The CEQA documents (negative declaration) for the Bortz Oil Company are submitted to the State Clearinghouse. The only comment received was from Caltrans who requested that transportation be conducted on off-peak hours.
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Consent Order
Completed Date:	10/23/1992
Comments:	Not reported
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Final Determination of Non-Compliance
Completed Date:	07/31/1990
Comments:	Not reported
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Unilateral Order (I/SE, RAO, CAO, EPA AO)
Completed Date:	07/06/1988
Comments:	Not reported
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Unilateral Order (I/SE, RAO, CAO, EPA AO)
Completed Date:	04/15/1987
Comments:	Not reported
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	* Cost Recovery Settlements/Decrees
Completed Date:	12/08/2004
Comments:	DTSC signed an acceptance of Allowance of Creditors Claim with the Bortz Estate in December 8th, 2004. The Estate settled past costs.
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Consent Order
Completed Date:	12/21/1998
Comments:	Transition to Chapter 6.5. Amendment to the existing Consent Order No. 86/87-039RA signed by the RP.

BORTZ OIL COMPANY (Continued) **S100833375**

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Amendment - Order/Agreement
Completed Date: 08/18/2005
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Technical Workplan
Completed Date: 03/02/2006
Comments: workplan approved

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Removal Action Workplan
Completed Date: 06/30/2000
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Removal Action Completion Report
Completed Date: 08/29/2002
Comments: DTSC certified that the soil cleanup has been completed in accordance with the provisions of the approval RAW. A deed restriction has been recorded prior to DTSC's issuance of certification. This certification is for the soil only.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Removal Action Completion Report
Completed Date: 10/31/1997
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Removal Action Workplan
Completed Date: 08/02/1996
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Remedial Action Completion Report
Completed Date: 10/28/1993
Comments: The Department of Toxic Substances Control completes review of the Bortz Oil Company, Naud Street Property, Final Site Closure Report. DTSC determined that the removal activities are in accordance with the provisions of the Remedial Action Plan.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Remedial Action Plan
Completed Date: 07/08/1993
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Design/Implementation Workplan

BORTZ OIL COMPANY (Continued) **S100833375**

Completed Date: 07/08/1993
Comments: The Final RAP for the Bortz Oil Company is approved. The alternative selected is to excavate and dispose of contamin- ated soil. The Final RAP also contains the Remedial Design Workplan which was approved concurrent with the adoption of the Final RAP.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Removal Action Workplan
Completed Date: 01/26/1993
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Remedial Investigation Workplan
Completed Date: 11/17/2003
Comments: MTBE and VOC contaminated groundwater to be treated with iSOC technology

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Technical Workplan
Completed Date: 09/07/2005
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Remedial Investigation Report
Completed Date: 01/31/1990
Comments: approved

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Remedial Action Completion Report
Completed Date: 07/29/2010
Comments: Meeting scheduled for 9/16/2010 with RP and consultant to discuss the off-site contributions to the onsite contamination that exists.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Monitoring Report
Completed Date: 09/08/2011
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Other Report
Completed Date: 05/18/2011
Comments: Not reported

Future Area Name: PROJECT WIDE
Future Sub Area Name: Not reported
Future Document Type: Removal Action Workplan
Future Due Date: 2012
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported

BORTZ OIL COMPANY (Continued) **S100833375**

Schedule Due Date: Not reported
Schedule Revised Date: Not reported

B7
WSW
< 1/8
0.050 mi.
265 ft.

BORTZ OIL CO., INC. **HIST CORTESE** **U001560497**
1746 N SPRING ST **HIST UST** **N/A**
LOS ANGELES, CA 90012

Site 5 of 5 in cluster B

Relative:
Higher

Actual:
310 ft.

CORTESE:
Region: CORTESE
Facility County Code: 19
Reg By: CALSI
Reg Id: 19290289

Region: CORTESE
Facility County Code: 19
Reg By: LTNKA
Reg Id: 000776

HIST UST:
Region: STATE
Facility ID: 00000065204
Facility Type: Other
Other Type: DISTRIBUTOR
Total Tanks: 0004
Contact Name: I.H. ROSNER
Telephone: 2132231067
Owner Name: BORTZ OIL CO, INC.
Owner Address: 1746 N. SPRING ST.
Owner City,St,Zip: LOS ANGELES, CA 90012

Tank Num: 001
Container Num: 1
Year Installed: Not reported
Tank Capacity: 00001000
Tank Used for: PRODUCT
Type of Fuel: UNLEADED
Tank Construction: Not reported
Leak Detection: Stock Inventor

Tank Num: 001
Container Num: 1
Year Installed: Not reported
Tank Capacity: 00002000
Tank Used for: PRODUCT
Type of Fuel: Not reported
Tank Construction: Not reported
Leak Detection: Stock Inventor

Tank Num: 002
Container Num: 2
Year Installed: Not reported
Tank Capacity: 00000000
Tank Used for: PRODUCT
Type of Fuel: UNLEADED
Tank Construction: Not reported

BORTZ OIL CO., INC. (Continued) **U001560497**

Leak Detection: None

Tank Num: 002
Container Num: 3
Year Installed: Not reported
Tank Capacity: 00004000
Tank Used for: PRODUCT
Type of Fuel: Not reported
Tank Construction: Not reported
Leak Detection: Stock Inventor

Tank Num: 003
Container Num: 4
Year Installed: Not reported
Tank Capacity: 00000000
Tank Used for: PRODUCT
Type of Fuel: REGULAR
Tank Construction: Not reported
Leak Detection: Stock Inventor

Tank Num: 003
Container Num: 3
Year Installed: Not reported
Tank Capacity: 00000000
Tank Used for: PRODUCT
Type of Fuel: UNLEADED
Tank Construction: Not reported
Leak Detection: None

Tank Num: 004
Container Num: 2
Year Installed: Not reported
Tank Capacity: 00006000
Tank Used for: PRODUCT
Type of Fuel: Not reported
Tank Construction: Not reported
Leak Detection: Stock Inventor

Tank Num: 004
Container Num: 4
Year Installed: Not reported
Tank Capacity: 00000000
Tank Used for: PRODUCT
Type of Fuel: UNLEADED
Tank Construction: Not reported
Leak Detection: None

C8 **SCHLEGEL HERBT** **EDR Historical Auto Stations** **1009079593**
SSW **1720 NAUD ST** **N/A**
< 1/8 **LOS ANGELES, CA**
0.102 mi.
536 ft. **Site 1 of 2 in cluster C**

Relative:
Lower

EDR Historical Auto Stations:
Name: SCHLEGEL HERBT
Year: 1924

Actual:
306 ft.

Type: AUTOMOBILE REPAIRING

C9 **CARING CHEMICAL COMPANY** **RCRA-NonGen** **1000257037**
SSW **1718 NORTH NAUD** **FINDS** **CAD981689045**
< 1/8 **LOS ANGELES, CA 90012**
0.106 mi.
558 ft. **Site 2 of 2 in cluster C**

Relative:
Lower

Actual:
306 ft.

RCRA-NonGen:

Date form received by agency:	11/06/1986
Facility name:	CARING CHEMICAL COMPANY
Facility address:	1718 NORTH NAUD LOS ANGELES, CA 90012
EPA ID:	CAD981689045
Mailing address:	PO BOX 9078 WHITTIER, CA 90608
Contact:	ENVIRONMENTAL MANAGER
Contact address:	1718 NORTH NAUD LOS ANGELES, CA 90012
Contact country:	US
Contact telephone:	(213) 223-2411
Contact email:	Not reported
EPA Region:	09
Classification:	Non-Generator
Description:	Handler: Non-Generators do not presently generate hazardous waste

Owner/Operator Summary:

Owner/operator name:	DALATI INCORPORATION
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Owner/operator name:	NOT REQUIRED
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	Yes
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No

CARING CHEMICAL COMPANY (Continued) **1000257037**

Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Violation Status: No violations found

FINDS:

Registry ID: 110002753547

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

10
NNW
< 1/8
0.106 mi.
559 ft.

LACMTA DIVISION 21 **RCRA-LQG** **1010313491**
1800 BAKER STREET **CAR000146720**
LOS ANGELES, CA 90012

Relative:
Higher

Actual:
314 ft.

RCRA-LQG:
Date form received by agency: 02/22/2006
Facility name: LACMTA DIVISION 21
Facility address: 1800 BAKER STREET
LOS ANGELES, CA 90012
EPA ID: CAR000146720
Contact: DAVID R DANIELS
Contact address: Not reported
Not reported
Contact country: Not reported
Contact telephone: (213) 922-5785
Contact email: DANIELSD@METRO.NET
EPA Region: 09
Classification: Large Quantity Generator
Description: Handler: generates 1,000 kg or more of hazardous waste during any calendar month; or generates more than 1 kg of acutely hazardous waste during any calendar month; or generates more than 100 kg of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste during any calendar month; or generates 1 kg or less of acutely hazardous waste during any calendar month, and accumulates more than 1 kg of acutely hazardous waste at any time; or generates 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste during any calendar month, and accumulates more than 100 kg of that material at any time

Owner/Operator Summary:
Owner/operator name: NA
Owner/operator address: ONE GATEWAY PLAZA
LOS ANGELES, CA 90012
Owner/operator country: US
Owner/operator telephone: Not reported

LACMTA DIVISION 21 (Continued) **1010313491**

Legal status:	District
Owner/Operator Type:	Owner
Owner/Op start date:	06/01/2000
Owner/Op end date:	Not reported
Owner/operator name:	JAMES POE
Owner/operator address:	Not reported
	Not reported
Owner/operator country:	US
Owner/operator telephone:	Not reported
Legal status:	District
Owner/Operator Type:	Operator
Owner/Op start date:	06/01/2001
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Hazardous Waste Summary:

Waste code:	D008
Waste name:	LEAD
Violation Status:	No violations found

11
NW
1/8-1/4
0.144 mi.
758 ft.

SERVICE STATION 4962
100 ELYSIAN PARK AVE
LOS ANGELES, CA 90012

HIST UST **1000166970**
N/A

Relative:
Higher

Actual:
349 ft.

HIST UST:

Region:	STATE
Facility ID:	00000017430
Facility Type:	Gas Station
Other Type:	Not reported
Total Tanks:	0004
Contact Name:	Not reported
Telephone:	2132229391
Owner Name:	UNION OIL COMPANY OF CALIFORNI
Owner Address:	3701 WILSHIRE BLVD SUITE 830
Owner City,St,Zip:	LOS ANGELES, CA 90010
Tank Num:	001
Container Num:	4962-4

SERVICE STATION 4962 (Continued) **1000166970**

Year Installed:	1962
Tank Capacity:	00000280
Tank Used for:	WASTE
Type of Fuel:	WASTE OIL
Tank Construction:	Not reported
Leak Detection:	Stock Inventor, Pressure Test

Tank Num:	002
Container Num:	4962-2B
Year Installed:	1962
Tank Capacity:	00005000
Tank Used for:	PRODUCT
Type of Fuel:	PREMIUM
Tank Construction:	Not reported
Leak Detection:	Stock Inventor, Pressure Test

Tank Num:	003
Container Num:	4962-2A
Year Installed:	1962
Tank Capacity:	00010000
Tank Used for:	PRODUCT
Type of Fuel:	PREMIUM
Tank Construction:	Not reported
Leak Detection:	Stock Inventor, Pressure Test

Tank Num:	004
Container Num:	4962-1
Year Installed:	1962
Tank Capacity:	00010000
Tank Used for:	PRODUCT
Type of Fuel:	UNLEADED
Tank Construction:	Not reported
Leak Detection:	Stock Inventor, Pressure Test

12
WSW
1/8-1/4
0.144 mi.
761 ft.

KIM PHUOC JEWELRY INC
1646 N SPRING ST
LOS ANGELES, CA 90012

RCRA-SQG **1000905347**
FINDS **CA0000550335**
HAZNET

Relative:
Higher

Actual:
309 ft.

RCRA-SQG:

Date form received by agency:	09/01/1996
Facility name:	KIM PHUOC JEWELRY INC
Facility address:	1646 N SPRING ST LOS ANGELES, CA 90012
EPA ID:	CA0000550335
Mailing address:	N SPRING ST LOS ANGELES, CA 90012
Contact:	Not reported
Contact address:	Not reported Not reported
Contact country:	Not reported
Contact telephone:	Not reported
Contact email:	Not reported
EPA Region:	09
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of

KIM PHUOC JEWELRY INC (Continued) **1000905347**

hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name:	MR HOANG VAN JAM
Owner/operator address:	1646 N SPRING ST LOS ANGELES, CA 90012
Owner/operator country:	Not reported
Owner/operator telephone:	(213) 680-8888
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Violation Status: No violations found

FINDS:

Registry ID: 110002618864

Environmental Interest/Information System

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

HAZNET:

Year:	1997
Gepaid:	CA0000550335
Contact:	MR HOANG VAN LAM
Telephone:	2132761970
Mailing Name:	Not reported
Mailing Address:	130 W ELMYRA ST
Mailing City,St,Zip:	LOS ANGELES, CA 900121819
Gen County:	Los Angeles

KIM PHUOC JEWELRY INC (Continued) **1000905347**

TSD EPA ID: CAT000612150
TSD County: Orange
Waste Category: Liquids with cyanides >= 1,000 Mg./L
Disposal Method: Not reported
Tons: .4587
Facility County: Los Angeles

Year: 1997
Gepaid: CA0000550335
Contact: MR HOANG VAN LAM
Telephone: 2132761970
Mailing Name: Not reported
Mailing Address: 130 W ELMYRA ST
Mailing City,St,Zip: LOS ANGELES, CA 900121819
Gen County: Los Angeles
TSD EPA ID: CAT000612150
TSD County: Orange
Waste Category: Liquids with cyanides >= 1,000 Mg./L
Disposal Method: R01
Tons: 3.3984
Facility County: Los Angeles

Year: 1996
Gepaid: CA0000550335
Contact: MR HOANG VAN LAM
Telephone: 2132761970
Mailing Name: Not reported
Mailing Address: 130 W ELMYRA ST
Mailing City,St,Zip: LOS ANGELES, CA 900121819
Gen County: Los Angeles
TSD EPA ID: CAT000612150
TSD County: Orange
Waste Category: Liquids with cyanides >= 1,000 Mg./L
Disposal Method: R01
Tons: 3.6696
Facility County: Los Angeles

Year: 1995
Gepaid: CA0000550335
Contact: MR HOANG VAN LAM
Telephone: 2132761970
Mailing Name: Not reported
Mailing Address: 130 W ELMYRA ST
Mailing City,St,Zip: LOS ANGELES, CA 900121819
Gen County: Los Angeles
TSD EPA ID: Not reported
TSD County: 0
Waste Category: Not reported
Disposal Method: R01
Tons: .4587
Facility County: Los Angeles

Year: 1995
Gepaid: CA0000550335
Contact: MR HOANG VAN LAM
Telephone: 2132761970
Mailing Name: Not reported

KIM PHUOC JEWELRY INC (Continued) **1000905347**

Mailing Address: 130 W ELMYRA ST
Mailing City,St,Zip: LOS ANGELES, CA 900121819
Gen County: Los Angeles
TSD EPA ID: CAT000612150
TSD County: Orange
Waste Category: Liquids with cyanides >= 1,000 Mg./L
Disposal Method: R01
Tons: 4.0865
Facility County: Los Angeles

Click this hyperlink while viewing on your computer to access
1 additional CA_HAZNET: record(s) in the EDR Site Report.

D13 **DEPT. OF GEN SERVICE OF STATE** **CA FID UST** **S101583944**
NNE **1525 S BROADWAY** **N/A**
1/8-1/4 **LOS ANGELES, CA 90012**
0.149 mi.
787 ft. **Site 1 of 4 in cluster D**

Relative: **Higher**

Actual: **314 ft.**

CA FID UST:
Facility ID: 19007485
Regulated By: UTNKA
Regulated ID: Not reported
Cortese Code: Not reported
SIC Code: Not reported
Facility Phone: 2137442491
Mail To: Not reported
Mailing Address: 1525 S BROADWAY
Mailing Address 2: Not reported
Mailing City,St,Zip: LOS ANGELES 900120000
Contact: Not reported
Contact Phone: Not reported
DUNs Number: Not reported
NPDES Number: Not reported
EPA ID: Not reported
Comments: Not reported
Status: Active

D14 **BUENA VISTA CHORINATION STATIO/DEPARTMENT OF WATER AND POWER** **SWEEPS UST** **S106923635**
NE **1561 N BROADWAY** **N/A**
1/8-1/4 **LOS ANGELES, CA 90031**
0.157 mi.
830 ft. **Site 2 of 4 in cluster D**

Relative: **Higher**

Actual: **323 ft.**

SWEEPS UST:
Status: Not reported
Comp Number: 9020
Number: Not reported
Board Of Equalization: Not reported
Ref Date: Not reported
Act Date: Not reported
Created Date: Not reported
Tank Status: Not reported
Owner Tank Id: Not reported
Swrcb Tank Id: Not reported
Actv Date: Not reported

BUENA VISTA CHORINATION STATIO/DEPARTMENT OF WATER AND POWER (Continued) **S106923635**

Capacity: Not reported
Tank Use: Not reported
Stg: Not reported
Content: Not reported
Number Of Tanks: 0

D15 **CITY FORD COMPANY, INC** **HIST UST** **U001561269**
NE **1600 PASADENA AVE** **N/A**
1/8-1/4 **LOS ANGELES, CA 90031**
0.159 mi.
839 ft. **Site 3 of 4 in cluster D**

Relative:
Higher

Actual:
323 ft.

HIST UST:
Region: STATE
Facility ID: 00000041662
Facility Type: Other
Other Type: CAR SALES
Total Tanks: 0010
Contact Name: CHARLES COOK
Telephone: 2132215151
Owner Name: CITY FORD COMPANY, INC
Owner Address: 1600 PASADENA AVE
Owner City,St,Zip: LOS ANGELES, CA 90031

Tank Num: 001
Container Num: IG
Year Installed: Not reported
Tank Capacity: 00002000
Tank Used for: PRODUCT
Type of Fuel: UNLEADED
Tank Construction: Not reported
Leak Detection: Stock Inventor

Tank Num: 002
Container Num: 2E
Year Installed: Not reported
Tank Capacity: 00002000
Tank Used for: PRODUCT
Type of Fuel: UNLEADED
Tank Construction: Not reported
Leak Detection: Stock Inventor

Tank Num: 003
Container Num: 3E
Year Installed: Not reported
Tank Capacity: 00005000
Tank Used for: PRODUCT
Type of Fuel: UNLEADED
Tank Construction: Not reported
Leak Detection: Stock Inventor

Tank Num: 004
Container Num: I
Year Installed: Not reported
Tank Capacity: 00000250
Tank Used for: WASTE
Type of Fuel: WASTE OIL
Tank Construction: Not reported

CITY FORD COMPANY, INC (Continued) **U001561269**

Leak Detection: None

Tank Num: 005
Container Num: 55
Year Installed: Not reported
Tank Capacity: 00000000
Tank Used for: WASTE
Type of Fuel: Not reported
Tank Construction: Not reported
Leak Detection: Not reported

Tank Num: 006
Container Num: 35
Year Installed: Not reported
Tank Capacity: 00000000
Tank Used for: WASTE
Type of Fuel: Not reported
Tank Construction: Not reported
Leak Detection: Not reported

Tank Num: 007
Container Num: 45
Year Installed: Not reported
Tank Capacity: 00000000
Tank Used for: WASTE
Type of Fuel: Not reported
Tank Construction: Not reported
Leak Detection: Not reported

Tank Num: 008
Container Num: 25
Year Installed: Not reported
Tank Capacity: 00000000
Tank Used for: WASTE
Type of Fuel: Not reported
Tank Construction: Not reported
Leak Detection: Not reported

Tank Num: 009
Container Num: IS
Year Installed: Not reported
Tank Capacity: 00000000
Tank Used for: WASTE
Type of Fuel: Not reported
Tank Construction: Not reported
Leak Detection: Not reported

Tank Num: 010
Container Num: 10
Year Installed: 1983
Tank Capacity: 00000750
Tank Used for: WASTE
Type of Fuel: WASTE OIL
Tank Construction: Not reported
Leak Detection: None

D16
NE
1/8-1/4
0.159 mi.
839 ft.

CITY FORD COMPANY, INCORPORATE
1600 PASADENA AVE
LOS ANGELES, CA 90031

Site 4 of 4 in cluster D

CA FID UST **S101617329**
SWEEPS UST **N/A**

Relative:
Higher

Actual:
323 ft.

CA FID UST:

Facility ID:	19054252
Regulated By:	UTNKI
Regulated ID:	00041662
Cortese Code:	Not reported
SIC Code:	Not reported
Facility Phone:	2132215151
Mail To:	Not reported
Mailing Address:	1600 PASADENA AVE
Mailing Address 2:	Not reported
Mailing City,St,Zip:	LOS ANGELES 900310000
Contact:	Not reported
Contact Phone:	Not reported
DUNs Number:	Not reported
NPDES Number:	Not reported
EPA ID:	Not reported
Comments:	Not reported
Status:	Inactive

SWEEPS UST:

Status:	Not reported
Comp Number:	2327
Number:	Not reported
Board Of Equalization:	Not reported
Ref Date:	Not reported
Act Date:	Not reported
Created Date:	Not reported
Tank Status:	Not reported
Owner Tank Id:	Not reported
Swrcb Tank Id:	19-050-002327-000001
Actv Date:	Not reported
Capacity:	2000
Tank Use:	M.V. FUEL
Stg:	PRODUCT
Content:	REG UNLEADED
Number Of Tanks:	10

Status:	Not reported
Comp Number:	2327
Number:	Not reported
Board Of Equalization:	Not reported
Ref Date:	Not reported
Act Date:	Not reported
Created Date:	Not reported
Tank Status:	Not reported
Owner Tank Id:	Not reported
Swrcb Tank Id:	19-050-002327-000002
Actv Date:	Not reported
Capacity:	2000
Tank Use:	M.V. FUEL
Stg:	PRODUCT
Content:	REG UNLEADED
Number Of Tanks:	Not reported

CITY FORD COMPANY, INCORPORATE (Continued) **S101617329**

Status:	Not reported
Comp Number:	2327
Number:	Not reported
Board Of Equalization:	Not reported
Ref Date:	Not reported
Act Date:	Not reported
Created Date:	Not reported
Tank Status:	Not reported
Owner Tank Id:	Not reported
Swrcb Tank Id:	19-050-002327-000003
Actv Date:	Not reported
Capacity:	5000
Tank Use:	M.V. FUEL
Stg:	PRODUCT
Content:	REG UNLEADED
Number Of Tanks:	Not reported

Status:	Not reported
Comp Number:	2327
Number:	Not reported
Board Of Equalization:	Not reported
Ref Date:	Not reported
Act Date:	Not reported
Created Date:	Not reported
Tank Status:	Not reported
Owner Tank Id:	Not reported
Swrcb Tank Id:	19-050-002327-000004
Actv Date:	Not reported
Capacity:	250
Tank Use:	OIL
Stg:	WASTE
Content:	WASTE OIL
Number Of Tanks:	Not reported

Status:	Not reported
Comp Number:	2327
Number:	Not reported
Board Of Equalization:	Not reported
Ref Date:	Not reported
Act Date:	Not reported
Created Date:	Not reported
Tank Status:	Not reported
Owner Tank Id:	Not reported
Swrcb Tank Id:	19-050-002327-000005
Actv Date:	Not reported
Capacity:	1
Tank Use:	CHEMICAL
Stg:	PRODUCT
Content:	UNKNOWN
Number Of Tanks:	Not reported

Status:	Not reported
Comp Number:	2327
Number:	Not reported
Board Of Equalization:	Not reported
Ref Date:	Not reported
Act Date:	Not reported

CITY FORD COMPANY, INCORPORATE (Continued) **S101617329**

Created Date:	Not reported
Tank Status:	Not reported
Owner Tank Id:	Not reported
Swrcb Tank Id:	19-050-002327-000006
Actv Date:	Not reported
Capacity:	1
Tank Use:	CHEMICAL
Stg:	PRODUCT
Content:	UNKNOWN
Number Of Tanks:	Not reported

Status:	Not reported
Comp Number:	2327
Number:	Not reported
Board Of Equalization:	Not reported
Ref Date:	Not reported
Act Date:	Not reported
Created Date:	Not reported
Tank Status:	Not reported
Owner Tank Id:	Not reported
Swrcb Tank Id:	19-050-002327-000007
Actv Date:	Not reported
Capacity:	1
Tank Use:	CHEMICAL
Stg:	PRODUCT
Content:	UNKNOWN
Number Of Tanks:	Not reported

Status:	Not reported
Comp Number:	2327
Number:	Not reported
Board Of Equalization:	Not reported
Ref Date:	Not reported
Act Date:	Not reported
Created Date:	Not reported
Tank Status:	Not reported
Owner Tank Id:	Not reported
Swrcb Tank Id:	19-050-002327-000008
Actv Date:	Not reported
Capacity:	1
Tank Use:	CHEMICAL
Stg:	PRODUCT
Content:	UNKNOWN
Number Of Tanks:	Not reported

Status:	Not reported
Comp Number:	2327
Number:	Not reported
Board Of Equalization:	Not reported
Ref Date:	Not reported
Act Date:	Not reported
Created Date:	Not reported
Tank Status:	Not reported
Owner Tank Id:	Not reported
Swrcb Tank Id:	19-050-002327-000009
Actv Date:	Not reported
Capacity:	1

CITY FORD COMPANY, INCORPORATE (Continued) **S101617329**

Tank Use:	CHEMICAL
Stg:	PRODUCT
Content:	UNKNOWN
Number Of Tanks:	Not reported
Status:	Not reported
Comp Number:	2327
Number:	Not reported
Board Of Equalization:	Not reported
Ref Date:	Not reported
Act Date:	Not reported
Created Date:	Not reported
Tank Status:	Not reported
Owner Tank Id:	Not reported
Swrcb Tank Id:	19-050-002327-000010
Actv Date:	Not reported
Capacity:	750
Tank Use:	OIL
Stg:	WASTE
Content:	WASTE OIL
Number Of Tanks:	Not reported

E17 **ALAN WONG-ALCO** **CA FID UST** **S101587544**
South **119 WILHARDT ST** **SWEEPS UST** **N/A**
1/8-1/4 **LOS ANGELES, CA 90012**
0.163 mi.
859 ft. **Site 1 of 2 in cluster E**

Relative:
Lower

Actual:
302 ft.

CA FID UST:

Facility ID:	19055743
Regulated By:	UTNKA
Regulated ID:	Not reported
Cortese Code:	Not reported
SIC Code:	Not reported
Facility Phone:	2132226001
Mail To:	Not reported
Mailing Address:	119 WILHARDT ST
Mailing Address 2:	Not reported
Mailing City,St,Zip:	LOS ANGELES 900120000
Contact:	Not reported
Contact Phone:	Not reported
DUNs Number:	Not reported
NPDES Number:	Not reported
EPA ID:	Not reported
Comments:	Not reported
Status:	Active

SWEEPS UST:

Status:	A
Comp Number:	4288
Number:	2
Board Of Equalization:	Not reported
Ref Date:	07-06-93
Act Date:	04-26-94
Created Date:	02-29-88
Tank Status:	Not reported
Owner Tank Id:	Not reported

ALAN WONG-ALCO (Continued) **S101587544**

Swrcb Tank Id: Not reported
Actv Date: Not reported
Capacity: Not reported
Tank Use: Not reported
Stg: Not reported
Content: Not reported
Number Of Tanks: Not reported

E18 **DANNY K. WONG** **UST** **U003781747**
South **117 WILHARDT ST** **N/A**
1/8-1/4 **LOS ANGELES, CA 90012**
0.164 mi.
865 ft. **Site 2 of 2 in cluster E**

Relative:
Lower

Actual:
302 ft.

UST:
Facility ID: 25529
Latitude: 34.06786
Longitude: -118.22602

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19 **YOUNG-NAK PRESS CHURCH** **CA FID UST** **S101588292**
NE **1721 N BROADWAY** **SWEEPS UST** **N/A**
1/8-1/4 **LOS ANGELES, CA 90031**
0.171 mi.
904 ft.

Relative:
Higher

Actual:
324 ft.

CA FID UST:
Facility ID: 19056537
Regulated By: UTNKA
Regulated ID: Not reported
Cortese Code: Not reported
SIC Code: Not reported
Facility Phone: 2130000000
Mail To: Not reported
Mailing Address: UNK
Mailing Address 2: Not reported
Mailing City,St,Zip: LOS ANGELES 900310000
Contact: Not reported
Contact Phone: Not reported
DUNs Number: Not reported
NPDES Number: Not reported
EPA ID: Not reported
Comments: Not reported
Status: Active

SWEEPS UST:
Status: A
Comp Number: 7901
Number: 9
Board Of Equalization: Not reported
Ref Date: 05-05-93
Act Date: 05-05-93
Created Date: 02-29-88
Tank Status: Not reported
Owner Tank Id: Not reported
Swrcb Tank Id: Not reported
Actv Date: Not reported

YOUNG-NAK PRESS CHURCH (Continued) **S101588292**

Capacity: Not reported
Tank Use: Not reported
Stg: Not reported
Content: Not reported
Number Of Tanks: Not reported

F20 **DIXON BOILER WORKS, INC.** **HIST UST** **U001560508**
SW **1625 NAUD ST** **N/A**
1/8-1/4 **LOS ANGELES, CA 90012**
0.193 mi.
1018 ft. **Site 1 of 2 in cluster F**

Relative:
Lower

Actual:
306 ft.

HIST UST:
Region: STATE
Facility ID: 00000017477
Facility Type: Other
Other Type: FOR CO. CARS & TRUCK
Total Tanks: 0001
Contact Name: LARRY PARKER
Telephone: 2132229131
Owner Name: DIXON BOILER WORKS, INC.
Owner Address: 1625 NAUD STREET
Owner City,St,Zip: LOS ANGELES, CA 90012

Tank Num: 001
Container Num: 1
Year Installed: 1948
Tank Capacity: 00001000
Tank Used for: PRODUCT
Type of Fuel: 06
Tank Construction: Not reported
Leak Detection: Stock Inventor

F21 **DIXON BOILER WORKS, INC** **CA FID UST** **S101617138**
SW **1625 NAUD ST** **SWEEPS UST** **N/A**
1/8-1/4 **LOS ANGELES, CA 90012**
0.193 mi.
1018 ft. **Site 2 of 2 in cluster F**

Relative:
Lower

Actual:
306 ft.

CA FID UST:
Facility ID: 19054212
Regulated By: UTNKI
Regulated ID: 00017477
Cortese Code: Not reported
SIC Code: Not reported
Facility Phone: 2132229131
Mail To: Not reported
Mailing Address: 1625 NAUD ST
Mailing Address 2: Not reported
Mailing City,St,Zip: LOS ANGELES 900120000
Contact: Not reported
Contact Phone: Not reported
DUNs Number: Not reported
NPDES Number: Not reported
EPA ID: Not reported
Comments: Not reported

DIXON BOILER WORKS, INC (Continued) **S101617138**

Status: Inactive

SWEEPS UST:
Status: Not reported
Comp Number: 1236
Number: Not reported
Board Of Equalization: 44-011668
Ref Date: Not reported
Act Date: Not reported
Created Date: Not reported
Tank Status: Not reported
Owner Tank Id: Not reported
Swrcb Tank Id: 19-050-001236-000001
Actv Date: Not reported
Capacity: 1000
Tank Use: CHEMICAL
Stg: PRODUCT
Content: UNKNOWN
Number Of Tanks: 1

G22 **ALBION DAIRY (FORMER)** **NPDES** **S105024565**
SE **1739 ALBION ST** **HIST CORTESE** **N/A**
1/8-1/4 **LOS ANGELES, CA 90031** **LUST**
0.194 mi.
1026 ft. **Site 1 of 5 in cluster G**

Relative:
Lower

Actual:
305 ft.

NPDES:
Npdes Number: CAS000002
Facility Status: Active
Agency Id: 0
Region: 4
Regulatory Measure Id: 413138
Order No: 2009-0009-DWQ
Regulatory Measure Type: Enrollee
Place Id: Not reported
WDID: 4 19C360662
Program Type: Construction
Adoption Date Of Regulatory Measure: Not reported
Effective Date Of Regulatory Measure: 03/25/2011
Expiration Date Of Regulatory Measure: Not reported
Termination Date Of Regulatory Measure: Not reported
Discharge Name: City of Los Angeles Public Works Bureau of Engineering
Discharge Address: 1149 S Broadway
Discharge City: Los Angeles
Discharge State: California
Discharge Zip: 90015

CORTESE:
Region: CORTESE
Facility County Code: 19
Reg By: LTNKA
Reg Id: 900310052

LUST:
Region: STATE
Global Id: T10000003600

ALBION DAIRY (FORMER) (Continued) **S105024565**

Latitude:	34.0686404992953
Longitude:	-118.222374916077
Case Type:	LUST Cleanup Site
Status:	Open - Remediation
Status Date:	02/23/2012
Lead Agency:	LOS ANGELES RWQCB (REGION 4)
Case Worker:	YL
Local Agency:	LOS ANGELES, CITY OF
RB Case Number:	900310052A
LOC Case Number:	Not reported
File Location:	Not reported
Potential Media Affect:	Other Groundwater (uses other than drinking water)
Potential Contaminants of Concern:	Diesel
Site History:	Not reported

Click here to access the California GeoTracker records for this facility:

LUST:

Global Id:	T10000003600
Contact Type:	Local Agency Caseworker
Contact Name:	ELOY LUNA
Organization Name:	LOS ANGELES, CITY OF
Address:	200 North Main Street, Suite 1780
City:	LOS ANGELES
Email:	eloy.luna@lacity.org
Phone Number:	Not reported

Global Id:	T10000003600
Contact Type:	Regional Board Caseworker
Contact Name:	ARMAN TOUMARI
Organization Name:	LOS ANGELES RWQCB (REGION 4)
Address:	320 WEST 4TH STREET, SUITE 200
City:	LOS ANGELES
Email:	atoumari@waterboards.ca.gov
Phone Number:	2135766708

LUST:

Global Id:	T10000003600
Action Type:	Other
Date:	01/01/1950
Action:	Leak Reported

Global Id:	T10000003600
Action Type:	ENFORCEMENT
Date:	02/23/2012
Action:	Referral to Regional Board

Global Id:	T10000003600
Action Type:	Other
Date:	01/01/1950
Action:	Leak Discovery

Global Id:	T10000003600
Action Type:	Other
Date:	01/01/1950
Action:	Leak Stopped

ALBION DAIRY (FORMER) (Continued) **S105024565**

Global Id: T10000003600
Action Type: RESPONSE
Date: 04/09/2012
Action: Other Report / Document

Global Id: T10000003600
Action Type: ENFORCEMENT
Date: 03/09/2012
Action: Staff Letter

Region: STATE
Global Id: T10000003567
Latitude: 34.069801
Longitude: -118.223724
Case Type: LUST Cleanup Site
Status: Open - Verification Monitoring
Status Date: 02/21/2012
Lead Agency: LOS ANGELES, CITY OF
Case Worker: EL
Local Agency: LOS ANGELES, CITY OF
RB Case Number: Not reported
LOC Case Number: 28291
File Location: Not reported
Potential Media Affect: Not reported
Potential Contaminants of Concern: Not reported
Site History: Not reported

Click here to access the California GeoTracker records for this facility:

LUST:
Global Id: T10000003567
Contact Type: Local Agency Caseworker
Contact Name: ELOY LUNA
Organization Name: LOS ANGELES, CITY OF
Address: 200 North Main Street, Suite 1780
City: LOS ANGELES
Email: eloy.luna@lacity.org
Phone Number: Not reported

LUST:
Global Id: T10000003567
Action Type: Other
Date: 01/01/1950
Action: Leak Reported

Global Id: T10000003567
Action Type: Other
Date: 01/01/1950
Action: Leak Discovery

Region: STATE
Global Id: T0603700787
Latitude: 34.0684091
Longitude: -118.2231245
Case Type: LUST Cleanup Site

ALBION DAIRY (FORMER) (Continued) **S105024565**

Status:	Completed - Case Closed
Status Date:	11/20/1996
Lead Agency:	LOS ANGELES RWQCB (REGION 4)
Case Worker:	YR
Local Agency:	LOS ANGELES, CITY OF
RB Case Number:	900310052
LOC Case Number:	Not reported
File Location:	Not reported
Potential Media Affect:	Soil
Potential Contaminants of Concern:	Diesel
Site History:	Not reported

Click here to access the California GeoTracker records for this facility:

LUST:

Global Id:	T0603700787
Contact Type:	Regional Board Caseworker
Contact Name:	YUE RONG
Organization Name:	LOS ANGELES RWQCB (REGION 4)
Address:	320 W. 4TH ST., SUITE 200
City:	Los Angeles
Email:	yrong@waterboards.ca.gov
Phone Number:	Not reported

Global Id:	T0603700787
Contact Type:	Local Agency Caseworker
Contact Name:	ELOY LUNA
Organization Name:	LOS ANGELES, CITY OF
Address:	200 North Main Street, Suite 1780
City:	LOS ANGELES
Email:	eloy.luna@lacity.org
Phone Number:	Not reported

LUST:

Global Id:	T0603700787
Action Type:	Other
Date:	01/01/1950
Action:	Leak Reported

G23 **ROSS SWISS DAIRIES, INCORPORATED** **UST** **U003780214**
SE **1739 ALBION ST** **N/A**
1/8-1/4 **LOS ANGELES, CA 90031**
0.194 mi.
1026 ft. **Site 2 of 5 in cluster G**

Relative:
Lower

Actual:
305 ft.

UST:

Facility ID:	23725
Latitude:	34.06837
Longitude:	-118.22313

G24 **FOREMOST DAIRIES INC.** **HIST UST** **U001561276**
SE **1739 ALBION ST** **N/A**
1/8-1/4 **LOS ANGELES, CA 90031**
0.194 mi.
1026 ft. **Site 3 of 5 in cluster G**

Relative:
Lower

Actual:
305 ft.

HIST UST:

Region:	STATE
Facility ID:	00000006461
Facility Type:	Other
Other Type:	PRIVATE FLEET
Total Tanks:	0004
Contact Name:	SAM LORINO
Telephone:	2137281191
Owner Name:	FOREMOST DAIRIES INC.
Owner Address:	1739 ALBION STREET
Owner City,St,Zip:	LOS ANGELES, CA 90031

Tank Num:	001
Container Num:	#4 DIESEL
Year Installed:	Not reported
Tank Capacity:	00012000
Tank Used for:	PRODUCT
Type of Fuel:	DIESEL
Tank Construction:	Not reported
Leak Detection:	Visual

Tank Num:	002
Container Num:	#3 REGULAR
Year Installed:	Not reported
Tank Capacity:	00005000
Tank Used for:	PRODUCT
Type of Fuel:	REGULAR
Tank Construction:	Not reported
Leak Detection:	Visual

Tank Num:	003
Container Num:	#2 REGULAR
Year Installed:	Not reported
Tank Capacity:	00005000
Tank Used for:	PRODUCT
Type of Fuel:	REGULAR
Tank Construction:	Not reported
Leak Detection:	Visual

Tank Num:	004
Container Num:	#1 DIESEL
Year Installed:	Not reported
Tank Capacity:	00010000
Tank Used for:	PRODUCT
Type of Fuel:	DIESEL
Tank Construction:	Not reported
Leak Detection:	Visual

G25 **F AND L ENT INC** **RCRA-LQG** **1000886176**
SE **1739 N ALBION ST** **FINDS** **CA0000127308**
1/8-1/4 **LOS ANGELES, CA 90031** **HAZNET**
0.194 mi.
1026 ft. **Site 4 of 5 in cluster G**

Relative:
Lower

Actual:
305 ft.

RCRA-LQG:

Date form received by agency:	07/18/2011
Facility name:	ALBION DAIRY DEMOLITION AND REMEDIATION PROJ
Facility address:	1739 N ALBION ST LOS ANGELES, CA 90031
EPA ID:	CA0000127308
Mailing address:	1149 S BROADWAY 6TH FL LOS ANGELES, CA 90015
Contact:	IFTEKHAR AHMED
Contact address:	1149 S BROADWAY 6TH FL LOS ANGELES, CA 90015
Contact country:	US
Contact telephone:	213-485-5875
Contact email:	IFTEKHAR.AHMED@LACITY.ORG
EPA Region:	09
Classification:	Large Quantity Generator
Description:	Handler: generates 1,000 kg or more of hazardous waste during any calendar month; or generates more than 1 kg of acutely hazardous waste during any calendar month; or generates more than 100 kg of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste during any calendar month; or generates 1 kg or less of acutely hazardous waste during any calendar month, and accumulates more than 1 kg of acutely hazardous waste at any time; or generates 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste during any calendar month, and accumulates more than 100 kg of that material at any time

Owner/Operator Summary:

Owner/operator name:	CITY OF LA DEPT OF GENERAL SVCS
Owner/operator address:	111 E FIRST ST RM 201 LOS ANGELES, CA 90012
Owner/operator country:	US
Owner/operator telephone:	Not reported
Legal status:	Municipal
Owner/Operator Type:	Owner
Owner/Op start date:	10/23/2009
Owner/Op end date:	Not reported
Owner/operator name:	CITY OF LOS ANGELES BUREAU OF ENG
Owner/operator address:	Not reported Not reported
Owner/operator country:	US
Owner/operator telephone:	Not reported
Legal status:	Municipal
Owner/Operator Type:	Operator
Owner/Op start date:	01/25/2011
Owner/Op end date:	Not reported

Handler Activities Summary:

F AND L ENT INC (Continued) **1000886176**

U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Historical Generators:
Date form received by agency: 12/28/1993
Facility name: ALBION DAIRY DEMOLITION AND REMEDIATION PROJ
Site name: F AND L ENT INC
Classification: Small Quantity Generator

Hazardous Waste Summary:
Waste code: 151
Waste name: 151

Waste code: 261
Waste name: 261

Waste code: 611
Waste name: 611

Waste code: D008
Waste name: LEAD

Waste code: D009
Waste name: MERCURY

Waste code: D039
Waste name: TETRACHLOROETHYLENE

Waste code: D040
Waste name: TRICHLOROETHYLENE

Violation Status: No violations found

FINDS:

Registry ID: 110002613093

Environmental Interest/Information System
California Hazardous Waste Tracking System - Datamart (HWTS-DATAMART) provides California with information on hazardous waste shipments for generators, transporters, and treatment, storage, and disposal facilities.

F AND L ENT INC (Continued) **1000886176**

HAZNET:

Year:	2010
Gepaid:	CAL000285503
Contact:	HERMAN ACEVES
Telephone:	3232252448
Mailing Name:	Not reported
Mailing Address:	1739 N ALBION ST
Mailing City,St,Zip:	LOS ANGELES, CA 900312510
Gen County:	Not reported
TSD EPA ID:	CAD008302903
TSD County:	Not reported
Waste Category:	Unspecified oil-containing waste
Disposal Method:	STORAGE, BULKING, AND/OR TRANSFER OFF SITE--NO TREATMENT/REOVERY (H010-H129) OR (H131-H135)
Tons:	0.175
Facility County:	Los Angeles

Year:	2010
Gepaid:	CAL000285503
Contact:	HERMAN ACEVES
Telephone:	3232252448
Mailing Name:	Not reported
Mailing Address:	1739 N ALBION ST
Mailing City,St,Zip:	LOS ANGELES, CA 900312510
Gen County:	Not reported
TSD EPA ID:	CAD008302903
TSD County:	Not reported
Waste Category:	Other inorganic solid waste
Disposal Method:	STORAGE, BULKING, AND/OR TRANSFER OFF SITE--NO TREATMENT/REOVERY (H010-H129) OR (H131-H135)
Tons:	0.4
Facility County:	Los Angeles

Year:	2010
Gepaid:	CAL000285503
Contact:	HERMAN ACEVES
Telephone:	3232252448
Mailing Name:	Not reported
Mailing Address:	1739 N ALBION ST
Mailing City,St,Zip:	LOS ANGELES, CA 900312510
Gen County:	Not reported
TSD EPA ID:	CAD008302903
TSD County:	Not reported
Waste Category:	Other inorganic solid waste
Disposal Method:	STORAGE, BULKING, AND/OR TRANSFER OFF SITE--NO TREATMENT/REOVERY (H010-H129) OR (H131-H135)
Tons:	0.06
Facility County:	Los Angeles

Year:	2009
Gepaid:	CAL000285503
Contact:	HERMAN ACEVES
Telephone:	3232252448
Mailing Name:	Not reported
Mailing Address:	1739 N ALBION ST
Mailing City,St,Zip:	LOS ANGELES, CA 900312510
Gen County:	Los Angeles

F AND L ENT INC (Continued) **1000886176**

TSD EPA ID: CAT080013352
TSD County: Los Angeles
Waste Category: Aqueous solution with total organic residues less than 10 percent
Disposal Method: OTHER RECOVERY OF RECLAMATION FOR REUSE INCLUDING ACID REGENERATION, ORGANICS RECOVERY ECT
Tons: 1.05
Facility County: Los Angeles

Year: 2009
Gepaid: CAL000285503
Contact: HERMAN ACEVES
Telephone: 3232252448
Mailing Name: Not reported
Mailing Address: 1739 N ALBION ST
Mailing City,St,Zip: LOS ANGELES, CA 900312510
Gen County: Los Angeles
TSD EPA ID: CAD097030993
TSD County: Los Angeles
Waste Category: Unspecified aqueous solution
Disposal Method: DISCHARGE TO SEWER/POTW OR NPDES(WITH PRIOR STORAGE--WITH OR WITHOUT TREATMENT)
Tons: 0.63
Facility County: Los Angeles

Click this hyperlink while viewing on your computer to access
20 additional CA_HAZNET: record(s) in the EDR Site Report.

G26 **FOREMOST DAIRIES, INCORPORATED** **CA FID UST S101583349**
SE **1739 ALBION ST** **SWEEPS UST N/A**
1/8-1/4 **LOS ANGELES, CA 90031**
0.194 mi.
1026 ft. **Site 5 of 5 in cluster G**

Relative:
Lower

Actual:
305 ft.

CA FID UST:
Facility ID: 19003489
Regulated By: UTNKA
Regulated ID: 00006461
Cortese Code: Not reported
SIC Code: Not reported
Facility Phone: 2137281191
Mail To: Not reported
Mailing Address: 1739 ALBION ST
Mailing Address 2: Not reported
Mailing City,St,Zip: LOS ANGELES 900310000
Contact: Not reported
Contact Phone: Not reported
DUNs Number: Not reported
NPDES Number: Not reported
EPA ID: Not reported
Comments: Not reported
Status: Active

SWEEPS UST:
Status: Not reported
Comp Number: 719
Number: Not reported
Board Of Equalization: 44-011354

FOREMOST DAIRIES, INCORPORATED (Continued) **S101583349**

Ref Date: Not reported
Act Date: Not reported
Created Date: Not reported
Tank Status: Not reported
Owner Tank Id: Not reported
Swrcb Tank Id: 19-050-000719-000001
Actv Date: Not reported
Capacity: 12000
Tank Use: M.V. FUEL
Stg: PRODUCT
Content: DIESEL
Number Of Tanks: 4

Status: Not reported
Comp Number: 719
Number: Not reported
Board Of Equalization: 44-011354
Ref Date: Not reported
Act Date: Not reported
Created Date: Not reported
Tank Status: Not reported
Owner Tank Id: Not reported
Swrcb Tank Id: 19-050-000719-000002
Actv Date: Not reported
Capacity: 5000
Tank Use: M.V. FUEL
Stg: PRODUCT
Content: REG UNLEADED
Number Of Tanks: Not reported

Status: Not reported
Comp Number: 719
Number: Not reported
Board Of Equalization: 44-011354
Ref Date: Not reported
Act Date: Not reported
Created Date: Not reported
Tank Status: Not reported
Owner Tank Id: Not reported
Swrcb Tank Id: 19-050-000719-000003
Actv Date: Not reported
Capacity: 5000
Tank Use: M.V. FUEL
Stg: PRODUCT
Content: REG UNLEADED
Number Of Tanks: Not reported

Status: Not reported
Comp Number: 719
Number: Not reported
Board Of Equalization: 44-011354
Ref Date: Not reported
Act Date: Not reported
Created Date: Not reported
Tank Status: Not reported
Owner Tank Id: Not reported
Swrcb Tank Id: 19-050-000719-000004

FOREMOST DAIRIES, INCORPORATED (Continued) **S101583349**

Actv Date:	Not reported
Capacity:	10000
Tank Use:	M.V. FUEL
Stg:	PRODUCT
Content:	DIESEL
Number Of Tanks:	Not reported
Status:	A
Comp Number:	719
Number:	1
Board Of Equalization:	44-011354
Ref Date:	05-04-93
Act Date:	03-16-94
Created Date:	02-29-88
Tank Status:	A
Owner Tank Id:	0000000719
Swrcb Tank Id:	19-050-000719-000005
Actv Date:	10-30-92
Capacity:	20000
Tank Use:	M.V. FUEL
Stg:	P
Content:	DIESEL
Number Of Tanks:	1

H27 **TRUFLEX RUBBER PRODUCTS** **SLIC** **1006079519**
SSW **1667 MAIN** **N/A**
1/8-1/4 **LOS ANGELES, CA 90012**
0.196 mi.
1033 ft. **Site 1 of 3 in cluster H**

Relative:
Lower

Actual:
300 ft.

SLIC REG 4:

Region:	4
Facility Status:	No further action required
SLIC:	0975
Substance:	VOCs
Staff:	Jenny Au

H28 **TRUFLEX RUBBER PROD CO** **CA FID UST** **S101584591**
SSW **1667 N MAIN ST** **SWEEPS UST** **N/A**
1/8-1/4 **LOS ANGELES, CA 90012** **EMI**
0.196 mi.
1036 ft. **Site 2 of 3 in cluster H**

Relative:
Lower

Actual:
300 ft.

CA FID UST:

Facility ID:	19013178
Regulated By:	UTNKI
Regulated ID:	Not reported
Cortese Code:	Not reported
SIC Code:	Not reported
Facility Phone:	2130000000
Mail To:	Not reported
Mailing Address:	1667 N MAIN STREEET
Mailing Address 2:	Not reported
Mailing City,St,Zip:	LOS ANGELES 900120000
Contact:	Not reported
Contact Phone:	Not reported

TRUFLEX RUBBER PROD CO (Continued) **S101584591**

DUNs Number: Not reported
NPDES Number: Not reported
EPA ID: Not reported
Comments: Not reported
Status: Inactive

SWEEPS UST:
Status: Not reported
Comp Number: 5148
Number: Not reported
Board Of Equalization: Not reported
Ref Date: Not reported
Act Date: Not reported
Created Date: Not reported
Tank Status: Not reported
Owner Tank Id: Not reported
Swrcb Tank Id: Not reported
Actv Date: Not reported
Capacity: Not reported
Tank Use: Not reported
Stg: Not reported
Content: Not reported
Number Of Tanks: Not reported

EMI:
Year: 1987
County Code: 19
Air Basin: SC
Facility ID: 6604
Air District Name: SC
SIC Code: 3079
Air District Name: SOUTH COAST AQMD
Community Health Air Pollution Info System: Not reported
Consolidated Emission Reporting Rule: Not reported
Total Organic Hydrocarbon Gases Tons/Yr: 0
Reactive Organic Gases Tons/Yr: 0
Carbon Monoxide Emissions Tons/Yr: 0
NOX - Oxides of Nitrogen Tons/Yr: 0
SOX - Oxides of Sulphur Tons/Yr: 0
Particulate Matter Tons/Yr: 0
Part. Matter 10 Micrometers & Smllr Tons/Yr: 0

Year: 1990
County Code: 19
Air Basin: SC
Facility ID: 6604
Air District Name: SC
SIC Code: 3011
Air District Name: SOUTH COAST AQMD
Community Health Air Pollution Info System: Not reported
Consolidated Emission Reporting Rule: Not reported
Total Organic Hydrocarbon Gases Tons/Yr: 0
Reactive Organic Gases Tons/Yr: 0
Carbon Monoxide Emissions Tons/Yr: 0
NOX - Oxides of Nitrogen Tons/Yr: 0
SOX - Oxides of Sulphur Tons/Yr: 0

TRUFLEX RUBBER PROD CO (Continued) **S101584591**

Particulate Matter Tons/Yr: 0
Part. Matter 10 Micrometers & Smllr Tons/Yr: 0

H29 **TRUFLEX RUBBER** **CERC-NFRAP** **1000229617**
SSW **1667 N MAIN ST** **RCRA-SQG** **CAD981461403**
1/8-1/4 **LOS ANGELES, CA 90012** **FINDS**
0.196 mi. **HIST CORTESE**
1036 ft. **Site 3 of 3 in cluster H** **SLIC**
HAZNET
Relative: **ENVIROSTOR**
Lower

Actual: CERC-NFRAP:
300 ft. Site ID: 0904580
Federal Facility: Not a Federal Facility
NPL Status: Not on the NPL
Non NPL Status: NFRAP-Site does not qualify for the NPL based on existing information

CERCLIS-NFRAP Site Contact Details:
Contact Sequence ID: 13053681.00000
Person ID: 9271184.00000

Contact Sequence ID: 13289511.00000
Person ID: 13003854.00000

Contact Sequence ID: 13295106.00000
Person ID: 13003858.00000

Contact Sequence ID: 13300964.00000
Person ID: 13004003.00000

CERCLIS-NFRAP Site Alias Name(s):
Alias Name: BISHOP & SPERLING
Alias Address: Not reported
CA

CERCLIS-NFRAP Assessment History:
Action: DISCOVERY
Date Started: Not reported
Date Completed: 09/16/1992
Priority Level: Not reported

Action: ARCHIVE SITE
Date Started: Not reported
Date Completed: 07/07/1993
Priority Level: Not reported

Action: PRELIMINARY ASSESSMENT
Date Started: Not reported
Date Completed: 07/07/1993
Priority Level: NFRAP-Site does not qualify for the NPL based on existing information

RCRA-SQG:
Date form received by agency: 03/22/2002
Facility name: TRUFLEX RUBBER
Facility address: 1667 N MAIN ST
LOS ANGELES, CA 90012

TRUFLEX RUBBER (Continued) **1000229617**

EPA ID: CAD981461403
Mailing address: TECH INTERNATIONAL
200 E COSHOCTON ST
JOHNSTOWN, OH 43031
Contact: ALBERT DANTZER
Contact address: Not reported
Not reported
Contact country: Not reported
Contact telephone: (740) 965-9015
Contact email: ADANTZER@TECHTIREREPAIR.COM
EPA Region: 09
Classification: Small Small Quantity Generator
Description: Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:
Owner/operator name: TRUFLEX RUBBER PRODUCTS
Owner/operator address: NOT REQUIRED
NOT REQUIRED, ME 99999
Owner/operator country: Not reported
Owner/operator telephone: (415) 555-1212
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Owner/operator name: NOT REQUIRED
Owner/operator address: NOT REQUIRED
NOT REQUIRED, ME 99999
Owner/operator country: Not reported
Owner/operator telephone: (415) 555-1212
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

TRUFLEX RUBBER (Continued) **1000229617**

Universal Waste Summary:
Waste type: Lamps
Accumulated waste on-site: Unknown
Generated waste on-site: Yes

Historical Generators:
Date form received by agency: 03/22/2002
Facility name: TRUFLEX RUBBER
Classification: Large Quantity Generator

Date form received by agency: 04/14/1986
Facility name: TRUFLEX RUBBER
Site name: TRUFLEX RUBBER CO
Classification: Small Quantity Generator

Hazardous Waste Summary:
Waste code: D001
Waste name: IGNITABLE HAZARDOUS WASTES ARE THOSE WASTES WHICH HAVE A FLASHPOINT OF LESS THAN 140 DEGREES FAHRENHEIT AS DETERMINED BY A PENSKY-MARTENS CLOSED CUP FLASH POINT TESTER. ANOTHER METHOD OF DETERMINING THE FLASH POINT OF A WASTE IS TO REVIEW THE MATERIAL SAFETY DATA SHEET, WHICH CAN BE OBTAINED FROM THE MANUFACTURER OR DISTRIBUTOR OF THE MATERIAL. LACQUER THINNER IS AN EXAMPLE OF A COMMONLY USED SOLVENT WHICH WOULD BE CONSIDERED AS IGNITABLE HAZARDOUS WASTE.

Waste code: D002
Waste name: A WASTE WHICH HAS A PH OF LESS THAN 2 OR GREATER THAN 12.5 IS CONSIDERED TO BE A CORROSIVE HAZARDOUS WASTE. SODIUM HYDROXIDE, A CAUSTIC SOLUTION WITH A HIGH PH, IS OFTEN USED BY INDUSTRIES TO CLEAN OR DEGREASE PARTS. HYDROCHLORIC ACID, A SOLUTION WITH A LOW PH, IS USED BY MANY INDUSTRIES TO CLEAN METAL PARTS PRIOR TO PAINTING. WHEN THESE CAUSTIC OR ACID SOLUTIONS BECOME CONTAMINATED AND MUST BE DISPOSED, THE WASTE WOULD BE A CORROSIVE HAZARDOUS WASTE.

Waste code: D006
Waste name: CADMIUM

Waste code: D008
Waste name: LEAD

Waste code: D009
Waste name: MERCURY

Waste code: D018
Waste name: BENZENE

Waste code: D021
Waste name: CHLOROBENZENE

Waste code: D035
Waste name: METHYL ETHYL KETONE

Waste code: D039
Waste name: TETRACHLOROETHYLENE

Waste code: D040

TRUFLEX RUBBER (Continued) **1000229617**

Waste name: TRICHLOROETHYLENE

Waste code: F001
Waste name: THE FOLLOWING SPENT HALOGENATED SOLVENTS USED IN DEGREASING: TETRACHLOROETHYLENE, TRICHLOROETHYLENE, METHYLENE CHLORIDE, 1,1,1-TRICHLOROETHANE, CARBON TETRACHLORIDE, AND CHLORINATED FLUOROCARBONS; ALL SPENT SOLVENT MIXTURES/BLENDS USED IN DEGREASING CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE HALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN F002, F004, AND F005, AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

Waste code: F002
Waste name: THE FOLLOWING SPENT HALOGENATED SOLVENTS: TETRACHLOROETHYLENE, METHYLENE CHLORIDE, TRICHLOROETHYLENE, 1,1,1-TRICHLOROETHANE, CHLOROBENZENE, 1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE, ORTHO-DICHLOROBENZENE, TRICHLOROFLUOROMETHANE, AND 1,1,2-TRICHLOROETHANE; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE HALOGENATED SOLVENTS OR THOSE LISTED IN F001, F004, OR F005, AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

Violation Status: No violations found

FINDS:

Registry ID: 110002138730

Environmental Interest/Information System

The NEI (National Emissions Inventory) database contains information on stationary and mobile sources that emit criteria air pollutants and their precursors, as well as hazardous air pollutants (HAPs).

US EPA TRIS (Toxics Release Inventory System) contains information from facilities on the amounts of over 300 listed toxic chemicals that these facilities release directly to air, water, land, or that are transported off-site.

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

HAZARDOUS WASTE BIENNIAL REPORTER

CORTESE:
Region: CORTESE
Facility County Code: 19
Reg By: CALSI
Reg Id: 19300234

SLIC:
Region: STATE

TRUFLEX RUBBER (Continued) **1000229617**

Facility Status:	**Completed - Case Closed**
Status Date:	04/24/2002
Global Id:	SL204DC2386
Lead Agency:	LOS ANGELES RWQCB (REGION 4)
Lead Agency Case Number:	Not reported
Latitude:	34.067563
Longitude:	-118.225024
Case Type:	Cleanup Program Site
Case Worker:	JA
Local Agency:	Not reported
RB Case Number:	0975
File Location:	Not reported
Potential Media Affected:	Not reported
Potential Contaminants of Concern:	Not reported
Site History:	Not reported

Click here to access the California GeoTracker records for this facility:

HAZNET:

Year:	2001
Gepaid:	CAD981461403
Contact:	LITO DAVID
Telephone:	3232426300
Mailing Name:	Not reported
Mailing Address:	200 E COSHOCTON ST
Mailing City,St,Zip:	JOHNSTOWN, OH 430310000
Gen County:	Los Angeles
TSD EPA ID:	Not reported
TSD County:	Los Angeles
Waste Category:	Off-specification, aged or surplus organics
Disposal Method:	H01
Tons:	0.38
Facility County:	Not reported

Year:	2001
Gepaid:	CAD981461403
Contact:	LITO DAVID
Telephone:	3232426300
Mailing Name:	Not reported
Mailing Address:	200 E COSHOCTON ST
Mailing City,St,Zip:	JOHNSTOWN, OH 430310000
Gen County:	Los Angeles
TSD EPA ID:	Not reported
TSD County:	Los Angeles
Waste Category:	Oil/water separation sludge
Disposal Method:	Not reported
Tons:	0.72
Facility County:	Not reported

Year:	2001
Gepaid:	CAD981461403
Contact:	LITO DAVID
Telephone:	3232426300
Mailing Name:	Not reported
Mailing Address:	200 E COSHOCTON ST
Mailing City,St,Zip:	JOHNSTOWN, OH 430310000
Gen County:	Los Angeles

TRUFLEX RUBBER (Continued) **1000229617**

TSD EPA ID: Not reported
TSD County: Los Angeles
Waste Category: Liquids with pH <= 2
Disposal Method: H01
Tons: 0.02
Facility County: Not reported

Year: 2001
Gepaid: CAD981461403
Contact: LITO DAVID
Telephone: 3232426300
Mailing Name: Not reported
Mailing Address: 200 E COSHOCTON ST
Mailing City,St,Zip: JOHNSTOWN, OH 430310000
Gen County: Los Angeles
TSD EPA ID: Not reported
TSD County: Orange
Waste Category: Liquids with halogenated organic compounds >= 1,000 Mg./L
Disposal Method: H01
Tons: 0.98
Facility County: Not reported

Year: 2000
Gepaid: CAD981461403
Contact: TRUFLEX RUBBER CO
Telephone: 0000000000
Mailing Name: Not reported
Mailing Address: 1667 N MAIN ST
Mailing City,St,Zip: LOS ANGELES, CA 900121917
Gen County: Los Angeles
TSD EPA ID: CAT000613976
TSD County: Orange
Waste Category: Liquids with halogenated organic compounds >= 1,000 Mg./L
Disposal Method: H01
Tons: .6670
Facility County: Los Angeles

Click this hyperlink while viewing on your computer to access
4 additional CA_HAZNET: record(s) in the EDR Site Report.

ENVIROSTOR:
Site Type: Historical
Site Type Detailed: * Historical
Acres: Not reported
NPL: NO
Regulatory Agencies: NONE SPECIFIED
Lead Agency: NONE SPECIFIED
Program Manager: Not reported
Supervisor: Sayareh Amirebrahimi
Division Branch: Cleanup Chatsworth
Facility ID: 19300234
Site Code: Not reported
Assembly: 51
Senate: 24
Special Program: Not reported
Status: Inactive - Needs Evaluation
Status Date: 06/20/1995

TRUFLEX RUBBER (Continued) **1000229617**

Restricted Use: NO
Site Mgmt. Req.: NONE SPECIFIED
Funding: Not reported
Latitude: 34.06803
Longitude: -118.2266
APN: 5409003018
Past Use: NONE SPECIFIED
Potential COC: 10002, 10003, 10009, 10063, 10097, 10193, 10194, 10195, 20010
Confirmed COC: NONE SPECIFIED
Potential Description: NONE SPECIFIED
Alias Name: I T E CIRCUIT BREAKER COMPANY INC.
Alias Type: Alternate Name
Alias Name: TRU-FLEX RUBBER PRODUCTS COMPANY
Alias Type: Alternate Name
Alias Name: 5409003018
Alias Type: APN
Alias Name: CAD9814611903
Alias Type: EPA Identification Number
Alias Name: 19300234
Alias Type: Envirostor ID Number

Completed Info:
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: * Discovery
Completed Date: 10/22/1982
Comments: Known as the I T E Circuit Breaker Company, Inc: facility identified from L.A. Chamber of Commerce Directory 1963-1964. Electrical Distribution Equipment. On 05/31/1983, a facility drive-by was conducted. Now Truflex Rubber. Office in front; no waste visible from rear.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Site Screening
Completed Date: 06/30/1993
Comments: The Department received a complaint dated December 29, 1992 relates to alleged unlawful disposal or releases of hazard- ous wastes and hazardous substances, including PCE, TCE, 1,1,1-TCA and toluene at the site and neighboring property. Due to the evidience of on-site contamination, the Dept recommends a PEA.

Future Area Name: Not reported
Future Sub Area Name: Not reported
Future Document Type: Not reported
Future Due Date: Not reported
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported

I30 **BILL'S AUTOMOTIVE #2** **HIST CORTESE** **1000291654**
ENE **1796 N SPRING ST** **LUST** **N/A**
1/8-1/4 **LOS ANGELES, CA 90031** **CA FID UST**
0.198 mi. **HIST UST**
1044 ft. **Site 1 of 4 in cluster I** **SWEEPS UST**

Relative:
Higher

Actual:
321 ft.

CORTESE:

Region:	CORTESE
Facility County Code:	19
Reg By:	LTNKA
Reg Id:	900310061

LUST:

Region:	STATE
Global Id:	T0603700788
Latitude:	34.0713939
Longitude:	-118.2225416
Case Type:	LUST Cleanup Site
Status:	Completed - Case Closed
Status Date:	01/29/2010
Lead Agency:	LOS ANGELES RWQCB (REGION 4)
Case Worker:	AT
Local Agency:	LOS ANGELES, CITY OF
RB Case Number:	900310061
LOC Case Number:	Not reported
File Location:	Regional Board
Potential Media Affect:	Aquifer used for drinking water supply
Potential Contaminants of Concern:	Gasoline
Site History:	Not reported

Click here to access the California GeoTracker records for this facility:

LUST:

Global Id:	T0603700788
Contact Type:	Regional Board Caseworker
Contact Name:	ARMAN TOUMARI
Organization Name:	LOS ANGELES RWQCB (REGION 4)
Address:	320 WEST 4TH STREET, SUITE 200
City:	LOS ANGELES
Email:	atoumari@waterboards.ca.gov
Phone Number:	2135766708

Global Id:	T0603700788
Contact Type:	Local Agency Caseworker
Contact Name:	ELOY LUNA
Organization Name:	LOS ANGELES, CITY OF
Address:	200 North Main Street, Suite 1780
City:	LOS ANGELES
Email:	eloy.luna@lacity.org
Phone Number:	Not reported

LUST:

Global Id:	T0603700788
Action Type:	RESPONSE
Date:	07/15/2007
Action:	Monitoring Report - Quarterly

Global Id:	T0603700788
Action Type:	RESPONSE

BILL'S AUTOMOTIVE #2 (Continued) **1000291654**

Date: 04/15/2007
Action: Monitoring Report - Quarterly

Global Id: T0603700788
Action Type: RESPONSE
Date: 07/15/2007
Action: Monitoring Report - Quarterly

Global Id: T0603700788
Action Type: RESPONSE
Date: 07/22/2002
Action: Other Report / Document

Global Id: T0603700788
Action Type: RESPONSE
Date: 07/15/2004
Action: Monitoring Report - Quarterly

Global Id: T0603700788
Action Type: RESPONSE
Date: 10/15/2008
Action: Monitoring Report - Quarterly

Global Id: T0603700788
Action Type: ENFORCEMENT
Date: 07/19/2002
Action: File review

Global Id: T0603700788
Action Type: RESPONSE
Date: 07/06/2009
Action: Clean Up Fund - 5-Year Review Summary

Global Id: T0603700788
Action Type: RESPONSE
Date: 01/15/2009
Action: Monitoring Report - Quarterly

Global Id: T0603700788
Action Type: REMEDIATION
Date: 01/01/1950
Action: Free Product Removal

Global Id: T0603700788
Action Type: RESPONSE
Date: 01/15/2006
Action: Monitoring Report - Quarterly

Global Id: T0603700788
Action Type: ENFORCEMENT
Date: 01/29/2010
Action: Closure/No Further Action Letter

Global Id: T0603700788
Action Type: ENFORCEMENT
Date: 06/06/2007
Action: Staff Letter

BILL'S AUTOMOTIVE #2 (Continued) **1000291654**

Global Id: T0603700788
Action Type: RESPONSE
Date: 07/15/2005
Action: Monitoring Report - Quarterly

Global Id: T0603700788
Action Type: RESPONSE
Date: 05/21/2008
Action: Clean Up Fund - 5-Year Review Summary

Global Id: T0603700788
Action Type: RESPONSE
Date: 07/15/2008
Action: Monitoring Report - Quarterly

Global Id: T0603700788
Action Type: RESPONSE
Date: 04/15/2008
Action: Monitoring Report - Quarterly

Global Id: T0603700788
Action Type: ENFORCEMENT
Date: 06/15/2009
Action: Staff Letter

Global Id: T0603700788
Action Type: RESPONSE
Date: 12/13/2002
Action: Monitoring Report - Quarterly

Global Id: T0603700788
Action Type: RESPONSE
Date: 01/15/2008
Action: Monitoring Report - Quarterly

Global Id: T0603700788
Action Type: ENFORCEMENT
Date: 07/22/2002
Action: Staff Letter

Global Id: T0603700788
Action Type: Other
Date: 01/01/1950
Action: Leak Reported

LUST REG 4:
Region: 4
Regional Board: 04
County: Los Angeles
Facility Id: 900310061
Status: Pollution Characterization
Substance: Gasoline
Substance Quantity: Not reported
Local Case No: Not reported
Case Type: Groundwater
Abatement Method Used at the Site: Remove Free Product

BILL'S AUTOMOTIVE #2 (Continued) **1000291654**

Global ID:	T0603700788	
W Global ID:	W0605100649	
Staff:	MB	
Local Agency:	19050	
Cross Street:	AVENUE 18	
Enforcement Type:	LET	
Date Leak Discovered:	Not reported	
Date Leak First Reported:		2/4/1992
Date Leak Record Entered:	2/1/1992	
Date Confirmation Began:	12/9/1991	
Date Leak Stopped:	Not reported	
Date Case Last Changed on Database:		6/21/2002
Date the Case was Closed:		Not reported
How Leak Discovered:	Not reported	
How Leak Stopped:	Not reported	
Cause of Leak:	UNK	
Leak Source:	UNK	
Operator:	Not reported	
Water System:	DAVE GRIFFITH L A D W P	
Well Name:	Not reported	
Approx. Dist To Production Well (ft):		7178.777383897578149763349759 1
Source of Cleanup Funding:		UNK
Preliminary Site Assessment Workplan Submitted:		Not reported
Preliminary Site Assessment Began:		10/21/1992
Pollution Characterization Began:		6/10/1997
Remediation Plan Submitted:		Not reported
Remedial Action Underway:		Not reported
Post Remedial Action Monitoring Began:		Not reported
Enforcement Action Date:		Not reported
Historical Max MTBE Date:		1/1/1965
Hist Max MTBE Conc in Groundwater:		180
Hist Max MTBE Conc in Soil:		Not reported
Significant Interim Remedial Action Taken:		Yes
GW Qualifier:	Not reported	
Soil Qualifier:	Not reported	
Organization:	Not reported	
Owner Contact:	Not reported	
Responsible Party:	BILL MINATO	
RP Address:	1796 N. SPRING ST.	
Program:	LUST	
Lat/Long:	34.0713939 / -1	
Local Agency Staff:	PEJ	
Beneficial Use:	Not reported	
Priority:	Not reported	
Cleanup Fund Id:	Not reported	
Suspended:	Not reported	
Assigned Name:	2600649-001GEN	
Summary:	PLUME DEFINED, STABILITY TBD; 05/15/98 - LETTER OF WELL ABANDONMEN; 9/28/99 QUARTERLY SAMPLING REPORT; 8/30/00 QTRLY SAMPLING RPT	

CA FID UST:

Facility ID:	19003387
Regulated By:	UTNKI
Regulated ID:	00050604
Cortese Code:	Not reported
SIC Code:	Not reported
Facility Phone:	2132222419

BILL'S AUTOMOTIVE #2 (Continued) **1000291654**

Mail To: Not reported
Mailing Address: 1796 N SPRING ST
Mailing Address 2: Not reported
Mailing City,St,Zip: LOS ANGELES 900310000
Contact: Not reported
Contact Phone: Not reported
DUNs Number: Not reported
NPDES Number: Not reported
EPA ID: Not reported
Comments: Not reported
Status: Inactive

HIST UST:
Region: STATE
Facility ID: 00000050604
Facility Type: Gas Station
Other Type: Not reported
Total Tanks: 0004
Contact Name: WILLIAM MINATO
Telephone: 2132222419
Owner Name: WILLIAM MINATO
Owner Address: 1796 N. SPRING
Owner City,St,Zip: LOS ANGELES, CA 90031

Tank Num: 001
Container Num: 1
Year Installed: Not reported
Tank Capacity: 00008000
Tank Used for: PRODUCT
Type of Fuel: REGULAR
Tank Construction: Not reported
Leak Detection: None

Tank Num: 002
Container Num: 2
Year Installed: Not reported
Tank Capacity: 00006000
Tank Used for: PRODUCT
Type of Fuel: REGULAR
Tank Construction: Not reported
Leak Detection: None

Tank Num: 003
Container Num: 3
Year Installed: Not reported
Tank Capacity: 00005000
Tank Used for: PRODUCT
Type of Fuel: REGULAR
Tank Construction: Not reported
Leak Detection: None

Tank Num: 004
Container Num: 4
Year Installed: Not reported
Tank Capacity: 00000250
Tank Used for: WASTE
Type of Fuel: WASTE OIL

BILL'S AUTOMOTIVE #2 (Continued) **1000291654**

Tank Construction: Not reported
Leak Detection: None

SWEEPS UST:
Status: Not reported
Comp Number: 2733
Number: Not reported
Board Of Equalization: 44-012481
Ref Date: Not reported
Act Date: Not reported
Created Date: Not reported
Tank Status: Not reported
Owner Tank Id: Not reported
Swrcb Tank Id: 19-050-002733-000001
Actv Date: Not reported
Capacity: 8000
Tank Use: M.V. FUEL
Stg: PRODUCT
Content: REG UNLEADED
Number Of Tanks: 4

Status: Not reported
Comp Number: 2733
Number: Not reported
Board Of Equalization: 44-012481
Ref Date: Not reported
Act Date: Not reported
Created Date: Not reported
Tank Status: Not reported
Owner Tank Id: Not reported
Swrcb Tank Id: 19-050-002733-000002
Actv Date: Not reported
Capacity: 6000
Tank Use: M.V. FUEL
Stg: PRODUCT
Content: REG UNLEADED
Number Of Tanks: Not reported

Status: Not reported
Comp Number: 2733
Number: Not reported
Board Of Equalization: 44-012481
Ref Date: Not reported
Act Date: Not reported
Created Date: Not reported
Tank Status: Not reported
Owner Tank Id: Not reported
Swrcb Tank Id: 19-050-002733-000003
Actv Date: Not reported
Capacity: 5000
Tank Use: M.V. FUEL
Stg: PRODUCT
Content: REG UNLEADED
Number Of Tanks: Not reported

Status: Not reported
Comp Number: 2733

BILL'S AUTOMOTIVE #2 (Continued) **1000291654**

Number:	Not reported
Board Of Equalization:	44-012481
Ref Date:	Not reported
Act Date:	Not reported
Created Date:	Not reported
Tank Status:	Not reported
Owner Tank Id:	Not reported
Swrcb Tank Id:	19-050-002733-000004
Actv Date:	Not reported
Capacity:	250
Tank Use:	OIL
Stg:	WASTE
Content:	WASTE OIL
Number Of Tanks:	Not reported

I31 **SCHULZ P F** **EDR Historical Auto Stations** **1009081773**
ENE **1796 N BROADWAY** **N/A**
1/8-1/4 **LOS ANGELES, CA**
0.204 mi.
1075 ft. **Site 2 of 4 in cluster I**

Relative:
Higher

Actual:
323 ft.

EDR Historical Auto Stations:

Name:	SCHULZ P F
Year:	1937
Type:	GASOLINE AND OIL SERVICE STATIONS

I32 **DETTRE SCHULZ** **EDR Historical Auto Stations** **1009080333**
ENE **1801 N BROADWAY** **N/A**
1/8-1/4 **LOS ANGELES, CA**
0.214 mi.
1128 ft. **Site 3 of 4 in cluster I**

Relative:
Higher

Actual:
322 ft.

EDR Historical Auto Stations:

Name:	DETTRE SCHULZ
Year:	1929
Type:	GASOLINE AND OIL SERVICE STATION
Name:	WATERSON WM
Year:	1933
Type:	GASOLINE AND OIL SERVICE STATIONS
Name:	BROWNE BART
Year:	1937
Type:	GASOLINE AND OIL SERVICE STATIONS
Name:	THOMPSON W O
Year:	1937
Type:	AUTOMOBILE REPAIRING
Name:	TAORAMINA JOS
Year:	1942
Type:	GASOLINE AND OIL SERVICE STATIONS

33
ENE
1/8-1/4
0.215 mi.
1133 ft.

CERTIFIED MANAGEMENT CO
219 S AVENUE 18
LA, CA 90012

CA FID UST **S101584990**
SWEEPS UST **N/A**

Relative:
Higher

Actual:
317 ft.

CA FID UST:

Facility ID:	19017906
Regulated By:	UTNKI
Regulated ID:	Not reported
Cortese Code:	Not reported
SIC Code:	Not reported
Facility Phone:	2132221607
Mail To:	Not reported
Mailing Address:	219 S AVENUE 18
Mailing Address 2:	Not reported
Mailing City,St,Zip:	LA 900120000
Contact:	Not reported
Contact Phone:	Not reported
DUNs Number:	Not reported
NPDES Number:	Not reported
EPA ID:	Not reported
Comments:	Not reported
Status:	Inactive

SWEEPS UST:

Status:	Not reported
Comp Number:	7711
Number:	Not reported
Board Of Equalization:	Not reported
Ref Date:	Not reported
Act Date:	Not reported
Created Date:	Not reported
Tank Status:	Not reported
Owner Tank Id:	Not reported
Swrcb Tank Id:	Not reported
Actv Date:	Not reported
Capacity:	Not reported
Tank Use:	Not reported
Stg:	Not reported
Content:	Not reported
Number Of Tanks:	Not reported

J34
WSW
1/8-1/4
0.215 mi.
1133 ft.

MAIN STREET DAIRY (FORMER)
1620 SPRING ST N
LOS ANGELES, CA 90012

Site 1 of 3 in cluster J

HIST CORTESE **S104406268**
LUST **N/A**

Relative:
Lower

Actual:
302 ft.

CORTESE:

Region:	CORTESE
Facility County Code:	19
Reg By:	LTNKA
Reg Id:	900120016

LUST:

Region:	STATE
Global Id:	T0603700500
Latitude:	34.0689021

MAIN STREET DAIRY (FORMER) (Continued) **S104406268**

Longitude:	-118.2286107
Case Type:	LUST Cleanup Site
Status:	Completed - Case Closed
Status Date:	01/24/1997
Lead Agency:	LOS ANGELES RWQCB (REGION 4)
Case Worker:	YR
Local Agency:	LOS ANGELES, CITY OF
RB Case Number:	900120016
LOC Case Number:	Not reported
File Location:	Not reported
Potential Media Affect:	Aquifer used for drinking water supply
Potential Contaminants of Concern:	Gasoline
Site History:	Not reported

Click here to access the California GeoTracker records for this facility:

LUST:

Global Id:	T0603700500
Contact Type:	Regional Board Caseworker
Contact Name:	YUE RONG
Organization Name:	LOS ANGELES RWQCB (REGION 4)
Address:	320 W. 4TH ST., SUITE 200
City:	Los Angeles
Email:	yrong@waterboards.ca.gov
Phone Number:	Not reported

Global Id:	T0603700500
Contact Type:	Local Agency Caseworker
Contact Name:	ELOY LUNA
Organization Name:	LOS ANGELES, CITY OF
Address:	200 North Main Street, Suite 1780
City:	LOS ANGELES
Email:	eloy.luna@lacity.org
Phone Number:	Not reported

LUST:

Global Id:	T0603700500
Action Type:	Other
Date:	01/01/1950
Action:	Leak Reported

LUST REG 4:

Region:	4	
Regional Board:	04	
County:	Los Angeles	
Facility Id:	900120016	
Status:	Case Closed	
Substance:	Gasoline	
Substance Quantity:	Not reported	
Local Case No:	Not reported	
Case Type:	Groundwater	
Abatement Method Used at the Site:		Remove Free Product
Global ID:	T0603700500	
W Global ID:	W0605100649	
Staff:	UNK	
Local Agency:	19050	

MAIN STREET DAIRY (FORMER) (Continued) **S104406268**

Cross Street:	SOTELLO	
Enforcement Type:	Not reported	
Date Leak Discovered:	Not reported	
Date Leak First Reported:		8/9/1990
Date Leak Record Entered:	8/30/1990	
Date Confirmation Began:	Not reported	
Date Leak Stopped:	Not reported	
Date Case Last Changed on Database:		4/15/1997
Date the Case was Closed:		1/24/1997
How Leak Discovered:	Not reported	
How Leak Stopped:	Not reported	
Cause of Leak:	Not reported	
Leak Source:	Not reported	
Operator:	Not reported	
Water System:	DAVE GRIFFITH L A D W P	
Well Name:	Not reported	
Approx. Dist To Production Well (ft):		5156.52989030353948051644748 47
Source of Cleanup Funding:		Not reported
Preliminary Site Assessment Workplan Submitted:		Not reported
Preliminary Site Assessment Began:		Not reported
Pollution Characterization Began:		10/12/1990
Remediation Plan Submitted:		Not reported
Remedial Action Underway:		Not reported
Post Remedial Action Monitoring Began:		Not reported
Enforcement Action Date:		Not reported
Historical Max MTBE Date:		1/1/1965
Hist Max MTBE Conc in Groundwater:		36
Hist Max MTBE Conc in Soil:		Not reported
Significant Interim Remedial Action Taken:		Yes
GW Qualifier:	Not reported	
Soil Qualifier:	Not reported	
Organization:	Not reported	
Owner Contact:	Not reported	
Responsible Party:	CUSHMAN & WAKEFIELD OF CA, INC	
RP Address:	555 S FLOWER ST, SUITE 4200, LOS ANGELES CA 90071-2418	
Program:	LUST	
Lat/Long:	34.0689021 / -1	
Local Agency Staff:	PEJ	
Beneficial Use:	Not reported	
Priority:	Not reported	
Cleanup Fund Id:	Not reported	
Suspended:	Not reported	
Assigned Name:	2600649-001GEN	
Summary:	12/19/96 REQUEST FOR LOW RISK CLOSURE WELL ABANDONMENT REPORT	03/28/97

J35 **CARNATION DAILY** **HIST UST** **U001560498**
WSW **1620 N SPRING ST** **N/A**
1/8-1/4 **LOS ANGELES, CA 90012**
0.215 mi.
1133 ft. **Site 2 of 3 in cluster J**

Relative:
Lower

Actual:
302 ft.

HIST UST:

Region:	STATE
Facility ID:	00000005261
Facility Type:	Other
Other Type:	DAIRY
Total Tanks:	0008

CARNATION DAIRY (Continued) **U001560498**

Contact Name: Not reported
Telephone: 2132214131
Owner Name: CARNATION CO.
Owner Address: 5045 WILSHIRE BLVD.
Owner City,St,Zip: LOS ANGELES, CA 90036

Tank Num: 001
Container Num: 1
Year Installed: Not reported
Tank Capacity: 00020000
Tank Used for: PRODUCT
Type of Fuel: DIESEL
Tank Construction: Not reported
Leak Detection: Stock Inventor

Tank Num: 002
Container Num: 2
Year Installed: Not reported
Tank Capacity: 00012000
Tank Used for: PRODUCT
Type of Fuel: DIESEL
Tank Construction: Not reported
Leak Detection: Stock Inventor

Tank Num: 003
Container Num: 3
Year Installed: Not reported
Tank Capacity: 00010000
Tank Used for: PRODUCT
Type of Fuel: REGULAR
Tank Construction: Not reported
Leak Detection: Stock Inventor

Tank Num: 004
Container Num: 4
Year Installed: Not reported
Tank Capacity: 00010000
Tank Used for: PRODUCT
Type of Fuel: UNLEADED
Tank Construction: Not reported
Leak Detection: Stock Inventor

Tank Num: 005
Container Num: 5
Year Installed: Not reported
Tank Capacity: 00010000
Tank Used for: PRODUCT
Type of Fuel: DIESEL
Tank Construction: Not reported
Leak Detection: Stock Inventor

Tank Num: 006
Container Num: 6
Year Installed: Not reported
Tank Capacity: 00001000
Tank Used for: PRODUCT
Type of Fuel: Not reported

CARNATION DAIRY (Continued) **U001560498**

Tank Construction: Not reported
Leak Detection: Stock Inventor

Tank Num: 007
Container Num: 7
Year Installed: Not reported
Tank Capacity: 00000500
Tank Used for: PRODUCT
Type of Fuel: Not reported
Tank Construction: Not reported
Leak Detection: Stock Inventor

Tank Num: 008
Container Num: 8
Year Installed: Not reported
Tank Capacity: 00000500
Tank Used for: WASTE
Type of Fuel: WASTE OIL
Tank Construction: Not reported
Leak Detection: Stock Inventor

J36 **MAIN STREET DAIRY INC** **CA FID UST** **S101585291**
WSW **1620 N SPRING ST** **SWEEPS UST** **N/A**
1/8-1/4 **LOS ANGELES, CA 90012**
0.215 mi.
1133 ft. **Site 3 of 3 in cluster J**

Relative:
Lower

Actual:
302 ft.

CA FID UST:
Facility ID: 19022033
Regulated By: UTNKI
Regulated ID: 00005261
Cortese Code: Not reported
SIC Code: Not reported
Facility Phone: 2132261600
Mail To: Not reported
Mailing Address: 5045 WILSHIRE BLVD
Mailing Address 2: Not reported
Mailing City,St,Zip: LOS ANGELES 900120000
Contact: Not reported
Contact Phone: Not reported
DUNs Number: Not reported
NPDES Number: Not reported
EPA ID: Not reported
Comments: Not reported
Status: Inactive

SWEEPS UST:
Status: Not reported
Comp Number: 557
Number: Not reported
Board Of Equalization: 44-010496
Ref Date: Not reported
Act Date: Not reported
Created Date: Not reported
Tank Status: Not reported
Owner Tank Id: Not reported
Swrcb Tank Id: 19-050-000557-000001

MAIN STREET DAIRY INC (Continued) **S101585291**

Actv Date:	Not reported
Capacity:	20000
Tank Use:	M.V. FUEL
Stg:	PRODUCT
Content:	DIESEL
Number Of Tanks:	8

Status:	Not reported
Comp Number:	557
Number:	Not reported
Board Of Equalization:	44-010496
Ref Date:	Not reported
Act Date:	Not reported
Created Date:	Not reported
Tank Status:	Not reported
Owner Tank Id:	Not reported
Swrcb Tank Id:	19-050-000557-000002
Actv Date:	Not reported
Capacity:	12000
Tank Use:	M.V. FUEL
Stg:	PRODUCT
Content:	DIESEL
Number Of Tanks:	Not reported

Status:	Not reported
Comp Number:	557
Number:	Not reported
Board Of Equalization:	44-010496
Ref Date:	Not reported
Act Date:	Not reported
Created Date:	Not reported
Tank Status:	Not reported
Owner Tank Id:	Not reported
Swrcb Tank Id:	19-050-000557-000003
Actv Date:	Not reported
Capacity:	10000
Tank Use:	M.V. FUEL
Stg:	PRODUCT
Content:	REG UNLEADED
Number Of Tanks:	Not reported

Status:	Not reported
Comp Number:	557
Number:	Not reported
Board Of Equalization:	44-010496
Ref Date:	Not reported
Act Date:	Not reported
Created Date:	Not reported
Tank Status:	Not reported
Owner Tank Id:	Not reported
Swrcb Tank Id:	19-050-000557-000004
Actv Date:	Not reported
Capacity:	10000
Tank Use:	M.V. FUEL
Stg:	PRODUCT
Content:	REG UNLEADED
Number Of Tanks:	Not reported

MAIN STREET DAIRY INC (Continued) **S101585291**

Status:	Not reported
Comp Number:	557
Number:	Not reported
Board Of Equalization:	44-010496
Ref Date:	Not reported
Act Date:	Not reported
Created Date:	Not reported
Tank Status:	Not reported
Owner Tank Id:	Not reported
Swrcb Tank Id:	19-050-000557-000005
Actv Date:	Not reported
Capacity:	10000
Tank Use:	M.V. FUEL
Stg:	PRODUCT
Content:	DIESEL
Number Of Tanks:	Not reported

Status:	Not reported
Comp Number:	557
Number:	Not reported
Board Of Equalization:	44-010496
Ref Date:	Not reported
Act Date:	Not reported
Created Date:	Not reported
Tank Status:	Not reported
Owner Tank Id:	Not reported
Swrcb Tank Id:	19-050-000557-000006
Actv Date:	Not reported
Capacity:	1000
Tank Use:	CHEMICAL
Stg:	PRODUCT
Content:	UNKNOWN
Number Of Tanks:	Not reported

Status:	Not reported
Comp Number:	557
Number:	Not reported
Board Of Equalization:	44-010496
Ref Date:	Not reported
Act Date:	Not reported
Created Date:	Not reported
Tank Status:	Not reported
Owner Tank Id:	Not reported
Swrcb Tank Id:	19-050-000557-000007
Actv Date:	Not reported
Capacity:	500
Tank Use:	CHEMICAL
Stg:	PRODUCT
Content:	UNKNOWN
Number Of Tanks:	Not reported

Status:	Not reported
Comp Number:	557
Number:	Not reported
Board Of Equalization:	44-010496
Ref Date:	Not reported
Act Date:	Not reported

MAIN STREET DAIRY INC (Continued) **S101585291**

Created Date:	Not reported
Tank Status:	Not reported
Owner Tank Id:	Not reported
Swrcb Tank Id:	19-050-000557-000008
Actv Date:	Not reported
Capacity:	500
Tank Use:	OIL
Stg:	WASTE
Content:	WASTE OIL
Number Of Tanks:	Not reported

K37 **CARNATION COMPANY** **CA FID UST** **S101587501**
SSW **1639 N MAIN ST** **SWEEPS UST** **N/A**
1/8-1/4 **LOS ANGELES, CA 90012**
0.217 mi.
1146 ft. **Site 1 of 8 in cluster K**

Relative:
Lower

Actual:
301 ft.

CA FID UST:

Facility ID:	19055699
Regulated By:	UTNKA
Regulated ID:	Not reported
Cortese Code:	Not reported
SIC Code:	Not reported
Facility Phone:	2130000000
Mail To:	Not reported
Mailing Address:	1639 N MAIN ST
Mailing Address 2:	Not reported
Mailing City,St,Zip:	LOS ANGELES 900120000
Contact:	Not reported
Contact Phone:	Not reported
DUNs Number:	Not reported
NPDES Number:	Not reported
EPA ID:	Not reported
Comments:	Not reported
Status:	Active

SWEEPS UST:

Status:	A
Comp Number:	4156
Number:	1
Board Of Equalization:	Not reported
Ref Date:	08-30-93
Act Date:	08-30-93
Created Date:	02-29-88
Tank Status:	Not reported
Owner Tank Id:	Not reported
Swrcb Tank Id:	Not reported
Actv Date:	Not reported
Capacity:	Not reported
Tank Use:	Not reported
Stg:	Not reported
Content:	Not reported
Number Of Tanks:	Not reported

I38 **FROOMSON SAML** **EDR Historical Cleaners** **1009190885**
ENE **1802 N BROADWAY** **N/A**
1/8-1/4 **LOS ANGELES, CA**
0.220 mi.
1164 ft. **Site 4 of 4 in cluster I**

Relative:
Higher

Actual:
321 ft.

EDR Historical Cleaners:
Name: FROOMSON SAML
Year: 1933
Type: CLOTHES PRESSERS AND CLEANERS

K39 **MAIN STREET CENTER** **RCRA-TSDF** **1000102032**
SSW **1630 NORTH MAIN STREET, BLDG.** **CERC-NFRAP** **CAD000633305**
1/8-1/4 **LOS ANGELES, CA** **CORRACTS**
0.224 mi. **RCRA-LQG**
1185 ft. **Site 2 of 8 in cluster K** **2020 CORRECTIVE ACTION**
HWP

Relative:
Lower

FINANCIAL ASSURANCE

Actual:
301 ft.

RCRA-TSDF:
Date form received by agency: 06/09/2010
Facility name: MAIN STREET CENTER
Facility address: 1630 NORTH MAIN STREET
LOS ANGELES, CA 90012
EPA ID: CAD000633305
Mailing address: 111 NORTH HOPE STREET
ROOM 1050
LOS ANGELES, CA 90012
Contact: MARK J SEDLACEK
Contact address: 111 NORTH MAIN STREET ROOM 1050
LOS ANGELES, CA 90012
Contact country: US
Contact telephone: (213) 367-0403
Contact email: MARK.SEDLACEK@LADWP.COM
EPA Region: 09
Land type: Municipal
Classification: TSDF
Description: Handler is engaged in the treatment, storage or disposal of hazardous waste
Classification: Large Quantity Generator
Description: Handler: generates 1,000 kg or more of hazardous waste during any calendar month; or generates more than 1 kg of acutely hazardous waste during any calendar month; or generates more than 100 kg of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste during any calendar month; or generates 1 kg or less of acutely hazardous waste during any calendar month, and accumulates more than 1 kg of acutely hazardous waste at any time; or generates 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste during any calendar month, and accumulates more than 100 kg of that material at any time

Owner/Operator Summary:
Owner/operator name: DEPARTMENT OF WATER AND POWER CITY OF LA
Owner/operator address: P. O. BOX FIRST HUNDRED ELEVEN
CITY NOT REPORTED, CA 99999
Owner/operator country: Not reported
Owner/operator telephone: (213) 481-3100

MAIN STREET CENTER (Continued) **1000102032**

Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Owner/operator name: LOS ANGELES DEPT. OF WATER & POWER
Owner/operator address: 111 NORTH HOPE STREET ROOM 1050
LOS ANGELES, CA 90012
Owner/operator country: US
Owner/operator telephone: (213) 367-0403
Legal status: Municipal
Owner/Operator Type: Owner
Owner/Op start date: 01/01/1923
Owner/Op end date: Not reported

Owner/operator name: MARK J. SEDLACEK
Owner/operator address: Not reported
Not reported
Owner/operator country: Not reported
Owner/operator telephone: Not reported
Legal status: Municipal
Owner/Operator Type: Operator
Owner/Op start date: 01/01/1923
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Universal Waste Summary:
Waste type: Batteries
Accumulated waste on-site: Yes
Generated waste on-site: No

Waste type: Lamps
Accumulated waste on-site: Yes
Generated waste on-site: No

Historical Generators:
Date form received by agency: 02/28/2008
Facility name: MAIN STREET CENTER
Site name: LADWP MAIN STREET CENTER
Classification: Large Quantity Generator

MAIN STREET CENTER (Continued) **1000102032**

Date form received by agency: 02/28/2006
Facility name: MAIN STREET CENTER
Site name: LADWP MAIN STREET CENTER
Classification: Large Quantity Generator

Date form received by agency: 02/28/2004
Facility name: MAIN STREET CENTER
Classification: Large Quantity Generator

Date form received by agency: 02/27/2002
Facility name: MAIN STREET CENTER
Site name: MAIN STREET CENTER - LADWP
Classification: Large Quantity Generator

Date form received by agency: 10/12/2000
Facility name: MAIN STREET CENTER
Classification: Large Quantity Generator

Date form received by agency: 03/04/1999
Facility name: MAIN STREET CENTER
Classification: Large Quantity Generator

Date form received by agency: 01/29/1998
Facility name: MAIN STREET CENTER
Site name: LOS ANGELES DEPT OF WATER & POWER
Classification: Large Quantity Generator

Date form received by agency: 09/01/1996
Facility name: MAIN STREET CENTER
Site name: LOS ANGELES DEPT OF WATER & POWER
Classification: Large Quantity Generator

Date form received by agency: 06/04/1996
Facility name: MAIN STREET CENTER
Site name: DEPT OF WATER POWER CITY OF LA
Classification: Large Quantity Generator

Date form received by agency: 03/14/1994
Facility name: MAIN STREET CENTER
Site name: LOS ANGELES DEPARTMENT OF WATER & POWER
Classification: Large Quantity Generator

Date form received by agency: 02/29/1992
Facility name: MAIN STREET CENTER
Site name: GENERAL SERVICES HEADQUARTERS LOS ANGELE
Classification: Large Quantity Generator

Date form received by agency: 04/03/1991
Facility name: MAIN STREET CENTER
Site name: LA DEPT OF WATER & POWER-GENERAL SERVICE
Classification: Large Quantity Generator

Date form received by agency: 08/18/1980
Facility name: MAIN STREET CENTER
Site name: LOS ANGELES DEPT OF WATER & POWER
Classification: Large Quantity Generator

MAIN STREET CENTER (Continued) **1000102032**

Date form received by agency: 08/18/1980
Facility name: MAIN STREET CENTER
Site name: LOS ANGELES DEPT OF WATER & POWER
Classification: Large Quantity Generator

Hazardous Waste Summary:
Waste code: 122
Waste name: 122

Waste code: 134
Waste name: 134

Waste code: 181
Waste name: 181

Waste code: 212
Waste name: 212

Waste code: 331
Waste name: 331

Waste code: 352
Waste name: 352

Waste code: 551
Waste name: 551

Waste code: 791
Waste name: 791

Waste code: 792
Waste name: 792

Waste code: D001
Waste name: IGNITABLE HAZARDOUS WASTES ARE THOSE WASTES WHICH HAVE A FLASHPOINT OF LESS THAN 140 DEGREES FAHRENHEIT AS DETERMINED BY A PENSKY-MARTENS CLOSED CUP FLASH POINT TESTER. ANOTHER METHOD OF DETERMINING THE FLASH POINT OF A WASTE IS TO REVIEW THE MATERIAL SAFETY DATA SHEET, WHICH CAN BE OBTAINED FROM THE MANUFACTURER OR DISTRIBUTOR OF THE MATERIAL. LACQUER THINNER IS AN EXAMPLE OF A COMMONLY USED SOLVENT WHICH WOULD BE CONSIDERED AS IGNITABLE HAZARDOUS WASTE.

Waste code: D002
Waste name: A WASTE WHICH HAS A PH OF LESS THAN 2 OR GREATER THAN 12.5 IS CONSIDERED TO BE A CORROSIVE HAZARDOUS WASTE. SODIUM HYDROXIDE, A CAUSTIC SOLUTION WITH A HIGH PH, IS OFTEN USED BY INDUSTRIES TO CLEAN OR DEGREASE PARTS. HYDROCHLORIC ACID, A SOLUTION WITH A LOW PH, IS USED BY MANY INDUSTRIES TO CLEAN METAL PARTS PRIOR TO PAINTING. WHEN THESE CAUSTIC OR ACID SOLUTIONS BECOME CONTAMINATED AND MUST BE DISPOSED, THE WASTE WOULD BE A CORROSIVE HAZARDOUS WASTE.

Waste code: D003
Waste name: A MATERIAL IS CONSIDERED TO BE A REACTIVE HAZARDOUS WASTE IF IT IS NORMALLY UNSTABLE, REACTS VIOLENTLY WITH WATER, GENERATES TOXIC GASES WHEN EXPOSED TO WATER OR CORROSIVE MATERIALS, OR IF IT IS CAPABLE OF DETONATION OR EXPLOSION WHEN EXPOSED TO HEAT OR A FLAME. ONE EXAMPLE OF SUCH WASTE WOULD BY WASTE GUNPOWDER.

MAIN STREET CENTER (Continued) **1000102032**

Waste code: D007
Waste name: CHROMIUM

Waste code: D008
Waste name: LEAD

Waste code: D010
Waste name: SELENIUM

Waste code: D018
Waste name: BENZENE

Waste code: D035
Waste name: METHYL ETHYL KETONE

Waste code: D039
Waste name: TETRACHLOROETHYLENE

Waste code: D040
Waste name: TRICHLOROETHYLENE

Waste code: F002
Waste name: THE FOLLOWING SPENT HALOGENATED SOLVENTS: TETRACHLOROETHYLENE, METHYLENE CHLORIDE, TRICHLOROETHYLENE, 1,1,1-TRICHLOROETHANE, CHLOROBENZENE, 1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE, ORTHO-DICHLOROBENZENE, TRICHLOROFLUOROMETHANE, AND 1,1,2-TRICHLOROETHANE; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE HALOGENATED SOLVENTS OR THOSE LISTED IN F001, F004, OR F005, AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

Waste code: F003
Waste name: THE FOLLOWING SPENT NON-HALOGENATED SOLVENTS: XYLENE, ACETONE, ETHYL ACETATE, ETHYL BENZENE, ETHYL ETHER, METHYL ISOBUTYL KETONE, N-BUTYL ALCOHOL, CYCLOHEXANONE, AND METHANOL; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONLY THE ABOVE SPENT NON-HALOGENATED SOLVENTS; AND ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONE OR MORE OF THE ABOVE NON-HALOGENATED SOLVENTS, AND, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THOSE SOLVENTS LISTED IN F001, F002, F004, AND F005, AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

Waste code: F005
Waste name: THE FOLLOWING SPENT NON-HALOGENATED SOLVENTS: TOLUENE, METHYL ETHYL KETONE, CARBON DISULFIDE, ISOBUTANOL, PYRIDINE, BENZENE, 2-ETHOXYETHANOL, AND 2-NITROPROPANE; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE NON-HALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN F001, F002, OR F004; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

Biennial Reports:

Last Biennial Reporting Year: 2011

MAIN STREET CENTER (Continued) **1000102032**

Annual Waste Handled:

Waste code:	D001
Waste name:	IGNITABLE HAZARDOUS WASTES ARE THOSE WASTES WHICH HAVE A FLASHPOINT OF LESS THAN 140 DEGREES FAHRENHEIT AS DETERMINED BY A PENSKY-MARTENS CLOSED CUP FLASH POINT TESTER. ANOTHER METHOD OF DETERMINING THE FLASH POINT OF A WASTE IS TO REVIEW THE MATERIAL SAFETY DATA SHEET, WHICH CAN BE OBTAINED FROM THE MANUFACTURER OR DISTRIBUTOR OF THE MATERIAL. LACQUER THINNER IS AN EXAMPLE OF A COMMONLY USED SOLVENT WHICH WOULD BE CONSIDERED AS IGNITABLE HAZARDOUS WASTE.
Amount (Lbs):	34191.2
Waste code:	D002
Waste name:	A WASTE WHICH HAS A PH OF LESS THAN 2 OR GREATER THAN 12.5 IS CONSIDERED TO BE A CORROSIVE HAZARDOUS WASTE. SODIUM HYDROXIDE, A CAUSTIC SOLUTION WITH A HIGH PH, IS OFTEN USED BY INDUSTRIES TO CLEAN OR DEGREASE PARTS. HYDROCHLORIC ACID, A SOLUTION WITH A LOW PH, IS USED BY MANY INDUSTRIES TO CLEAN METAL PARTS PRIOR TO PAINTING. WHEN THESE CAUSTIC OR ACID SOLUTIONS BECOME CONTAMINATED AND MUST BE DISPOSED, THE WASTE WOULD BE A CORROSIVE HAZARDOUS WASTE.
Amount (Lbs):	10630
Waste code:	D003
Waste name:	A MATERIAL IS CONSIDERED TO BE A REACTIVE HAZARDOUS WASTE IF IT IS NORMALLY UNSTABLE, REACTS VIOLENTLY WITH WATER, GENERATES TOXIC GASES WHEN EXPOSED TO WATER OR CORROSIVE MATERIALS, OR IF IT IS CAPABLE OF DETONATION OR EXPLOSION WHEN EXPOSED TO HEAT OR A FLAME. ONE EXAMPLE OF SUCH WASTE WOULD BY WASTE GUNPOWDER.
Amount (Lbs):	3000
Waste code:	D007
Waste name:	CHROMIUM
Amount (Lbs):	6900
Waste code:	D008
Waste name:	LEAD
Amount (Lbs):	23700
Waste code:	D010
Waste name:	SELENIUM
Amount (Lbs):	3000
Waste code:	D018
Waste name:	BENZENE
Amount (Lbs):	8238
Waste code:	D035
Waste name:	METHYL ETHYL KETONE
Amount (Lbs):	16450.7
Waste code:	D039
Waste name:	TETRACHLOROETHYLENE
Amount (Lbs):	16450.7
Waste code:	D040
Waste name:	TRICHLOROETHYLENE
Amount (Lbs):	16450.7

MAIN STREET CENTER (Continued) **1000102032**

Waste code: F002
Waste name: THE FOLLOWING SPENT HALOGENATED SOLVENTS: TETRACHLOROETHYLENE, METHYLENE CHLORIDE, TRICHLOROETHYLENE, 1,1,1-TRICHLOROETHANE, CHLOROBENZENE, 1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE, ORTHO-DICHLOROBENZENE, TRICHLOROFLUOROMETHANE, AND 1,1,2-TRICHLOROETHANE; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE HALOGENATED SOLVENTS OR THOSE LISTED IN F001, F004, OR F005, AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.
Amount (Lbs): 21890.7

Waste code: F003
Waste name: THE FOLLOWING SPENT NON-HALOGENATED SOLVENTS: XYLENE, ACETONE, ETHYL ACETATE, ETHYL BENZENE, ETHYL ETHER, METHYL ISOBUTYL KETONE, N-BUTYL ALCOHOL, CYCLOHEXANONE, AND METHANOL; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONLY THE ABOVE SPENT NON-HALOGENATED SOLVENTS; AND ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONE OR MORE OF THE ABOVE NON-HALOGENATED SOLVENTS, AND, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THOSE SOLVENTS LISTED IN F001, F002, F004, AND F005, AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.
Amount (Lbs): 22346.7

Waste code: F005
Waste name: THE FOLLOWING SPENT NON-HALOGENATED SOLVENTS: TOLUENE, METHYL ETHYL KETONE, CARBON DISULFIDE, ISOBUTANOL, PYRIDINE, BENZENE, 2-ETHOXYETHANOL, AND 2-NITROPROPANE; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE NON-HALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN F001, F002, OR F004; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.
Amount (Lbs): 19476.7

Corrective Action Summary:
Event date: 04/22/1993
Event: CA049PA

Event date: 04/22/1993
Event: RFA Completed

Event date: 07/12/1993
Event: CA Prioritization, Facility or area was assigned a medium corrective action priority.

Event date: 07/12/1993
Event: Stabilization Measures Evaluation,This facility is amenable to stabilization activity based on the status of corrective action work at the facility, technical factors, the degree of risk, timing considerations and administrative considerations.

Facility Has Received Notices of Violations:
Regulation violated: Not reported
Area of violation: TSD IS-Contingency Plan and Emergency Procedures

MAIN STREET CENTER (Continued) **1000102032**

Date violation determined: 11/01/2011
Date achieved compliance: Not reported
Violation lead agency: EPA
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: Used Oil - Generators
Date violation determined: 11/01/2011
Date achieved compliance: Not reported
Violation lead agency: EPA
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: TSD - Financial Requirements
Date violation determined: 03/13/2008
Date achieved compliance: 12/16/2008
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 03/17/2008
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: TSD - Financial Requirements
Date violation determined: 04/23/2007
Date achieved compliance: 12/16/2008
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 05/01/2007
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: TSD - General
Date violation determined: 03/08/2007

MAIN STREET CENTER (Continued) **1000102032**

Date achieved compliance: 03/20/2007
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 03/20/2007
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: TSD - Financial Requirements
Date violation determined: 05/30/2006
Date achieved compliance: 12/16/2008
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 05/30/2006
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: TSD - Financial Requirements
Date violation determined: 05/30/2006
Date achieved compliance: 06/06/2007
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 05/30/2006
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: TSD - Financial Requirements
Date violation determined: 06/07/2005
Date achieved compliance: 12/13/2005
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 11/29/2005
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: Transporters - Manifest and Recordkeeping
Date violation determined: 04/20/2004
Date achieved compliance: 07/14/2005

MAIN STREET CENTER (Continued) **1000102032**

Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 04/22/2004
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: TSD - General Facility Standards
Date violation determined: 04/20/2004
Date achieved compliance: 07/14/2005
Violation lead agency: State
Enforcement action: INITIAL 3008(A) COMPLIANCE
Enforcement action date: 07/14/2005
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: 20000
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: Generators - Manifest
Date violation determined: 04/20/2004
Date achieved compliance: 07/14/2005
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 04/22/2004
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: TSD - General Facility Standards
Date violation determined: 04/20/2004
Date achieved compliance: 07/14/2005
Violation lead agency: State
Enforcement action: FINAL 3008(A) COMPLIANCE ORDER
Enforcement action date: 07/14/2005
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: 20020
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: TSD - General Facility Standards
Date violation determined: 04/20/2004
Date achieved compliance: 07/14/2005
Violation lead agency: State

MAIN STREET CENTER (Continued) **1000102032**

Enforcement action: WRITTEN INFORMAL
Enforcement action date: 04/22/2004
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: TSD - Tank System Standards
Date violation determined: 01/29/2003
Date achieved compliance: 02/04/2003
Violation lead agency: State
Enforcement action: FINAL 3008(A) COMPLIANCE ORDER
Enforcement action date: 12/08/2003
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: 114807
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: Generators - Pre-transport
Date violation determined: 01/29/2003
Date achieved compliance: 02/04/2003
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 02/04/2003
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: TSD - Tank System Standards
Date violation determined: 01/29/2003
Date achieved compliance: 02/04/2003
Violation lead agency: State
Enforcement action: INITIAL 3008(A) COMPLIANCE
Enforcement action date: 12/08/2003
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: 97000
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: TSD - Tank System Standards
Date violation determined: 01/29/2003
Date achieved compliance: 02/04/2003
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL

MAIN STREET CENTER (Continued) **1000102032**

Enforcement action date: 02/04/2003
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: Generators - General
Date violation determined: 02/15/2002
Date achieved compliance: 03/19/2002
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 02/20/2002
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: TSD - General Facility Standards
Date violation determined: 02/15/2002
Date achieved compliance: 03/19/2002
Violation lead agency: State
Enforcement action: FINAL 3008(A) COMPLIANCE ORDER
Enforcement action date: 01/28/2003
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: 53655
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: TSD - Container Use and Management
Date violation determined: 02/15/2002
Date achieved compliance: 03/19/2002
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 02/20/2002
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: TSD - Container Use and Management
Date violation determined: 02/15/2002
Date achieved compliance: 03/19/2002
Violation lead agency: State
Enforcement action: INITIAL 3008(A) COMPLIANCE
Enforcement action date: 12/23/2002

MAIN STREET CENTER (Continued) **1000102032**

Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: 53655
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: TSD - General Facility Standards
Date violation determined: 02/15/2002
Date achieved compliance: 03/19/2002
Violation lead agency: State
Enforcement action: INITIAL 3008(A) COMPLIANCE
Enforcement action date: 12/23/2002
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: 53655
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: TSD - Contingency Plan and Emergency Procedures
Date violation determined: 02/15/2002
Date achieved compliance: 03/19/2002
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 02/20/2002
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: Generators - Pre-transport
Date violation determined: 02/15/2002
Date achieved compliance: 03/19/2002
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 02/20/2002
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: TSD - Container Use and Management
Date violation determined: 02/15/2002
Date achieved compliance: 03/19/2002
Violation lead agency: State
Enforcement action: FINAL 3008(A) COMPLIANCE ORDER
Enforcement action date: 01/28/2003
Enf. disposition status: Not reported

MAIN STREET CENTER (Continued) **1000102032**

Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: 53655
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: TSD - General Facility Standards
Date violation determined: 02/15/2002
Date achieved compliance: 03/19/2002
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 02/20/2002
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: Generators - Manifest
Date violation determined: 02/15/2002
Date achieved compliance: 03/19/2002
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 02/20/2002
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: TSD - General Facility Standards
Date violation determined: 12/18/2000
Date achieved compliance: 02/02/2001
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 01/04/2001
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: TSD - Tank System Standards
Date violation determined: 12/18/2000
Date achieved compliance: 11/02/2001
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 01/04/2001
Enf. disposition status: Not reported
Enf. disp. status date: Not reported

MAIN STREET CENTER (Continued) **1000102032**

Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: TSD IS-Chemical, Physical, AND Treatment
Date violation determined: 12/18/2000
Date achieved compliance: 11/02/2001
Violation lead agency: State
Enforcement action: INITIAL 3008(A) COMPLIANCE
Enforcement action date: 11/07/2001
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: 72000
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: TSD - Tank System Standards
Date violation determined: 12/18/2000
Date achieved compliance: 02/02/2001
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 01/04/2001
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: TSD - Preparedness and Prevention
Date violation determined: 12/18/2000
Date achieved compliance: 11/02/2001
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 01/04/2001
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: TSD IS-Chemical, Physical, AND Treatment
Date violation determined: 12/18/2000
Date achieved compliance: 11/02/2001
Violation lead agency: State
Enforcement action: FINAL 3008(A) COMPLIANCE ORDER
Enforcement action date: 11/07/2001
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State

MAIN STREET CENTER (Continued) **1000102032**

Proposed penalty amount: Not reported
Final penalty amount: 72000
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: TSD - Contingency Plan and Emergency Procedures
Date violation determined: 12/18/2000
Date achieved compliance: 02/02/2001
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 01/04/2001
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: Generators - General
Date violation determined: 12/18/2000
Date achieved compliance: 02/02/2001
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 01/04/2001
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: Generators - Manifest
Date violation determined: 12/18/2000
Date achieved compliance: 02/02/2001
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 01/04/2001
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: TSD - Tank System Standards
Date violation determined: 12/18/2000
Date achieved compliance: 11/02/2001
Violation lead agency: State
Enforcement action: FINAL 3008(A) COMPLIANCE ORDER
Enforcement action date: 11/07/2001
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported

MAIN STREET CENTER (Continued) **1000102032**

Final penalty amount: 72000
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: Transporters - General
Date violation determined: 12/18/2000
Date achieved compliance: 11/02/2001
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 01/04/2001
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: TSD IS-Chemical, Physical, AND Treatment
Date violation determined: 12/18/2000
Date achieved compliance: 11/02/2001
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 01/04/2001
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: TSD - Tank System Standards
Date violation determined: 12/18/2000
Date achieved compliance: 11/02/2001
Violation lead agency: State
Enforcement action: INITIAL 3008(A) COMPLIANCE
Enforcement action date: 11/07/2001
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: 72000
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: Generators - General
Date violation determined: 02/22/2000
Date achieved compliance: 04/11/2001
Violation lead agency: State
Enforcement action: INITIAL 3008(A) COMPLIANCE
Enforcement action date: 10/05/2000
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: 37000
Final penalty amount: Not reported

MAIN STREET CENTER (Continued) **1000102032**

Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: Generators - General
Date violation determined: 02/22/2000
Date achieved compliance: 04/11/2001
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 03/06/2000
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: Generators - General
Date violation determined: 02/22/2000
Date achieved compliance: 04/11/2001
Violation lead agency: State
Enforcement action: FINAL 3008(A) COMPLIANCE ORDER
Enforcement action date: 04/11/2001
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: 33000
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: Generators - General
Date violation determined: 02/22/2000
Date achieved compliance: 04/11/2001
Violation lead agency: State
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: Generators - Records/Reporting
Date violation determined: 02/22/2000
Date achieved compliance: 03/13/2000
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 03/06/2000
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

MAIN STREET CENTER (Continued) **1000102032**

Regulation violated: Not reported
Area of violation: TSD - Container Use and Management
Date violation determined: 02/22/2000
Date achieved compliance: 03/13/2000
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 03/06/2000
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: F - 264.30-37.C
Area of violation: TSD - General
Date violation determined: 11/04/1998
Date achieved compliance: 11/04/1998
Violation lead agency: State
Enforcement action: FINAL 3008(A) COMPLIANCE ORDER
Enforcement action date: 10/01/1998
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: 22400
Paid penalty amount: Not reported

Regulation violated: F - 264.10-18.B
Area of violation: TSD - General
Date violation determined: 10/01/1998
Date achieved compliance: 11/04/1998
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 10/01/1998
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: F - 264.10-18.B
Area of violation: TSD - General
Date violation determined: 10/01/1998
Date achieved compliance: 11/04/1998
Violation lead agency: State
Enforcement action: FINAL 3008(A) COMPLIANCE ORDER
Enforcement action date: 10/01/1998
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: 22400
Paid penalty amount: Not reported

Regulation violated: F - 270

MAIN STREET CENTER (Continued) **1000102032**

Area of violation: TSD - General
Date violation determined: 10/01/1998
Date achieved compliance: 11/04/1998
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 10/01/1998
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: F - 264.70-77.E
Area of violation: TSD - General
Date violation determined: 10/01/1998
Date achieved compliance: 11/04/1998
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 10/01/1998
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: F - 264.70-77.E
Area of violation: TSD - General
Date violation determined: 10/01/1998
Date achieved compliance: 11/04/1998
Violation lead agency: State
Enforcement action: FINAL 3008(A) COMPLIANCE ORDER
Enforcement action date: 10/01/1998
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: 22400
Paid penalty amount: Not reported

Regulation violated: F - 270
Area of violation: TSD - General
Date violation determined: 10/01/1998
Date achieved compliance: 11/04/1998
Violation lead agency: State
Enforcement action: FINAL 3008(A) COMPLIANCE ORDER
Enforcement action date: 10/01/1998
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: 22400
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: TSD - General Facility Standards

MAIN STREET CENTER (Continued) **1000102032**

Date violation determined: 09/29/1998
Date achieved compliance: 05/11/1999
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 10/01/1998
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: TSD - Manifest/Records/Reporting
Date violation determined: 09/29/1998
Date achieved compliance: 05/11/1999
Violation lead agency: State
Enforcement action: FINAL 3008(A) COMPLIANCE ORDER
Enforcement action date: 05/11/1999
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: 27400
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: TSD - Manifest/Records/Reporting
Date violation determined: 09/29/1998
Date achieved compliance: 05/11/1999
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 10/01/1998
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: TSD - General Facility Standards
Date violation determined: 09/29/1998
Date achieved compliance: 11/04/1998
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 10/01/1998
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: TSD - General Facility Standards
Date violation determined: 09/29/1998

MAIN STREET CENTER (Continued) **1000102032**

Date achieved compliance: 05/11/1999
Violation lead agency: State
Enforcement action: FINAL 3008(A) COMPLIANCE ORDER
Enforcement action date: 05/11/1999
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: 27400
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: TSD - Preparedness and Prevention
Date violation determined: 09/29/1998
Date achieved compliance: 05/11/1999
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 10/01/1998
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: TSD - Manifest/Records/Reporting
Date violation determined: 09/29/1998
Date achieved compliance: 05/11/1999
Violation lead agency: State
Enforcement action: INITIAL 3008(A) COMPLIANCE
Enforcement action date: 05/11/1999
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: 22400
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: TSD - Preparedness and Prevention
Date violation determined: 09/29/1998
Date achieved compliance: 05/11/1999
Violation lead agency: State
Enforcement action: INITIAL 3008(A) COMPLIANCE
Enforcement action date: 05/11/1999
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: 22400
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: TSD - Preparedness and Prevention
Date violation determined: 09/29/1998
Date achieved compliance: 05/11/1999

MAIN STREET CENTER (Continued) **1000102032**

Violation lead agency: State
Enforcement action: FINAL 3008(A) COMPLIANCE ORDER
Enforcement action date: 05/11/1999
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: 27400
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: TSD - General Facility Standards
Date violation determined: 09/29/1998
Date achieved compliance: 05/11/1999
Violation lead agency: State
Enforcement action: INITIAL 3008(A) COMPLIANCE
Enforcement action date: 05/11/1999
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: 22400
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: F - 264.140-150.H
Area of violation: TSD - Financial Requirements
Date violation determined: 05/30/1996
Date achieved compliance: 11/22/1996
Violation lead agency: State
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: F - 270
Area of violation: TSD - General
Date violation determined: 05/22/1996
Date achieved compliance: 06/22/1996
Violation lead agency: State
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: F - 264.10-18.B
Area of violation: TSD - General
Date violation determined: 05/07/1994
Date achieved compliance: 03/16/1996
Violation lead agency: State

MAIN STREET CENTER (Continued) **1000102032**

Enforcement action: WRITTEN INFORMAL
Enforcement action date: 05/13/1994
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: F - 262.10-12.A
Area of violation: Generators - General
Date violation determined: 05/07/1994
Date achieved compliance: 03/16/1996
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 05/13/1994
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: F - 262.50-60
Area of violation: Generators - General
Date violation determined: 05/07/1994
Date achieved compliance: 03/16/1996
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 05/13/1994
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: F - 262.30-34.C
Area of violation: Generators - General
Date violation determined: 05/07/1994
Date achieved compliance: 03/16/1996
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 05/13/1994
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: F - 263
Area of violation: Transporters - General
Date violation determined: 05/07/1994
Date achieved compliance: 03/16/1996
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL

MAIN STREET CENTER (Continued) **1000102032**

Enforcement action date: 05/13/1994
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: F - 264.140-150.H
Area of violation: TSD - Financial Requirements
Date violation determined: 05/07/1994
Date achieved compliance: 10/19/1994
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 05/13/1994
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: F - 270
Area of violation: TSD - General
Date violation determined: 05/07/1994
Date achieved compliance: 03/16/1996
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 05/13/1994
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: F - 264.170-177.I
Area of violation: TSD - General
Date violation determined: 05/07/1994
Date achieved compliance: 03/16/1996
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 05/13/1994
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: F - 264.70-77.E
Area of violation: TSD - General
Date violation determined: 05/07/1994
Date achieved compliance: 03/16/1996
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 05/13/1994

MAIN STREET CENTER (Continued) **1000102032**

Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: FR - 262.10-12.A
Area of violation: Generators - General
Date violation determined: 02/27/1986
Date achieved compliance: 04/25/1986
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 03/14/1986
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Evaluation Action Summary:
Evaluation date: 11/01/2011
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: TSD IS-Contingency Plan and Emergency Procedures
Date achieved compliance: Not reported
Evaluation lead agency: EPA

Evaluation date: 11/01/2011
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Used Oil - Generators
Date achieved compliance: Not reported
Evaluation lead agency: EPA

Evaluation date: 03/25/2008
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 03/13/2008
Evaluation: FINANCIAL RECORD REVIEW
Area of violation: TSD - Financial Requirements
Date achieved compliance: 12/16/2008
Evaluation lead agency: State

Evaluation date: 04/23/2007
Evaluation: FINANCIAL RECORD REVIEW
Area of violation: TSD - Financial Requirements
Date achieved compliance: 12/16/2008
Evaluation lead agency: State

Evaluation date: 03/08/2007
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: TSD - General
Date achieved compliance: 03/20/2007
Evaluation lead agency: State

MAIN STREET CENTER (Continued) **1000102032**

Evaluation date: 09/22/2006
Evaluation: FINANCIAL RECORD REVIEW
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: EPA Contractor/Grantee

Evaluation date: 05/30/2006
Evaluation: FINANCIAL RECORD REVIEW
Area of violation: TSD - Financial Requirements
Date achieved compliance: 12/16/2008
Evaluation lead agency: State

Evaluation date: 05/30/2006
Evaluation: FINANCIAL RECORD REVIEW
Area of violation: TSD - Financial Requirements
Date achieved compliance: 06/06/2007
Evaluation lead agency: State

Evaluation date: 05/24/2006
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 07/14/2005
Evaluation: NOT A SIGNIFICANT NON-COMPLIER
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 06/27/2005
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 06/07/2005
Evaluation: FINANCIAL RECORD REVIEW
Area of violation: TSD - Financial Requirements
Date achieved compliance: 12/13/2005
Evaluation lead agency: State

Evaluation date: 04/23/2004
Evaluation: FINANCIAL RECORD REVIEW
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 04/20/2004
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Transporters - Manifest and Recordkeeping
Date achieved compliance: 07/14/2005
Evaluation lead agency: State

Evaluation date: 04/20/2004
Evaluation: SIGNIFICANT NON-COMPLIER
Area of violation: Not reported

MAIN STREET CENTER (Continued) **1000102032**

Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 04/20/2004
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: TSD - General Facility Standards
Date achieved compliance: 07/14/2005
Evaluation lead agency: State

Evaluation date: 04/20/2004
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - Manifest
Date achieved compliance: 07/14/2005
Evaluation lead agency: State

Evaluation date: 02/14/2003
Evaluation: FINANCIAL RECORD REVIEW
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 02/04/2003
Evaluation: NOT A SIGNIFICANT NON-COMPLIER
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 01/29/2003
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - Pre-transport
Date achieved compliance: 02/04/2003
Evaluation lead agency: State

Evaluation date: 01/29/2003
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: TSD - Tank System Standards
Date achieved compliance: 02/04/2003
Evaluation lead agency: State

Evaluation date: 01/29/2003
Evaluation: SIGNIFICANT NON-COMPLIER
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 02/27/2002
Evaluation: FINANCIAL RECORD REVIEW
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 02/15/2002
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 03/19/2002
Evaluation lead agency: State

MAIN STREET CENTER (Continued) **1000102032**

Evaluation date: 02/15/2002
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - Manifest
Date achieved compliance: 03/19/2002
Evaluation lead agency: State

Evaluation date: 02/15/2002
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: TSD - Contingency Plan and Emergency Procedures
Date achieved compliance: 03/19/2002
Evaluation lead agency: State

Evaluation date: 02/15/2002
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: TSD - Container Use and Management
Date achieved compliance: 03/19/2002
Evaluation lead agency: State

Evaluation date: 02/15/2002
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: TSD - General Facility Standards
Date achieved compliance: 03/19/2002
Evaluation lead agency: State

Evaluation date: 02/15/2002
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - Pre-transport
Date achieved compliance: 03/19/2002
Evaluation lead agency: State

Evaluation date: 11/02/2001
Evaluation: NOT A SIGNIFICANT NON-COMPLIER
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 01/02/2001
Evaluation: FINANCIAL RECORD REVIEW
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 12/18/2000
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: TSD - General Facility Standards
Date achieved compliance: 02/02/2001
Evaluation lead agency: State

Evaluation date: 12/18/2000
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: TSD - Contingency Plan and Emergency Procedures
Date achieved compliance: 02/02/2001
Evaluation lead agency: State

Evaluation date: 12/18/2000
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General

MAIN STREET CENTER (Continued) **1000102032**

Date achieved compliance: 02/02/2001
Evaluation lead agency: State

Evaluation date: 12/18/2000
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - Manifest
Date achieved compliance: 02/02/2001
Evaluation lead agency: State

Evaluation date: 12/18/2000
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: TSD - Tank System Standards
Date achieved compliance: 02/02/2001
Evaluation lead agency: State

Evaluation date: 12/18/2000
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Transporters - General
Date achieved compliance: 11/02/2001
Evaluation lead agency: State

Evaluation date: 12/18/2000
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: TSD IS-Chemical, Physical, AND Treatment
Date achieved compliance: 11/02/2001
Evaluation lead agency: State

Evaluation date: 12/18/2000
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: TSD - Tank System Standards
Date achieved compliance: 11/02/2001
Evaluation lead agency: State

Evaluation date: 12/18/2000
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: TSD - Preparedness and Prevention
Date achieved compliance: 11/02/2001
Evaluation lead agency: State

Evaluation date: 02/22/2000
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - Records/Reporting
Date achieved compliance: 03/13/2000
Evaluation lead agency: State

Evaluation date: 02/22/2000
Evaluation: SIGNIFICANT NON-COMPLIER
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 02/22/2000
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 04/11/2001
Evaluation lead agency: State

MAIN STREET CENTER (Continued) **1000102032**

Evaluation date: 02/22/2000
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: TSD - Container Use and Management
Date achieved compliance: 03/13/2000
Evaluation lead agency: State

Evaluation date: 09/29/1998
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: TSD - General Facility Standards
Date achieved compliance: 11/04/1998
Evaluation lead agency: State

Evaluation date: 09/29/1998
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: TSD - Preparedness and Prevention
Date achieved compliance: 05/11/1999
Evaluation lead agency: State

Evaluation date: 09/29/1998
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: TSD - Manifest/Records/Reporting
Date achieved compliance: 05/11/1999
Evaluation lead agency: State

Evaluation date: 09/29/1998
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: TSD - General Facility Standards
Date achieved compliance: 05/11/1999
Evaluation lead agency: State

Evaluation date: 09/29/1998
Evaluation: SIGNIFICANT NON-COMPLIER
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 09/29/1998
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: TSD - General
Date achieved compliance: 11/04/1998
Evaluation lead agency: State

Evaluation date: 05/22/1996
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: TSD - Financial Requirements
Date achieved compliance: 11/22/1996
Evaluation lead agency: State

Evaluation date: 05/22/1996
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: TSD - General
Date achieved compliance: 06/22/1996
Evaluation lead agency: State

Evaluation date: 03/30/1994
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Transporters - General

MAIN STREET CENTER (Continued) **1000102032**

Date achieved compliance: 03/16/1996
Evaluation lead agency: State

Evaluation date: 03/30/1994
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 03/16/1996
Evaluation lead agency: State

Evaluation date: 03/30/1994
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: TSD - General
Date achieved compliance: 03/16/1996
Evaluation lead agency: State

Evaluation date: 03/30/1994
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: TSD - Financial Requirements
Date achieved compliance: 10/19/1994
Evaluation lead agency: State

Evaluation date: 06/18/1986
Evaluation: FINANCIAL RECORD REVIEW
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 02/27/1986
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 02/27/1986
Evaluation: NON-FINANCIAL RECORD REVIEW
Area of violation: Generators - General
Date achieved compliance: 04/25/1986
Evaluation lead agency: State

CERC-NFRAP:
Site ID: 0904430
Federal Facility: Not a Federal Facility
NPL Status: Not on the NPL
Non NPL Status: NFRAP-Site does not qualify for the NPL based on existing information

CERCLIS-NFRAP Site Contact Details:
Contact Sequence ID: 13054603.00000
Person ID: 9271184.00000

Contact Sequence ID: 13289649.00000
Person ID: 13003854.00000

Contact Sequence ID: 13295244.00000
Person ID: 13003858.00000

Contact Sequence ID: 13301102.00000
Person ID: 13004003.00000

MAIN STREET CENTER (Continued) **1000102032**

CERCLIS-NFRAP Assessment History:

Action:	DISCOVERY
Date Started:	Not reported
Date Completed:	04/02/1992
Priority Level:	Not reported
Action:	ARCHIVE SITE
Date Started:	Not reported
Date Completed:	05/28/1993
Priority Level:	Not reported
Action:	PRELIMINARY ASSESSMENT
Date Started:	Not reported
Date Completed:	05/28/1993
Priority Level:	NFRAP-Site does not qualify for the NPL based on existing information

CORRACTS:

EPA ID:	CAD000633305
EPA Region:	09
Area Name:	ENTIRE FACILITY
Actual Date:	04/22/1993
Action:	CA049PA
NAICS Code(s):	221121 Electric Bulk Power Transmission and Control
Original schedule date:	Not reported
Schedule end date:	Not reported
EPA ID:	CAD000633305
EPA Region:	09
Area Name:	ENTIRE FACILITY
Actual Date:	04/22/1993
Action:	CA050 - RFA Completed
NAICS Code(s):	221121 Electric Bulk Power Transmission and Control
Original schedule date:	Not reported
Schedule end date:	Not reported
EPA ID:	CAD000633305
EPA Region:	09
Area Name:	ENTIRE FACILITY
Actual Date:	07/12/1993
Action:	CA075ME - CA Prioritization, Facility or area was assigned a medium corrective action priority
NAICS Code(s):	221121 Electric Bulk Power Transmission and Control
Original schedule date:	Not reported
Schedule end date:	Not reported
EPA ID:	CAD000633305
EPA Region:	09
Area Name:	ENTIRE FACILITY
Actual Date:	07/12/1993
Action:	CA225YE - Stabilization Measures Evaluation, This facility ,is amenable to stabilization activity based on the, status of corrective action work at the facility, technical factors, the degree of risk,

MAIN STREET CENTER (Continued) **1000102032**

timing considerations and administrative considerations
NAICS Code(s): 221121
Electric Bulk Power Transmission and Control
Original schedule date: Not reported
Schedule end date: Not reported

2020 CORRECTIVE ACTION:
EPA ID: CAD000633305
Region: 9
Action: Not reported

HWP:
EPA Id: CAD000633305
Latitude: 34.066884
Longitude: -118.227545
Facility Type: HAZ WASTE - OPERATING PERMIT
Cleanup Status: Not reported
Region: SOUTHERN CALIFORNIA PERMITS AND CORRECTIVE ACTION
Permit Maintenance Lead: Not reported
Permit Renewal Lead: Not reported
Corrective Action Lead: RODNEY COLLINS
Supervisor: Not reported
Site Code: 300425, 530028
Assembly District: 45
Senate District: 22
Public Information Officer: Not reported
Facility Status: Active facility - RCRA units undergoing Closure: A hazardous waste facility permit, issued to LADWP on August 10, 1983, allowed the facility to store up to 60 55-gallon drums of hazardous waste. The site was first acquired by LADWP in 1915 which was used as the service maintenance for several LADWP s operations. Prior to the acquisition, the site was for residential use with exception of the northeastern portion of the facility which was occupied by a former manufactured gas company. LADWP did not renew the permit and requested the closure of the hazardous waste storage unit. Closure plan was implemented and investigation detected up to 2,900 ppb of PCB and 1,740 ppb of arsenic in the concrete chip and core samples, 1,320 mg/kg of TEPH, 114 ug/kg of PCE, 70.8 ug/kg of DCE, and 20,000 ug/Kg of PCB in the soil. Several metals (As, Ba, Cd, Co, Pb, Ni, Se, TI, V, Hg) exceeding the clean up criteria were also detected. Small amount of VOCs was also detected in soil gas samples. Based on the soil sample results, it is likely the hazardous waste storage unit cannot meet the clean closure criteria. LADWP is currently preparing a closure certification report for the hazardous waste storage unit.
Site History: Not reported

HWP:
EPA Id: CAD000633305
Unit Names: CONTAIN1
Event Description: Received Withdrawal Request
Actual Date: 2000-06-09 00:00:00
Doc Comments: Not reported

EPA Id: CAD000633305
Unit Names: CONTAIN1
Event Description: Part B Call-In
Actual Date: 1982-11-29 00:00:00

MAIN STREET CENTER (Continued) **1000102032**

Doc Comments: Not reported

EPA Id: CAD000633305
Unit Names: CONTAIN1
Event Description: Final Permit Effective
Actual Date: 1983-08-19 00:00:00
Doc Comments: Not reported

EPA Id: CAD000633305
Unit Names: CONTAIN1
Event Description: Initial Submittal
Actual Date: 1980-11-19 00:00:00
Doc Comments: Not reported

EPA Id: CAD000633305
Unit Names: CONTAIN1
Event Description: Determined To Be Complete and Technically Adequate
Actual Date: 1983-08-05 00:00:00
Doc Comments: Not reported

EPA Id: CAD000633305
Unit Names: CONTAIN1
Event Description: Determined To Be Complete and Technically Adequate
Actual Date: 1996-12-30 00:00:00
Doc Comments: Not reported

EPA Id: CAD000633305
Unit Names: CONTAIN1
Event Description: Draft Permit Issued
Actual Date: 1983-05-06 00:00:00
Doc Comments: Not reported

EPA Id: CAD000633305
Unit Names: CONTAIN1
Event Description: CLASS 2 MODIFICATION
Actual Date: 2002-12-20 00:00:00
Doc Comments: Not reported

HWP:
EPA Id: CAD000633305
Unit Names: CONTAIN1
Event Description: Notice of Deficiency - Closure Plan
Actual Date: 2000-11-09 00:00:00
Doc Comments: Not reported

CA FINANCIAL ASSURANCE 1:
EPA ID Number: CAD000633305
Closure Mechanism: FT
Closure Amount: 94,853
Post Clousure Mechanism: Not reported
Post Clousure Amount: Not reported
Corrective Action Mechanism: Not reported
Corrective Action Amount: Not reported
Sudden Mecahanism Type: FT
Sudden Mecahanism Amount: 2,000,000

MAIN STREET CENTER (Continued) **1000102032**

Non Sudden Mecahanism Type: Not reported
Non Sudden Mecahanism Amount: Not reported

K40 **GENERAL SERVICE HQ** **WDS** **S101583196**
SSW **1630 N MAIN ST** **CA FID UST** **N/A**
1/8-1/4 **LOS ANGELES, CA 90012** **SWEEPS UST**
0.224 mi. **EMI**
1185 ft. **Site 3 of 8 in cluster K**

Relative:
Lower

Actual:
301 ft.

CA WDS:

Facility ID:	4 19I004623
Facility Type:	Industrial - Facility that treats and/or disposes of liquid or semisolid wastes from any servicing, producing, manufacturing or processing operation of whatever nature, including mining, gravel washing, geothermal operations, air conditioning, ship building and repairing, oil production, storage and disposal operations, water pumping.
Facility Status:	Active - Any facility with a continuous or seasonal discharge that is under Waste Discharge Requirements.
NPDES Number:	CAS000001 The 1st 2 characters designate the state. The remaining 7 are assigned by the Regional Board
Subregion:	4
Facility Telephone:	2133670279
Facility Contact:	DAVE COTA
Agency Name:	LOS ANGELES WATER & POWER
Agency Address:	111 N Hope St Ste 1213
Agency City,St,Zip:	Los Angeles 900122607
Agency Contact:	SUSAN DAMRON
Agency Telephone:	2133670279
Agency Type:	City
SIC Code:	0
SIC Code 2:	Not reported
Primary Waste:	Not reported
Primary Waste Type:	Not reported
Secondary Waste:	Not reported
Secondary Waste Type:	Not reported
Design Flow:	0
Baseline Flow:	0
Reclamation:	Not reported
POTW:	Not reported
Treat To Water:	Minor Threat to Water Quality. A violation of a regional board order should cause a relatively minor impairment of beneficial uses compared to a major or minor threat. Not: All nurds without a TTWQ will be considered a minor threat to water quality unless coded at a higher Level. A Zero (0) may be used to code those NURDS that are found to represent no threat to water quality.
Complexity:	Category C - Facilities having no waste treatment systems, such as cooling water dischargers or thosewho must comply through best management practices, facilities with passive waste treatment and disposal systems, such as septic systems with subsurface disposal, or dischargers having waste storage systems with land disposal such as dairy waste ponds.
Facility ID:	4 19I004623
Facility Type:	Other - Does not fall into the category of Municipal/Domestic, Industrial, Agricultural or Solid Waste (Class I, II or III)
Facility Status:	Active - Any facility with a continuous or seasonal discharge that is under Waste Discharge Requirements.

GENERAL SERVICE HQ (Continued) **S101583196**

NPDES Number:	CAS000001 The 1st 2 characters designate the state. The remaining 7 are assigned by the Regional Board
Subregion:	4
Facility Telephone:	2133670279
Facility Contact:	DAVE COTA
Agency Name:	LOS ANGELES WATER AND POWER
Agency Address:	Not reported
Agency City,St,Zip:	0
Agency Contact:	Not reported
Agency Telephone:	Not reported
Agency Type:	Private
SIC Code:	4911
SIC Code 2:	Not reported
Primary Waste:	Not reported
Primary Waste Type:	Not reported
Secondary Waste:	Not reported
Secondary Waste Type:	Not reported
Design Flow:	0
Baseline Flow:	0
Reclamation:	No reclamation requirements associated with this facility.
POTW:	The facility is not a POTW.
Treat To Water:	Minor Threat to Water Quality. A violation of a regional board order should cause a relatively minor impairment of beneficial uses compared to a major or minor threat. Not: All nurds without a TTWQ will be considered a minor threat to water quality unless coded at a higher Level. A Zero (0) may be used to code those NURDS that are found to represent no threat to water quality.
Complexity:	Category C - Facilities having no waste treatment systems, such as cooling water dischargers or thosewho must comply through best management practices, facilities with passive waste treatment and disposal systems, such as septic systems with subsurface disposal, or dischargers having waste storage systems with land disposal such as dairy waste ponds.

CA FID UST:

Facility ID:	19003032
Regulated By:	UTNKA
Regulated ID:	Not reported
Cortese Code:	Not reported
SIC Code:	Not reported
Facility Phone:	2134817962
Mail To:	Not reported
Mailing Address:	1630 N MAIN ST
Mailing Address 2:	Not reported
Mailing City,St,Zip:	LOS ANGELES 900120000
Contact:	Not reported
Contact Phone:	Not reported
DUNs Number:	Not reported
NPDES Number:	Not reported
EPA ID:	Not reported
Comments:	Not reported
Status:	Active

SWEEPS UST:

Status:	A
Comp Number:	3768

GENERAL SERVICE HQ (Continued) **S101583196**

Number:	4
Board Of Equalization:	Not reported
Ref Date:	03-10-93
Act Date:	03-10-93
Created Date:	02-29-88
Tank Status:	Not reported
Owner Tank Id:	Not reported
Swrcb Tank Id:	Not reported
Actv Date:	Not reported
Capacity:	Not reported
Tank Use:	Not reported
Stg:	Not reported
Content:	Not reported
Number Of Tanks:	Not reported

EMI:

Year:	1987
County Code:	19
Air Basin:	SC
Facility ID:	3875
Air District Name:	SC
SIC Code:	4922
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	13
Reactive Organic Gases Tons/Yr:	12
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	1990
County Code:	19
Air Basin:	SC
Facility ID:	3875
Air District Name:	SC
SIC Code:	4941
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	28
Reactive Organic Gases Tons/Yr:	15
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	1995
County Code:	19
Air Basin:	SC
Facility ID:	3875
Air District Name:	SC
SIC Code:	4941
Air District Name:	SOUTH COAST AQMD

GENERAL SERVICE HQ (Continued) **S101583196**

Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	21
Reactive Organic Gases Tons/Yr:	13
Carbon Monoxide Emissions Tons/Yr:	1
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	1996
County Code:	19
Air Basin:	SC
Facility ID:	3875
Air District Name:	SC
SIC Code:	4941
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	4
Reactive Organic Gases Tons/Yr:	3
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	1997
County Code:	19
Air Basin:	SC
Facility ID:	3875
Air District Name:	SC
SIC Code:	4941
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	8
Reactive Organic Gases Tons/Yr:	7
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	1998
County Code:	19
Air Basin:	SC
Facility ID:	3875
Air District Name:	SC
SIC Code:	4941
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	8
Reactive Organic Gases Tons/Yr:	7
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0

GENERAL SERVICE HQ (Continued) **S101583196**

SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0
Year:	1999
County Code:	19
Air Basin:	SC
Facility ID:	3875
Air District Name:	SC
SIC Code:	4941
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	8
Reactive Organic Gases Tons/Yr:	7
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0
Year:	2000
County Code:	19
Air Basin:	SC
Facility ID:	3875
Air District Name:	SC
SIC Code:	4941
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	8
Reactive Organic Gases Tons/Yr:	7
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0
Year:	2001
County Code:	19
Air Basin:	SC
Facility ID:	3875
Air District Name:	SC
SIC Code:	4941
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	8
Reactive Organic Gases Tons/Yr:	7
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0
Year:	2006
County Code:	19

GENERAL SERVICE HQ (Continued) **S101583196**

Air Basin:	SC
Facility ID:	3875
Air District Name:	SC
SIC Code:	4910
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	2.610785974596243802
Reactive Organic Gases Tons/Yr:	1.49
Carbon Monoxide Emissions Tons/Yr:	.084
NOX - Oxides of Nitrogen Tons/Yr:	.312
SOX - Oxides of Sulphur Tons/Yr:	.001
Particulate Matter Tons/Yr:	.027
Part. Matter 10 Micrometers & Smllr Tons/Yr:	.02664

Year:	2007
County Code:	19
Air Basin:	SC
Facility ID:	3875
Air District Name:	SC
SIC Code:	4910
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	2.547055611703871253
Reactive Organic Gases Tons/Yr:	1.49
Carbon Monoxide Emissions Tons/Yr:	.084
NOX - Oxides of Nitrogen Tons/Yr:	.312
SOX - Oxides of Sulphur Tons/Yr:	.001
Particulate Matter Tons/Yr:	.027
Part. Matter 10 Micrometers & Smllr Tons/Yr:	.02664

K41 **MAIN STREET OIL DEPOT** **HIST CORTESE** **S101297113**
SSW **1630 MAIN ST N** **LUST** **N/A**
1/8-1/4 **LOS ANGELES, CA 90012** **VCP**
0.224 mi. **ENVIROSTOR**
1185 ft. **Site 4 of 8 in cluster K**

Relative:
Lower

Actual:
301 ft.

CORTESE:

Region:	CORTESE
Facility County Code:	19
Reg By:	LTNKA
Reg Id:	900120125

LUST:

Region:	STATE
Global Id:	T0603700511
Latitude:	34.0663792
Longitude:	-118.2279897
Case Type:	LUST Cleanup Site
Status:	Open - Remediation
Status Date:	01/21/1997
Lead Agency:	DEPARTMENT OF TOXIC SUBSTANCES CONTROL
Case Worker:	Not reported
Local Agency:	LOS ANGELES, CITY OF
RB Case Number:	Not reported
LOC Case Number:	900120125

MAIN STREET OIL DEPOT (Continued) **S101297113**

File Location: Local Agency
Potential Media Affect: Other Groundwater (uses other than drinking water)
Potential Contaminants of Concern: Other Solvent or Non-Petroleum Hydrocarbon
Site History: Not reported

Click here to access the California GeoTracker records for this facility:

LUST:
Global Id: T0603700511
Contact Type: Regional Board Caseworker
Contact Name: YUE RONG
Organization Name: LOS ANGELES RWQCB (REGION 4)
Address: 320 W. 4TH ST., SUITE 200
City: Los Angeles
Email: yrong@waterboards.ca.gov
Phone Number: Not reported

LUST:
Global Id: T0603700511
Action Type: Other
Date: 01/01/1950
Action: Leak Reported

LUST REG 4:
Region: 4
Regional Board: 04
County: Los Angeles
Facility Id: Not reported
Status: Remedial action (cleanup) Underway
Substance: Hydrocarbons
Substance Quantity: Not reported
Local Case No: 900120125
Case Type: Groundwater
Abatement Method Used at the Site: Remove Free Product
Global ID: T0603700511
W Global ID: W0605100649
Staff: TOX
Local Agency: 19050
Cross Street: Not reported
Enforcement Type: Not reported
Date Leak Discovered: Not reported
Date Leak First Reported: 1/3/1991
Date Leak Record Entered: 2/19/1991
Date Confirmation Began: Not reported
Date Leak Stopped: Not reported
Date Case Last Changed on Database: 4/1/1998
Date the Case was Closed: Not reported
How Leak Discovered: Not reported
How Leak Stopped: Not reported
Cause of Leak: UNK
Leak Source: UNK
Operator: Not reported
Water System: DAVE GRIFFITH L A D W P
Well Name: Not reported
Approx. Dist To Production Well (ft): 4835.926976286361946589409 4528
Source of Cleanup Funding: UNK

MAIN STREET OIL DEPOT (Continued) **S101297113**

Preliminary Site Assessment Workplan Submitted: Not reported
Preliminary Site Assessment Began: 1/3/1991
Pollution Characterization Began: 7/6/1992
Remediation Plan Submitted: Not reported
Remedial Action Underway: 1/21/1997
Post Remedial Action Monitoring Began: Not reported
Enforcement Action Date: Not reported
Historical Max MTBE Date: Not reported
Hist Max MTBE Conc in Groundwater: Not reported
Hist Max MTBE Conc in Soil: Not reported
Significant Interim Remedial Action Taken: Yes
GW Qualifier: Not reported
Soil Qualifier: Not reported
Organization: Not reported
Owner Contact: Not reported
Responsible Party: DWP
RP Address: P.O. BOX 51111, LOS ANGELES, CA 90051-0100
Program: Not reported
Lat/Long: 34.0663792 / -1
Local Agency Staff: PEJ
Beneficial Use: Not reported
Priority: Not reported
Cleanup Fund Id: Not reported
Suspended: Not reported
Assigned Name: 2600649-001GEN
Summary: 3/24/98 TRANSFERRED TO DTSC; 4/13/98 1ST QTR 98 GW MON & FP RECOVERY RPT

VCP:
Facility ID: 19490230
Site Type: Voluntary Cleanup
Site Type Detail: Voluntary Cleanup
Site Mgmt. Req.: NONE SPECIFIED
Acres: 3
National Priorities List: NO
Cleanup Oversight Agencies: SMBRP
Lead Agency: SMBRP
Lead Agency Description: DTSC - Site Mitigation And Brownfield Reuse Program
Project Manager: Not reported
Supervisor: Rita Kamat
Division Branch: Cleanup Chatsworth
Site Code: 300450
Assembly: 51
Senate: 24
Special Programs Code: Voluntary Cleanup Program
Status: Inactive - Needs Evaluation
Status Date: 07/25/2008
Restricted Use: NO
Funding: Responsible Party
Lat/Long: 34.06694 / -118.2272
APN: NONE SPECIFIED
Past Use: HAZARDOUS WASTE STORAGE - TANKS/CONTAINERS, MANUFACTURED GAS PLANT
Potential COC: 10003, 10009, 10064, 10067, 10097, 10196, 10198, 10199, 20009, 20011, 20027, 30160
Confirmed COC: NONE SPECIFIED
Potential Description: OTH, SOIL
Alias Name: ECONOMIC GAS COMPANY

MAIN STREET OIL DEPOT (Continued) **S101297113**

Alias Type:	Alternate Name
Alias Name:	LOS ANGELES DEPARTMENT OF WATER & POWER
Alias Type:	Alternate Name
Alias Name:	LOS ANGELES IV MGP
Alias Type:	Alternate Name
Alias Name:	LOS ANGELES MAIN STREET MGP
Alias Type:	Alternate Name
Alias Name:	LOS ANGELES TOWNE GAS SITE
Alias Type:	Alternate Name
Alias Name:	PEOPLE'S GAS & COKE COMPANY
Alias Type:	Alternate Name
Alias Name:	SOUTHERN CALIF GAS CO - LA MAIN ST
Alias Type:	Alternate Name
Alias Name:	SOUTHERN CALIFORNIA GAS
Alias Type:	Alternate Name
Alias Name:	SOUTHERN CALIFORNIA GAS CO. - LA MAIN ST
Alias Type:	Alternate Name
Alias Name:	SOUTHERN CALIFORNIA GAS COMPANY
Alias Type:	Alternate Name
Alias Name:	ST. JOHNS STREET MGP
Alias Type:	Alternate Name
Alias Name:	110000609155
Alias Type:	EPA (FRS #)
Alias Name:	110033615666
Alias Type:	EPA (FRS #)
Alias Name:	T0603700511
Alias Type:	GeoTracker Global ID
Alias Name:	300450
Alias Type:	Project Code (Site Code)
Alias Name:	19490230
Alias Type:	Envirostor ID Number

Completed Info:

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Voluntary Cleanup Agreement
Completed Date:	05/04/2001
Comments:	Not reported

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Preliminary Endangerment Assessment Report
Completed Date:	05/02/1995
Comments:	The Department completed review of the PEA report. Based on the information provided in the PEA, the site does not constitute an immediate threat that would require an expedited response action. However, DTSC recommends furthe action, in that the current asphalt must be maintained and a deed restriction notification be placed on the site. DTSC considers the PEA complete.

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Site Screening
Completed Date:	10/28/1993
Comments:	The Department received a notice of intent to initiate a PEA dated September 27, 1993. Manufactured Gas Plant (MGP) was operated at the site from approximately 1906 to 1919??? The MGP operations ceased at the site on 1919? when the Southern California Gas Company acquired

MAIN STREET OIL DEPOT (Continued) **S101297113**

the MGP properties. In 1922 Los Angeles City Water and Power acquired the property and dismantled the gas plant. The hazardous wastes found at the former MGP sites includes PAHs, Cyanides, TPHs, BTEX, Sulphides/sulfates, and Metals. Due to the evidence of hazardous wastes in the other MGP sites, the Department recommends a PEA. The Department completed review of the sampling plan. RP is investigating the site.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Site Characterization Workplan
Completed Date: 11/27/2004
Comments: DTSC recommended to revise the Sampling Plan and prepare Quality Assurance Plan.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Remedial Investigation Report
Completed Date: 03/01/2007
Comments: Not reported

Future Area Name: Not reported
Future Sub Area Name: Not reported
Future Document Type: Not reported
Future Due Date: Not reported
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported

ENVIROSTOR:
Site Type: Voluntary Cleanup
Site Type Detailed: Voluntary Cleanup
Acres: 3
NPL: NO
Regulatory Agencies: SMBRP
Lead Agency: SMBRP
Program Manager: Not reported
Supervisor: Rita Kamat
Division Branch: Cleanup Chatsworth
Facility ID: 19490230
Site Code: 300450
Assembly: 51
Senate: 24
Special Program: Voluntary Cleanup Program
Status: Inactive - Needs Evaluation
Status Date: 07/25/2008
Restricted Use: NO
Site Mgmt. Req.: NONE SPECIFIED
Funding: Responsible Party
Latitude: 34.06694
Longitude: -118.2272
APN: NONE SPECIFIED
Past Use: HAZARDOUS WASTE STORAGE - TANKS/CONTAINERS, MANUFACTURED GAS PLANT
Potential COC: 10003, 10009, 10064, 10067, 10097, 10196, 10198, 10199, 20009, 20011, 20027, 30160

MAIN STREET OIL DEPOT (Continued) **S101297113**

Confirmed COC: NONE SPECIFIED
Potential Description: OTH, SOIL
Alias Name: ECONOMIC GAS COMPANY
Alias Type: Alternate Name
Alias Name: LOS ANGELES DEPARTMENT OF WATER & POWER
Alias Type: Alternate Name
Alias Name: LOS ANGELES IV MGP
Alias Type: Alternate Name
Alias Name: LOS ANGELES MAIN STREET MGP
Alias Type: Alternate Name
Alias Name: LOS ANGELES TOWNE GAS SITE
Alias Type: Alternate Name
Alias Name: PEOPLE'S GAS & COKE COMPANY
Alias Type: Alternate Name
Alias Name: SOUTHERN CALIF GAS CO - LA MAIN ST
Alias Type: Alternate Name
Alias Name: SOUTHERN CALIFORNIA GAS
Alias Type: Alternate Name
Alias Name: SOUTHERN CALIFORNIA GAS CO. - LA MAIN ST
Alias Type: Alternate Name
Alias Name: SOUTHERN CALIFORNIA GAS COMPANY
Alias Type: Alternate Name
Alias Name: ST. JOHNS STREET MGP
Alias Type: Alternate Name
Alias Name: 110000609155
Alias Type: EPA (FRS #)
Alias Name: 110033615666
Alias Type: EPA (FRS #)
Alias Name: T0603700511
Alias Type: GeoTracker Global ID
Alias Name: 300450
Alias Type: Project Code (Site Code)
Alias Name: 19490230
Alias Type: Envirostor ID Number

Completed Info:
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Voluntary Cleanup Agreement
Completed Date: 05/04/2001
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Preliminary Endangerment Assessment Report
Completed Date: 05/02/1995
Comments: The Department completed review of the PEA report. Based on the information provided in the PEA, the site does not constitute an immediate threat that would require an expedited response action. However, DTSC recommends furthe action, in that the current asphalt must be maintained and a deed restriction notification be placed on the site. DTSC considers the PEA complete.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Site Screening
Completed Date: 10/28/1993
Comments: The Department received a notice of intent to initiate a PEA dated

MAIN STREET OIL DEPOT (Continued) **S101297113**

September 27, 1993. Manufactured Gas Plant (MGP) was operated at the site from approximately 1906 to 1919??? The MGP operations ceased at the site on 1919? when the Southern California Gas Company acquired the MGP properties. In 1922 Los Angeles City Water and Power acquired the property and dismantled the gas plant. The hazardous wastes found at the former MGP sites includes PAHs, Cyanides, TPHs, BTEX, Sulphides/sulfates, and Metals. Due to the evidence of hazardous wastes in the other MGP sites, the Department recommends a PEA. The Department completed review of the sampling plan. RP is investigating the site.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Site Characterization Workplan
Completed Date: 11/27/2004
Comments: DTSC recommended to revise the Sampling Plan and prepare Quality Assurance Plan.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Remedial Investigation Report
Completed Date: 03/01/2007
Comments: Not reported

Future Area Name: Not reported
Future Sub Area Name: Not reported
Future Document Type: Not reported
Future Due Date: Not reported
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported

K42 **MAIN STREET** **UST** **U003780145**
SSW **1630 N MAIN ST** **N/A**
1/8-1/4 **LOS ANGELES, CA 90012**
0.224 mi.
1185 ft. **Site 5 of 8 in cluster K**

Relative:
Lower

Actual:
301 ft.

UST:
Facility ID: 23628
Latitude: 34.06714
Longitude: -118.22691

K43 **LA DEPARTMENT WATER & POWER** **HAZNET** **S107144525**
SSW **1630 N MAIN ST STE 16** **ENVIROSTOR** **N/A**
1/8-1/4 **LOS ANGELES, CA 90012**
0.224 mi.
1185 ft. **Site 6 of 8 in cluster K**

Relative:
Lower

Actual:
301 ft.

HAZNET:
Year: 2010
Gepaid: CAD000633305
Contact: MARK J SEDLACEK
Telephone: 2133670403

LA DEPARTMENT WATER & POWER (Continued) **S107144525**

Mailing Name:	Not reported
Mailing Address:	111 N HOPE ST RM 1050
Mailing City,St,Zip:	LOS ANGELES, CA 900122607
Gen County:	Not reported
TSD EPA ID:	CAT080013352
TSD County:	Not reported
Waste Category:	Waste oil and mixed oil
Disposal Method:	OTHER RECOVERY OF RECLAMATION FOR REUSE INCLUDING ACID REGENERATION, ORGANICS RECOVERY ECT
Tons:	1.14
Facility County:	Los Angeles

Year:	2010
Gepaid:	CAD000633305
Contact:	MARK J SEDLACEK
Telephone:	2133670403
Mailing Name:	Not reported
Mailing Address:	111 N HOPE ST RM 1050
Mailing City,St,Zip:	LOS ANGELES, CA 900122607
Gen County:	Not reported
TSD EPA ID:	CAT080013352
TSD County:	Not reported
Waste Category:	Waste oil and mixed oil
Disposal Method:	OTHER RECOVERY OF RECLAMATION FOR REUSE INCLUDING ACID REGENERATION, ORGANICS RECOVERY ECT
Tons:	3.04
Facility County:	Los Angeles

Year:	2010
Gepaid:	CAD000633305
Contact:	MARK J SEDLACEK
Telephone:	2133670403
Mailing Name:	Not reported
Mailing Address:	111 N HOPE ST RM 1050
Mailing City,St,Zip:	LOS ANGELES, CA 900122607
Gen County:	Not reported
TSD EPA ID:	CAD980675276
TSD County:	Not reported
Waste Category:	Asbestos containing waste
Disposal Method:	LANDFILL OR SURFACE IMPOUNDMENT THAT WILL BE CLOSED AS LANDFILL(TO INCLUDE ON-SITE TREATMENT AND/OR STABILIZATION)
Tons:	20
Facility County:	Los Angeles

Year:	2010
Gepaid:	CAD000633305
Contact:	MARK J SEDLACEK
Telephone:	2133670403
Mailing Name:	Not reported
Mailing Address:	111 N HOPE ST RM 1050
Mailing City,St,Zip:	LOS ANGELES, CA 900122607
Gen County:	Not reported
TSD EPA ID:	CAT000613935
TSD County:	Not reported
Waste Category:	Aqueous solution with total organic residues less than 10 percent
Disposal Method:	STORAGE, BULKING, AND/OR TRANSFER OFF SITE--NO TREATMENT/REOVERY (H010-H129) OR (H131-H135)

LA DEPARTMENT WATER & POWER (Continued) **S107144525**

Tons: 0.084
Facility County: Los Angeles

Year: 2010
Gepaid: CAD000633305
Contact: MARK J SEDLACEK
Telephone: 2133670403
Mailing Name: Not reported
Mailing Address: 111 N HOPE ST RM 1050
Mailing City,St,Zip: LOS ANGELES, CA 900122607
Gen County: Not reported
TSD EPA ID: CAD980675276
TSD County: Not reported
Waste Category: Other inorganic solid waste
Disposal Method: LANDFILL OR SURFACE IMPOUNDMENT THAT WILL BE CLOSED AS LANDFILL(TO INCLUDE ON-SITE TREATMENT AND/OR STABILIZATION)
Tons: 21.07
Facility County: Los Angeles

Click this hyperlink while viewing on your computer to access
599 additional CA_HAZNET: record(s) in the EDR Site Report.

ENVIROSTOR:
Site Type: Corrective Action
Site Type Detailed: Corrective Action
Acres: 25
NPL: NO
Regulatory Agencies: SMBRP
Lead Agency: MBR
Program Manager: Chand Sultana
Supervisor: Allan Plaza
Division Branch: Cleanup Chatsworth
Facility ID: 80001337
Site Code: 530028
Assembly: 51
Senate: 24
Special Program: Not reported
Status: Active
Status Date: 06/15/2009
Restricted Use: NO
Site Mgmt. Req.: NONE SPECIFIED
Funding: Not reported
Latitude: 34.06688
Longitude: -118.2275
APN: NONE SPECIFIED
Past Use: EQUIPMENT/INSTRUMENT REPAIR, FUEL - VEHICLE STORAGE/ REFUELING, HAZARDOUS WASTE STORAGE - TANKS/CONTAINERS, MANUFACTURED GAS PLANT, TRANSFORMER REPAIR, UTILITY - ELECTRIC, VEHICLE MAINTENANCE
Potential COC: 30001, 30067, 30108, 30153, 30154, 30013, 30014, 30407, 30515, 30549, 30587, 30018, 40001, 30022
Confirmed COC: 30001,30549,30022,30067,30108,30153,30515,30407,30587,40001,30018, 30154,30013,30014
Potential Description: OTH, SED, SOIL, SV
Alias Name: LADWP MAIN ST
Alias Type: Alternate Name
Alias Name: CAD000633305
Alias Type: EPA Identification Number

LA DEPARTMENT WATER & POWER (Continued) **S107144525**

Alias Name: 300425
Alias Type: Project Code (Site Code)
Alias Name: 530028
Alias Type: Project Code (Site Code)
Alias Name: 80001337
Alias Type: Envirostor ID Number

Completed Info:
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Annual Oversight Cost Estimate
Completed Date: 10/27/2009
Comments: Letter sent to RP.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: RCRA Facility Assessment Report
Completed Date: 04/22/1993
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Consent Order
Completed Date: 10/28/1998
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Interim Measures Questionnaire
Completed Date: 07/12/1993
Comments: Not reported

Completed Area Name: Building 11
Completed Sub Area Name: Not reported
Completed Document Type: RFI Workplan
Completed Date: 07/28/2010
Comments: RFI Workplan approved.

Completed Area Name: SWMU 1 - Former Hazardous Waste Storage Building
Completed Sub Area Name: Not reported
Completed Document Type: Technical Workplan
Completed Date: 03/10/2009
Comments: Final LADWP Workplan for HWSA (SWMU #1) Investigation Workplan

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Preliminary Assessment Report
Completed Date: 04/22/1993
Comments: Not reported

Future Area Name: SWMU 1 - Former Hazardous Waste Storage Building
Future Sub Area Name: Not reported
Future Document Type: Interim Measures Implementation Report
Future Due Date: 2012
Future Area Name: PROJECT WIDE
Future Sub Area Name: Not reported
Future Document Type: RFI Report
Future Due Date: 2012

LA DEPARTMENT WATER & POWER (Continued) **S107144525**

Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported

K44 **GENERAL STORES** **HIST UST U001560515**
SSW **1630 N MAIN ST** **HAZNET N/A**
1/8-1/4 **LOS ANGELES, CA 90012**
0.224 mi.
1185 ft. **Site 7 of 8 in cluster K**

Relative:
Lower

Actual:
301 ft.

HIST UST:
Region: STATE
Facility ID: 00000064897
Facility Type: Other
Other Type: WATER/ELECTRIC UTILI
Total Tanks: 0040
Contact Name: PAUL FONTES
Telephone: 2134816573
Owner Name: DEPARTMENT OF WATER AND POWER
Owner Address: 111 N. HOPE STREET
Owner City,St,Zip: LOS ANGELES, CA 90012

Tank Num: 001
Container Num: 0122/#2
Year Installed: 1926
Tank Capacity: 00010000
Tank Used for: PRODUCT
Type of Fuel: Not reported
Tank Construction: Not reported
Leak Detection: Visual

Tank Num: 001
Container Num: 0119/#1
Year Installed: 1926
Tank Capacity: 00001000
Tank Used for: PRODUCT
Type of Fuel: Not reported
Tank Construction: Not reported
Leak Detection: Visual

Tank Num: 002
Container Num: 0120/#10
Year Installed: Not reported
Tank Capacity: 00014000
Tank Used for: PRODUCT
Type of Fuel: Not reported
Tank Construction: Not reported
Leak Detection: None

Tank Num: 002
Container Num: 0123/#2 GA
Year Installed: 1963
Tank Capacity: 00010000
Tank Used for: PRODUCT
Type of Fuel: UNLEADED
Tank Construction: Not reported

GENERAL STORES (Continued) **U001560515**

Leak Detection: Stock Inventor

Tank Num: 003
Container Num: 0124/#3
Year Installed: 1926
Tank Capacity: 00010000
Tank Used for: PRODUCT
Type of Fuel: Not reported
Tank Construction: Not reported
Leak Detection: Visual

Tank Num: 003
Container Num: 0121/#11
Year Installed: Not reported
Tank Capacity: 00014000
Tank Used for: PRODUCT
Type of Fuel: Not reported
Tank Construction: Not reported
Leak Detection: None

Tank Num: 004
Container Num: 0125/#3 GA
Year Installed: 1963
Tank Capacity: 00010000
Tank Used for: PRODUCT
Type of Fuel: UNLEADED
Tank Construction: Not reported
Leak Detection: Stock Inventor

Tank Num: 005
Container Num: 0126/#4
Year Installed: 1926
Tank Capacity: 00010000
Tank Used for: PRODUCT
Type of Fuel: Not reported
Tank Construction: Not reported
Leak Detection: Visual

Tank Num: 006
Container Num: 0127/#5
Year Installed: 1926
Tank Capacity: 00010000
Tank Used for: PRODUCT
Type of Fuel: Not reported
Tank Construction: Not reported
Leak Detection: Visual

Tank Num: 007
Container Num: 0128/#6
Year Installed: Not reported
Tank Capacity: 00014000
Tank Used for: PRODUCT
Type of Fuel: Not reported
Tank Construction: Not reported
Leak Detection: Not reported

Tank Num: 008

GENERAL STORES (Continued) **U001560515**

Container Num: 0129/#7
Year Installed: Not reported
Tank Capacity: 00014000
Tank Used for: PRODUCT
Type of Fuel: Not reported
Tank Construction: Not reported
Leak Detection: None

Tank Num: 009
Container Num: 0130/#8
Year Installed: Not reported
Tank Capacity: 00014000
Tank Used for: PRODUCT
Type of Fuel: Not reported
Tank Construction: Not reported
Leak Detection: None

Tank Num: 010
Container Num: 0131/#9
Year Installed: Not reported
Tank Capacity: 00014000
Tank Used for: PRODUCT
Type of Fuel: Not reported
Tank Construction: Not reported
Leak Detection: None

Tank Num: 011
Container Num: 0132/14A S
Year Installed: Not reported
Tank Capacity: 00004500
Tank Used for: WASTE
Type of Fuel: Not reported
Tank Construction: 8 inches
Leak Detection: None

Tank Num: 012
Container Num: 0133/14A W
Year Installed: Not reported
Tank Capacity: 00001500
Tank Used for: WASTE
Type of Fuel: Not reported
Tank Construction: 8 inches
Leak Detection: None

Tank Num: 013
Container Num: 0134/A
Year Installed: Not reported
Tank Capacity: 00003000
Tank Used for: PRODUCT
Type of Fuel: Not reported
Tank Construction: Not reported
Leak Detection: None

Tank Num: 014
Container Num: 0135/8
Year Installed: Not reported
Tank Capacity: 00003000

GENERAL STORES (Continued) **U001560515**

Tank Used for: PRODUCT
Type of Fuel: Not reported
Tank Construction: Not reported
Leak Detection: None

Tank Num: 015
Container Num: 0136/BATT
Year Installed: 1962
Tank Capacity: 00003000
Tank Used for: WASTE
Type of Fuel: Not reported
Tank Construction: 8 inches
Leak Detection: None

Tank Num: 016
Container Num: 0137/C
Year Installed: Not reported
Tank Capacity: 00002000
Tank Used for: PRODUCT
Type of Fuel: Not reported
Tank Construction: Not reported
Leak Detection: None

Tank Num: 017
Container Num: 0138/CLARI
Year Installed: 1962
Tank Capacity: 00004000
Tank Used for: WASTE
Type of Fuel: Not reported
Tank Construction: 8 inches
Leak Detection: None

Tank Num: 018
Container Num: 0139/DIESE
Year Installed: 1963
Tank Capacity: 00001000
Tank Used for: PRODUCT
Type of Fuel: DIESEL
Tank Construction: Not reported
Leak Detection: Stock Inventor

Tank Num: 019
Container Num: 0140/DIESE
Year Installed: 1963
Tank Capacity: 00010000
Tank Used for: PRODUCT
Type of Fuel: DIESEL
Tank Construction: Not reported
Leak Detection: Stock Inventor

Tank Num: 020
Container Num: 0141/E-1
Year Installed: 1941
Tank Capacity: 00000000
Tank Used for: PRODUCT
Type of Fuel: Not reported
Tank Construction: 8 inches

GENERAL STORES (Continued) **U001560515**

Leak Detection: None

Tank Num: 021
Container Num: 0142/E-2
Year Installed: 1941
Tank Capacity: 00000000
Tank Used for: PRODUCT
Type of Fuel: Not reported
Tank Construction: 8 inches
Leak Detection: None

Tank Num: 022
Container Num: 0143/E-3
Year Installed: 1941
Tank Capacity: 00000000
Tank Used for: PRODUCT
Type of Fuel: Not reported
Tank Construction: Not reported
Leak Detection: None

Tank Num: 023
Container Num: 0144/E-4
Year Installed: 1941
Tank Capacity: 00000000
Tank Used for: PRODUCT
Type of Fuel: Not reported
Tank Construction: Not reported
Leak Detection: None

Tank Num: 024
Container Num: 0145/FORME
Year Installed: 1962
Tank Capacity: 00000000
Tank Used for: PRODUCT
Type of Fuel: Not reported
Tank Construction: Not reported
Leak Detection: None

Tank Num: 025
Container Num: 0146/HE1
Year Installed: 1941
Tank Capacity: 00000090
Tank Used for: PRODUCT
Type of Fuel: Not reported
Tank Construction: 8 inches
Leak Detection: None

Tank Num: 026
Container Num: 0147/HE 1
Year Installed: 1941
Tank Capacity: 00000090
Tank Used for: PRODUCT
Type of Fuel: Not reported
Tank Construction: 8 inches
Leak Detection: None

Tank Num: 027

GENERAL STORES (Continued) **U001560515**

Container Num: 0148/HE2
Year Installed: 1941
Tank Capacity: 00000270
Tank Used for: WASTE
Type of Fuel: Not reported
Tank Construction: 8 inches
Leak Detection: Not reported

Tank Num: 028
Container Num: 0149/MM1
Year Installed: 1941
Tank Capacity: 00000032
Tank Used for: PRODUCT
Type of Fuel: Not reported
Tank Construction: 8 inches
Leak Detection: None

Tank Num: 029
Container Num: 0150/MM 2
Year Installed: 1941
Tank Capacity: 00000692
Tank Used for: PRODUCT
Type of Fuel: Not reported
Tank Construction: 8 inches
Leak Detection: None

Tank Num: 030
Container Num: 0151/OLD O
Year Installed: Not reported
Tank Capacity: 00000110
Tank Used for: PRODUCT
Type of Fuel: Not reported
Tank Construction: Not reported
Leak Detection: None

Tank Num: 031
Container Num: 0152/OLD P
Year Installed: Not reported
Tank Capacity: 00001250
Tank Used for: PRODUCT
Type of Fuel: Not reported
Tank Construction: Not reported
Leak Detection: Not reported

Tank Num: 032
Container Num: 0153 PLATI
Year Installed: 1962
Tank Capacity: 00000000
Tank Used for: PRODUCT
Type of Fuel: Not reported
Tank Construction: Not reported
Leak Detection: None

Tank Num: 033
Container Num: 0154/SUMP
Year Installed: Not reported
Tank Capacity: 00000100

GENERAL STORES (Continued) **U001560515**

Tank Used for: PRODUCT
Type of Fuel: Not reported
Tank Construction: Not reported
Leak Detection: None

Tank Num: 034
Container Num: 0155/SUMP
Year Installed: Not reported
Tank Capacity: 00000100
Tank Used for: PRODUCT
Type of Fuel: Not reported
Tank Construction: Not reported
Leak Detection: None

Tank Num: 035
Container Num: 0156/SUMP
Year Installed: Not reported
Tank Capacity: 00000500
Tank Used for: PRODUCT
Type of Fuel: Not reported
Tank Construction: Not reported
Leak Detection: None

Tank Num: 036
Container Num: 0157/SUMP
Year Installed: Not reported
Tank Capacity: 00000500
Tank Used for: PRODUCT
Type of Fuel: Not reported
Tank Construction: Not reported
Leak Detection: Not reported

Tank Num: 037
Container Num: 0158/SUMP
Year Installed: Not reported
Tank Capacity: 00000750
Tank Used for: PRODUCT
Type of Fuel: Not reported
Tank Construction: Not reported
Leak Detection: Visual

Tank Num: 038
Container Num: 0159/SUMP
Year Installed: Not reported
Tank Capacity: 00000750
Tank Used for: PRODUCT
Type of Fuel: Not reported
Tank Construction: Not reported
Leak Detection: None

Tank Num: 039
Container Num: 0160/USED
Year Installed: 1963
Tank Capacity: 00000500
Tank Used for: WASTE
Type of Fuel: Not reported
Tank Construction: Not reported

GENERAL STORES (Continued) **U001560515**

Leak Detection: None

Tank Num: 040
Container Num: 0161/USED
Year Installed: 1963
Tank Capacity: 00000500
Tank Used for: WASTE
Type of Fuel: Not reported
Tank Construction: Not reported
Leak Detection: None

HAZNET:
Year: 2010
Gepaid: CAC002658007
Contact: FIONA ROCHE
Telephone: 3237734923
Mailing Name: Not reported
Mailing Address: 8445 ATLANTIC AVE
Mailing City,St,Zip: CUDAHY, CA 902015809
Gen County: Not reported
TSD EPA ID: CAD028409019
TSD County: Not reported
Waste Category: Unspecified oil-containing waste
Disposal Method: DISCHARGE TO SEWER/POTW OR NPDES(WITH PRIOR STORAGE--WITH OR WITHOUT TREATMENT)
Tons: 11.676
Facility County: Los Angeles

Year: 2010
Gepaid: CAC002658007
Contact: FIONA ROCHE
Telephone: 3237734923
Mailing Name: Not reported
Mailing Address: 8445 ATLANTIC AVE
Mailing City,St,Zip: CUDAHY, CA 902015809
Gen County: Not reported
TSD EPA ID: CAD028409019
TSD County: Not reported
Waste Category: Unspecified oil-containing waste
Disposal Method: DISCHARGE TO SEWER/POTW OR NPDES(WITH PRIOR STORAGE--WITH OR WITHOUT TREATMENT)
Tons: 12.51
Facility County: Los Angeles

Year: 2010
Gepaid: CAC002658007
Contact: FIONA ROCHE
Telephone: 3237734923
Mailing Name: Not reported
Mailing Address: 8445 ATLANTIC AVE
Mailing City,St,Zip: CUDAHY, CA 902015809
Gen County: Not reported
TSD EPA ID: CAD028409019
TSD County: Not reported
Waste Category: Unspecified oil-containing waste
Disposal Method: STORAGE, BULKING, AND/OR TRANSFER OFF SITE--NO TREATMENT/REOVERY (H010-H129) OR (H131-H135)

GENERAL STORES (Continued) **U001560515**

Tons: 0.9
Facility County: Los Angeles

Year: 2010
Gepaid: CAC002658007
Contact: FIONA ROCHE
Telephone: 3237734923
Mailing Name: Not reported
Mailing Address: 8445 ATLANTIC AVE
Mailing City,St,Zip: CUDAHY, CA 902015809
Gen County: Not reported
TSD EPA ID: CAD028409019
TSD County: Not reported
Waste Category: Unspecified oil-containing waste
Disposal Method: STORAGE, BULKING, AND/OR TRANSFER OFF SITE--NO TREATMENT/REOVERY (H010-H129) OR (H131-H135)
Tons: 3.2
Facility County: Los Angeles

Year: 2010
Gepaid: CAC002658007
Contact: FIONA ROCHE
Telephone: 3237734923
Mailing Name: Not reported
Mailing Address: 8445 ATLANTIC AVE
Mailing City,St,Zip: CUDAHY, CA 902015809
Gen County: Not reported
TSD EPA ID: CAT080013352
TSD County: Not reported
Waste Category: Off-specification, aged or surplus organics
Disposal Method: OTHER RECOVERY OF RECLAMATION FOR REUSE INCLUDING ACID REGENERATION, ORGANICS RECOVERY ECT
Tons: 14.19
Facility County: Los Angeles

Click this hyperlink while viewing on your computer to access additional CA_HAZNET: detail in the EDR Site Report.

K45 **SO CAL GAS/ LA MAIN ST MGP** **Manufactured Gas Plants** **1008407702**
SSW **1630 NORTH MAIN STREET** **N/A**
1/8-1/4 **LOS ANGELES, CA 90012**
0.224 mi.
1185 ft. **Site 8 of 8 in cluster K**

Relative:
Lower

Actual:
301 ft.

Manufactured Gas Plants:

MGP operated at the site from approximately 1906 to 1919. The MGP operations ceased at the site in 1919 when the Southern California Gas Company acquired the MGP property. In 1922 the Los Angeles City Water and Power acquired the property and dismanttled the gas plant.

L46 **WESTWAY ENTERPRISES INCORPORAT** **CA FID UST** **S101587517**
NE **137 S AVENUE 18** **SWEEPS UST** **N/A**
1/8-1/4 **LOS ANGELES, CA 90031**
0.225 mi.
1190 ft. **Site 1 of 5 in cluster L**

Relative:
Higher

Actual:
329 ft.

CA FID UST:

Facility ID:	19055715
Regulated By:	UTNKA
Regulated ID:	Not reported
Cortese Code:	Not reported
SIC Code:	Not reported
Facility Phone:	2130000000
Mail To:	Not reported
Mailing Address:	137 S AVENUE 18
Mailing Address 2:	Not reported
Mailing City,St,Zip:	LOS ANGELES 900310000
Contact:	Not reported
Contact Phone:	Not reported
DUNs Number:	Not reported
NPDES Number:	Not reported
EPA ID:	Not reported
Comments:	Not reported
Status:	Active

SWEEPS UST:

Status:	Not reported
Comp Number:	4196
Number:	Not reported
Board Of Equalization:	Not reported
Ref Date:	Not reported
Act Date:	Not reported
Created Date:	Not reported
Tank Status:	Not reported
Owner Tank Id:	Not reported
Swrcb Tank Id:	Not reported
Actv Date:	Not reported
Capacity:	Not reported
Tank Use:	Not reported
Stg:	Not reported
Content:	Not reported
Number Of Tanks:	0

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47 **L & M AUTO SERVICE** **CA FID UST** **S101584592**
SSE **1749 N MAIN ST** **SWEEPS UST** **N/A**
1/8-1/4 **LOS ANGELES, CA 90723**
0.227 mi.
1196 ft.

Relative:
Lower

Actual:
304 ft.

CA FID UST:

Facility ID:	19013186
Regulated By:	UTNKI
Regulated ID:	Not reported
Cortese Code:	Not reported
SIC Code:	Not reported
Facility Phone:	8183428991
Mail To:	Not reported
Mailing Address:	5248 BECKFORD AVE
Mailing Address 2:	Not reported

L & M AUTO SERVICE (Continued) **S101584592**

Mailing City,St,Zip: LOS ANGELES 907230000
Contact: Not reported
Contact Phone: Not reported
DUNs Number: Not reported
NPDES Number: Not reported
EPA ID: Not reported
Comments: Not reported
Status: Inactive

SWEEPS UST:
Status: Not reported
Comp Number: 7803
Number: Not reported
Board Of Equalization: Not reported
Ref Date: Not reported
Act Date: Not reported
Created Date: Not reported
Tank Status: Not reported
Owner Tank Id: Not reported
Swrcb Tank Id: Not reported
Actv Date: Not reported
Capacity: Not reported
Tank Use: Not reported
Stg: Not reported
Content: Not reported
Number Of Tanks: Not reported

M48 **B & N REPAIR BODY SHOP** **RCRA-SQG 1000124885**
ENE **1813 N BROADWAY** **FINDS CAD981996804**
1/8-1/4 **LOS ANGELES, CA 90031** **HAZNET**
0.228 mi.
1202 ft. **Site 1 of 3 in cluster M**

Relative:
Higher

Actual:
321 ft.

RCRA-SQG:
Date form received by agency: 09/01/1996
Facility name: B & N REPAIR BODY SHOP
Facility address: 1813 N BROADWAY
LOS ANGELES, CA 90031
EPA ID: CAD981996804
Mailing address: N BROADWAY
LOS ANGELES, CA 90031
Contact: Not reported
Contact address: Not reported
Not reported
Contact country: Not reported
Contact telephone: Not reported
Contact email: Not reported
EPA Region: 09
Classification: Small Small Quantity Generator
Description: Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:
Owner/operator name: MICHAEL HUA

B & N REPAIR BODY SHOP (Continued) **1000124885**

Owner/operator address: NOT REQUIRED
NOT REQUIRED, ME 99999
Owner/operator country: Not reported
Owner/operator telephone: (415) 555-1212
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Owner/operator name: NOT REQUIRED
Owner/operator address: NOT REQUIRED
NOT REQUIRED, ME 99999
Owner/operator country: Not reported
Owner/operator telephone: (415) 555-1212
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Violation Status: No violations found

FINDS:

Registry ID: 110002770939

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

HAZNET:
Year: 1993
Gepaid: CAD981996804
Contact: Not reported
Telephone: 0000000000
Mailing Name: Not reported

B & N REPAIR BODY SHOP (Continued) **1000124885**

Mailing Address: 1813 N BROADWAY
Mailing City,St,Zip: LOS ANGELES, CA 900310000
Gen County: Los Angeles
TSD EPA ID: CAD008252405
TSD County: Los Angeles
Waste Category: Unspecified solvent mixture
Disposal Method: R01
Tons: .1125
Facility County: Los Angeles

L49 **YOUNG NAK PRESBYTARIAN CHURCH** **CA FID UST** **S101586897**
NE **125 S AVENUE 18** **SWEEPS UST** **N/A**
1/8-1/4 **LOS ANGELES, CA 90031**
0.229 mi.
1208 ft. **Site 2 of 5 in cluster L**

Relative:
Higher

Actual:
329 ft.

CA FID UST:
Facility ID: 19054583
Regulated By: UTNKI
Regulated ID: Not reported
Cortese Code: Not reported
SIC Code: Not reported
Facility Phone: 2130000000
Mail To: Not reported
Mailing Address: 125 S AVENUE 18
Mailing Address 2: Not reported
Mailing City,St,Zip: LOS ANGELES 900310000
Contact: Not reported
Contact Phone: Not reported
DUNs Number: Not reported
NPDES Number: Not reported
EPA ID: Not reported
Comments: Not reported
Status: Inactive

SWEEPS UST:
Status: Not reported
Comp Number: 7128
Number: Not reported
Board Of Equalization: Not reported
Ref Date: Not reported
Act Date: Not reported
Created Date: Not reported
Tank Status: Not reported
Owner Tank Id: Not reported
Swrcb Tank Id: Not reported
Actv Date: Not reported
Capacity: Not reported
Tank Use: Not reported
Stg: Not reported
Content: Not reported
Number Of Tanks: 0

M50 ENE 1/8-1/4 0.229 mi. 1210 ft. **SERVICE MOTOR PARTS CO**
1815 N BROADWAY
LOS ANGELES, CA 90031
Site 2 of 3 in cluster M

Database(s): RCRA-SQG, FINDS
EDR ID Number: 1000432858
EPA ID Number: CAD981447857

Relative: Higher

Actual: 322 ft.

RCRA-SQG:

Date form received by agency:	02/27/1986
Facility name:	SERVICE MOTOR PARTS CO
Facility address:	1815 N BROADWAY LOS ANGELES, CA 90031
EPA ID:	CAD981447857
Mailing address:	N BROADWAY LOS ANGELES, CA 90031
Contact:	ENVIRONMENTAL MANAGER
Contact address:	1815 N BROADWAY LOS ANGELES, CA 90031
Contact country:	US
Contact telephone:	(213) 221-3104
Contact email:	Not reported
EPA Region:	09
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name:	K P WATERHOUSE
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Owner/operator name:	NOT REQUIRED
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No

SERVICE MOTOR PARTS CO (Continued) **1000432858**

Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Violation Status: No violations found

FINDS:

Registry ID: 110002710415

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

L51 **GABEL'S COSMETICS, INC.** **NPDES** **U001561308**
NE **126 S AVENUE 18** **HIST UST** **N/A**
1/8-1/4 **LOS ANGELES, CA 90031**
0.230 mi.
1213 ft. **Site 3 of 5 in cluster L**

Relative:
Higher

Actual:
329 ft.

NPDES:
Npdes Number: CAS000001
Facility Status: Active
Agency Id: 0
Region: 4
Regulatory Measure Id: 188665
Order No: 97-03-DWQ
Regulatory Measure Type: Enrollee
Place Id: Not reported
WDID: 4 19I000662
Program Type: Industrial
Adoption Date Of Regulatory Measure: Not reported
Effective Date Of Regulatory Measure: 03/17/1992
Expiration Date Of Regulatory Measure: Not reported
Termination Date Of Regulatory Measure: Not reported
Discharge Name: Gabels Cosmetics
Discharge Address: 126 S Avenue 18
Discharge City: Los Angeles
Discharge State: California
Discharge Zip: 90031

HIST UST:
Region: STATE
Facility ID: 00000055924
Facility Type: Other
Other Type: COSMETIC MANUFACTURE
Total Tanks: 0001
Contact Name: ERNEST A. GABEL, PRESIDENT
Telephone: 2132212430

GABEL'S COSMETICS, INC. (Continued) **U001561308**

Owner Name: GABEL'S COSMETICS, INC.
Owner Address: 126 SOUTH AVENUE 18
Owner City,St,Zip: LOS ANGELES, CA 900311777

Tank Num: 001
Container Num: 1
Year Installed: 1968
Tank Capacity: 00001000
Tank Used for: PRODUCT
Type of Fuel: Not reported
Tank Construction: Not reported
Leak Detection: Stock Inventor

L52 **GABEL'S COSMETICS, INCORPORATE** **WDS** **S101587420**
NE **126 S AVENUE 18** **CA FID UST** **N/A**
1/8-1/4 **LOS ANGELES, CA 90031** **SWEEPS UST**
0.230 mi.
1213 ft. **Site 4 of 5 in cluster L**

Relative:
Higher

Actual:
329 ft.

CA WDS:
Facility ID: 4 19I000662
Facility Type: Industrial - Facility that treats and/or disposes of liquid or semisolid wastes from any servicing, producing, manufacturing or processing operation of whatever nature, including mining, gravel washing, geothermal operations, air conditioning, ship building and repairing, oil production, storage and disposal operations, water pumping.
Facility Status: Active - Any facility with a continuous or seasonal discharge that is under Waste Discharge Requirements.
NPDES Number: CAS000001 The 1st 2 characters designate the state. The remaining 7 are assigned by the Regional Board
Subregion: 4
Facility Telephone: 3232212430
Facility Contact: STEPHEN MILLER
Agency Name: STEPHEN R MILLERDON GABEL
Agency Address: 126 S Avenue 18
Agency City,St,Zip: Los Angeles 900311734
Agency Contact: STEPHEN MILLER
Agency Telephone: 3232212430
Agency Type: Private
SIC Code: 0
SIC Code 2: Not reported
Primary Waste: Not reported
Primary Waste Type: Not reported
Secondary Waste: Not reported
Secondary Waste Type: Not reported
Design Flow: 0
Baseline Flow: 0
Reclamation: Not reported
POTW: Not reported
Treat To Water: Minor Threat to Water Quality. A violation of a regional board order should cause a relatively minor impairment of beneficial uses compared to a major or minor threat. Not: All nurds without a TTWQ will be considered a minor threat to water quality unless coded at a higher Level. A Zero (0) may be used to code those NURDS that are found to represent no threat to water quality.
Complexity: Category C - Facilities having no waste treatment systems, such as cooling water dischargers or thosewho must comply through best

GABEL'S COSMETICS, INCORPORATE (Continued) **S101587420**

management practices, facilities with passive waste treatment and disposal systems, such as septic systems with subsurface disposal, or dischargers having waste storage systems with land disposal such as dairy waste ponds.

CA FID UST:

Facility ID:	19055575
Regulated By:	UTNKA
Regulated ID:	00055924
Cortese Code:	Not reported
SIC Code:	Not reported
Facility Phone:	2132212430
Mail To:	Not reported
Mailing Address:	126 S AVENUE 18
Mailing Address 2:	Not reported
Mailing City,St,Zip:	LOS ANGELES 900310000
Contact:	Not reported
Contact Phone:	Not reported
DUNs Number:	Not reported
NPDES Number:	Not reported
EPA ID:	Not reported
Comments:	Not reported
Status:	Active

SWEEPS UST:

Status:	A
Comp Number:	3134
Number:	1
Board Of Equalization:	44-012807
Ref Date:	02-25-93
Act Date:	02-25-93
Created Date:	02-29-88
Tank Status:	A
Owner Tank Id:	Not reported
Swrcb Tank Id:	19-050-003134-000001
Actv Date:	04-20-88
Capacity:	1000
Tank Use:	CHEMICAL
Stg:	P
Content:	UNKNOWN
Number Of Tanks:	1

L53 **GABEL'S COSMETICS, INCORPORATE** **UST** **U003970887**
NE **126 SOUTH AVENUE 18** **N/A**
1/8-1/4 **LOS ANGELES, CA 90031**
0.230 mi.
1213 ft. **Site 5 of 5 in cluster L**

Relative:
Higher

Actual:
329 ft.

UST:

Facility ID:	24026
Latitude:	34.07269
Longitude:	-118.22306

M54 **BROUWERS ALBT** **EDR Historical Auto Stations** **1009076244**
ENE **1821 N BROADWAY** **N/A**
1/8-1/4 **LOS ANGELES, CA**
0.233 mi.
1231 ft. **Site 3 of 3 in cluster M**

Relative:
Higher

Actual:
322 ft.

EDR Historical Auto Stations:
Name: BROUWERS ALBT
Year: 1924
Type: AUTOMOBILE REPAIRING

N55 **ATLAS CARPET MILLS, INC.(DYE H** **CA FID UST** **1000593009**
ESE **340 SO. AVENUE** **HIST UST** **N/A**
1/8-1/4 **LOS ANGELES, CA 90031** **EMI**
0.243 mi.
1282 ft. **Site 1 of 3 in cluster N**

Relative:
Higher

Actual:
308 ft.

CA FID UST:
Facility ID: 19053588
Regulated By: UTNKA
Regulated ID: 00006451
Cortese Code: Not reported
SIC Code: Not reported
Facility Phone: 2132685620
Mail To: Not reported
Mailing Address: 4560 WORTH ST
Mailing Address 2: Not reported
Mailing City,St,Zip: LOS ANGELES 900310000
Contact: Not reported
Contact Phone: Not reported
DUNs Number: Not reported
NPDES Number: Not reported
EPA ID: Not reported
Comments: Not reported
Status: Active

HIST UST:
Region: STATE
Facility ID: 00000006451
Facility Type: Other
Other Type: CARPET MFG.
Total Tanks: 0005
Contact Name: GEORGE BITTING
Telephone: 2132685620
Owner Name: ATLAS CARPET MILLS, INC.
Owner Address: 4560 WORTH STREET
Owner City,St,Zip: LOS ANGELES, CA 90063

Tank Num: 001
Container Num: #1
Year Installed: 1970
Tank Capacity: 00010000
Tank Used for: PRODUCT
Type of Fuel: DIESEL
Tank Construction: Not reported
Leak Detection: None

Tank Num: 002
Container Num: #2

ATLAS CARPET MILLS, INC.(DYE H (Continued) **1000593009**

Year Installed: 1970
Tank Capacity: 00008000
Tank Used for: PRODUCT
Type of Fuel: DIESEL
Tank Construction: Not reported
Leak Detection: None

Tank Num: 003
Container Num: #3
Year Installed: 1970
Tank Capacity: 00006000
Tank Used for: PRODUCT
Type of Fuel: DIESEL
Tank Construction: Not reported
Leak Detection: None

Tank Num: 004
Container Num: #4
Year Installed: 1970
Tank Capacity: 00006000
Tank Used for: PRODUCT
Type of Fuel: DIESEL
Tank Construction: Not reported
Leak Detection: None

Tank Num: 005
Container Num: #5
Year Installed: 1970
Tank Capacity: 00010000
Tank Used for: PRODUCT
Type of Fuel: DIESEL
Tank Construction: Not reported
Leak Detection: Not reported

EMI:

Year:	1987
County Code:	19
Air Basin:	SC
Facility ID:	10094
Air District Name:	SC
SIC Code:	2273
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	1
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	3
NOX - Oxides of Nitrogen Tons/Yr:	11
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	1
Part. Matter 10 Micrometers & Smllr Tons/Yr:	1

Year:	1990
County Code:	19
Air Basin:	SC
Facility ID:	10094
Air District Name:	SC

ATLAS CARPET MILLS, INC.(DYE H (Continued) **1000593009**

SIC Code:	2273
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	1
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	4
NOX - Oxides of Nitrogen Tons/Yr:	11
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	1
Part. Matter 10 Micrometers & Smllr Tons/Yr:	1

Year:	1993
County Code:	19
Air Basin:	SC
Facility ID:	10094
Air District Name:	SC
SIC Code:	2273
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	1
Reactive Organic Gases Tons/Yr:	1
Carbon Monoxide Emissions Tons/Yr:	2
NOX - Oxides of Nitrogen Tons/Yr:	9
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	1
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	1995
County Code:	19
Air Basin:	SC
Facility ID:	10094
Air District Name:	SC
SIC Code:	2273
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	1
Reactive Organic Gases Tons/Yr:	1
Carbon Monoxide Emissions Tons/Yr:	2
NOX - Oxides of Nitrogen Tons/Yr:	9
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	1
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	1998
County Code:	19
Air Basin:	SC
Facility ID:	10094
Air District Name:	SC
SIC Code:	2273
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	1
Reactive Organic Gases Tons/Yr:	1

ATLAS CARPET MILLS, INC.(DYE H (Continued) **1000593009**

Carbon Monoxide Emissions Tons/Yr:	3
NOX - Oxides of Nitrogen Tons/Yr:	4
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	1
Part. Matter 10 Micrometers & Smllr Tons/Yr:	1

Year:	2005
County Code:	19
Air Basin:	SC
Facility ID:	10094
Air District Name:	SC
SIC Code:	2273
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	.47907
Reactive Organic Gases Tons/Yr:	.202263354
Carbon Monoxide Emissions Tons/Yr:	6.99035
NOX - Oxides of Nitrogen Tons/Yr:	1.545475
SOX - Oxides of Sulphur Tons/Yr:	.051535
Particulate Matter Tons/Yr:	.652275
Part. Matter 10 Micrometers & Smllr Tons/Yr:	.650565

N56 **ATLAS CARPET MILLS** **UST** **1002851791**
ESE **340 SOUTH AVENUE 17** **N/A**
1/8-1/4 **LOS ANGELES, CA 90031**
0.243 mi.
1282 ft. **Site 2 of 3 in cluster N**

Relative:
Higher

Actual:
308 ft.

UST:

Facility ID:	23986
Latitude:	34.06856
Longitude:	-118.22193

N57 **ATLAS CARPET MILLS** **HIST FTTS** **1008175111**
ESE **340 S AVENUE 17** **SWEEPS UST** **N/A**
1/8-1/4 **LOS ANGELES, CA 90031**
0.243 mi.
1282 ft. **Site 3 of 3 in cluster N**

Relative:
Higher

Actual:
308 ft.

HIST FTTS INSP:

Inspection Number:	19890315R0903 1
Region:	09
Inspection Date:	Not reported
Inspector:	DEVINY
Violation occurred:	Yes
Investigation Type:	EPCRA, Enforcement, SEE Conducted
Investigation Reason:	Neutral Scheme, Region
Legislation Code:	EPCRA
Facility Function:	User

SWEEPS UST:

Status:	A
Comp Number:	717
Number:	1

ATLAS CARPET MILLS (Continued) **1008175111**

Board Of Equalization: 44-011353
Ref Date: 02-23-93
Act Date: 02-23-93
Created Date: 02-29-88
Tank Status: A
Owner Tank Id: Not reported
Swrcb Tank Id: 19-050-000717-000001
Actv Date: 04-20-88
Capacity: 10000
Tank Use: M.V. FUEL
Stg: P
Content: DIESEL
Number Of Tanks: 5

Status: A
Comp Number: 717
Number: 1
Board Of Equalization: 44-011353
Ref Date: 02-23-93
Act Date: 02-23-93
Created Date: 02-29-88
Tank Status: A
Owner Tank Id: Not reported
Swrcb Tank Id: 19-050-000717-000002
Actv Date: 04-20-88
Capacity: 8000
Tank Use: M.V. FUEL
Stg: P
Content: DIESEL
Number Of Tanks: Not reported

Status: A
Comp Number: 717
Number: 1
Board Of Equalization: 44-011353
Ref Date: 02-23-93
Act Date: 02-23-93
Created Date: 02-29-88
Tank Status: A
Owner Tank Id: Not reported
Swrcb Tank Id: 19-050-000717-000003
Actv Date: 04-20-88
Capacity: 6000
Tank Use: M.V. FUEL
Stg: P
Content: DIESEL
Number Of Tanks: Not reported

Status: A
Comp Number: 717
Number: 1
Board Of Equalization: 44-011353
Ref Date: 02-23-93
Act Date: 02-23-93
Created Date: 02-29-88
Tank Status: A
Owner Tank Id: Not reported

ATLAS CARPET MILLS (Continued) **1008175111**

Swrcb Tank Id: 19-050-000717-000004
Actv Date: 04-20-88
Capacity: 6000
Tank Use: M.V. FUEL
Stg: P
Content: DIESEL
Number Of Tanks: Not reported

Status: A
Comp Number: 717
Number: 1
Board Of Equalization: 44-011353
Ref Date: 02-23-93
Act Date: 02-23-93
Created Date: 02-29-88
Tank Status: A
Owner Tank Id: Not reported
Swrcb Tank Id: 19-050-000717-000005
Actv Date: 04-20-88
Capacity: 10000
Tank Use: M.V. FUEL
Stg: P
Content: DIESEL
Number Of Tanks: Not reported

O58 **CATHERINA MAGNESS** **CA FID UST S101583859**
NNE **101 N AVENUE 18** **SWEEPS UST N/A**
1/8-1/4 **LOS ANGELES, CA 90031**
0.244 mi.
1290 ft. **Site 1 of 4 in cluster O**

Relative:
Higher

Actual:
328 ft.

CA FID UST:
Facility ID: 19006886
Regulated By: UTNKI
Regulated ID: Not reported
Cortese Code: Not reported
SIC Code: Not reported
Facility Phone: 2134834700
Mail To: Not reported
Mailing Address: Not reported
Mailing Address 2: Not reported
Mailing City,St,Zip: LOS ANGELES 900310000
Contact: Not reported
Contact Phone: Not reported
DUNs Number: Not reported
NPDES Number: Not reported
EPA ID: Not reported
Comments: Not reported
Status: Inactive

SWEEPS UST:
Status: Not reported
Comp Number: 5827
Number: Not reported
Board Of Equalization: Not reported
Ref Date: Not reported
Act Date: Not reported

CATHERINA MAGNESS (Continued) **S101583859**

Created Date:	Not reported
Tank Status:	Not reported
Owner Tank Id:	Not reported
Swrcb Tank Id:	Not reported
Actv Date:	Not reported
Capacity:	Not reported
Tank Use:	Not reported
Stg:	Not reported
Content:	Not reported
Number Of Tanks:	0

O59 **WESTWAY ENTERPRISES, INC** **CA FID UST** **S101583663**
NNE **1800 PASADENA AVE** **SWEEPS UST** **N/A**
1/8-1/4 **LOS ANGELES, CA 90031**
0.244 mi.
1290 ft. **Site 2 of 4 in cluster O**

Relative:
Higher

Actual:
329 ft.

CA FID UST:

Facility ID:	19005338
Regulated By:	UTNKI
Regulated ID:	Not reported
Cortese Code:	Not reported
SIC Code:	Not reported
Facility Phone:	2130000000
Mail To:	Not reported
Mailing Address:	1800 PASADENA AVE
Mailing Address 2:	Not reported
Mailing City,St,Zip:	LOS ANGELES 900310000
Contact:	Not reported
Contact Phone:	Not reported
DUNs Number:	Not reported
NPDES Number:	Not reported
EPA ID:	Not reported
Comments:	Not reported
Status:	Inactive

SWEEPS UST:

Status:	Not reported
Comp Number:	4742
Number:	Not reported
Board Of Equalization:	Not reported
Ref Date:	Not reported
Act Date:	Not reported
Created Date:	Not reported
Tank Status:	Not reported
Owner Tank Id:	Not reported
Swrcb Tank Id:	Not reported
Actv Date:	Not reported
Capacity:	Not reported
Tank Use:	Not reported
Stg:	Not reported
Content:	Not reported
Number Of Tanks:	Not reported

O60 **CENTRAL TRAFFIC YARD** **LUST** **S104773317**
NE **1831 PASADENA AVE** **N/A**
1/4-1/2 **LOS ANGELES, CA 90031**
0.266 mi.
1404 ft. **Site 3 of 4 in cluster O**

Relative:
Higher

Actual:
332 ft.

LUST REG 4:

Region:	4	
Regional Board:	04	
County:	Los Angeles	
Facility Id:	900310343	
Status:	Leak being confirmed	
Substance:	1	
Substance Quantity:	Not reported	
Local Case No:	Not reported	
Case Type:	Soil	
Abatement Method Used at the Site:		Not reported
Global ID:	T0603793073	
W Global ID:	Not reported	
Staff:	UNK	
Local Agency:	19050	
Cross Street:	Not reported	
Enforcement Type:	Not reported	
Date Leak Discovered:	7/8/1999	
Date Leak First Reported:		10/7/1999
Date Leak Record Entered:	Not reported	
Date Confirmation Began:	10/7/1999	
Date Leak Stopped:	Not reported	
Date Case Last Changed on Database:		10/7/1999
Date the Case was Closed:		Not reported
How Leak Discovered:	Repair Tank	
How Leak Stopped:	Not reported	
Cause of Leak:	UNK	
Leak Source:	UNK	
Operator:	Not reported	
Water System:	Not reported	
Well Name:	Not reported	
Approx. Dist To Production Well (ft):		7504.1101712831764927558534574
Source of Cleanup Funding:		UNK
Preliminary Site Assessment Workplan Submitted:		Not reported
Preliminary Site Assessment Began:		Not reported
Pollution Characterization Began:		Not reported
Remediation Plan Submitted:		Not reported
Remedial Action Underway:		Not reported
Post Remedial Action Monitoring Began:		Not reported
Enforcement Action Date:		Not reported
Historical Max MTBE Date:		Not reported
Hist Max MTBE Conc in Groundwater:		Not reported
Hist Max MTBE Conc in Soil:		Not reported
Significant Interim Remedial Action Taken:		Not reported
GW Qualifier:	Not reported	
Soil Qualifier:	Not reported	
Organization:	Not reported	
Owner Contact:	Not reported	
Responsible Party:	CITY OF LOS ANGELES	
RP Address:	419 S. SPRING ST., 12TH FL., LOS ANGELES, CA 90013	
Program:	LUST	
Lat/Long:	34.073501 / -1	
Local Agency Staff:	PEJ	

CENTRAL TRAFFIC YARD (Continued) **S104773317**

Beneficial Use:	Not reported
Priority:	Not reported
Cleanup Fund Id:	Not reported
Suspended:	Not reported
Assigned Name:	Not reported
Summary:	Not reported

O61 **LA DEPT TRANSPORTATION MATERIAL CONTROL** **LUST** **S101585560**
NE **1831 PASADENA AVE** **CA FID UST** **N/A**
1/4-1/2 **LOS ANGELES, CA 90031** **SWEEPS UST**
0.266 mi. **HAZNET**
1404 ft. **Site 4 of 4 in cluster O** **EMI**

Relative:
Higher

Actual:
332 ft.

LUST:

Region:	STATE
Global Id:	T0603793073
Latitude:	34.073913
Longitude:	-118.22286
Case Type:	LUST Cleanup Site
Status:	Completed - Case Closed
Status Date:	03/12/2002
Lead Agency:	LOS ANGELES, CITY OF
Case Worker:	WR
Local Agency:	LOS ANGELES, CITY OF
RB Case Number:	900310343
LOC Case Number:	Not reported
File Location:	Not reported
Potential Media Affect:	Soil
Potential Contaminants of Concern:	Aviation
Site History:	Not reported

Click here to access the California GeoTracker records for this facility:

LUST:

Global Id:	T0603793073
Contact Type:	Local Agency Caseworker
Contact Name:	TBD
Organization Name:	LOS ANGELES, CITY OF
Address:	200 N. MAIN ST. RM. 970
City:	LOS ANGELES
Email:	Not reported
Phone Number:	2134826528

Global Id:	T0603793073
Contact Type:	Regional Board Caseworker
Contact Name:	YUE RONG
Organization Name:	LOS ANGELES RWQCB (REGION 4)
Address:	320 W. 4TH ST., SUITE 200
City:	Los Angeles
Email:	yrong@waterboards.ca.gov
Phone Number:	Not reported

LUST:

Global Id:	T0603793073
Action Type:	Other
Date:	01/01/1950
Action:	Leak Reported

LA DEPT TRANSPORTATION MATERIAL CONTROL (Continued) **S101585560**

Global Id: T0603793073
Action Type: Other
Date: 01/01/1950
Action: Leak Discovery

CA FID UST:
Facility ID: 19025215
Regulated By: UTNKA
Regulated ID: 00047100
Cortese Code: Not reported
SIC Code: Not reported
Facility Phone: 2134855846
Mail To: Not reported
Mailing Address: 200 N MAIN STREET-ROOM
Mailing Address 2: Not reported
Mailing City,St,Zip: LOS ANGELES 900310000
Contact: Not reported
Contact Phone: Not reported
DUNs Number: Not reported
NPDES Number: Not reported
EPA ID: Not reported
Comments: Not reported
Status: Active

SWEEPS UST:
Status: A
Comp Number: 2451
Number: 4
Board Of Equalization: 44-012042
Ref Date: 09-21-93
Act Date: 04-18-94
Created Date: 02-29-88
Tank Status: A
Owner Tank Id: Not reported
Swrcb Tank Id: 19-050-002451-000001
Actv Date: 04-20-88
Capacity: 10000
Tank Use: M.V. FUEL
Stg: P
Content: REG UNLEADED
Number Of Tanks: 2

Status: A
Comp Number: 2451
Number: 4
Board Of Equalization: 44-012042
Ref Date: 09-21-93
Act Date: 04-18-94
Created Date: 02-29-88
Tank Status: A
Owner Tank Id: Not reported
Swrcb Tank Id: 19-050-002451-000002
Actv Date: 04-20-88
Capacity: 8000
Tank Use: M.V. FUEL

LA DEPT TRANSPORTATION MATERIAL CONTROL (Continued) **S101585560**

Stg: P
Content: REG UNLEADED
Number Of Tanks: Not reported

HAZNET:
Year: 2010
Gepaid: CAD982053647
Contact: MIKE STAWICKI
Telephone: 2134856773
Mailing Name: Not reported
Mailing Address: 100 S MAIN ST 9TH FL
Mailing City,St,Zip: LOS ANGELES, CA 900120000
Gen County: Not reported
TSD EPA ID: CAD044429835
TSD County: Not reported
Waste Category: Latex waste
Disposal Method: STORAGE, BULKING, AND/OR TRANSFER OFF SITE--NO TREATMENT/REOVERY (H010-H129) OR (H131-H135)
Tons: 1.2
Facility County: Los Angeles

Year: 2010
Gepaid: CAD982053647
Contact: MIKE STAWICKI
Telephone: 2134856773
Mailing Name: Not reported
Mailing Address: 100 S MAIN ST 9TH FL
Mailing City,St,Zip: LOS ANGELES, CA 900120000
Gen County: Not reported
TSD EPA ID: CAD044429835
TSD County: Not reported
Waste Category: Off-specification, aged or surplus organics
Disposal Method: STORAGE, BULKING, AND/OR TRANSFER OFF SITE--NO TREATMENT/REOVERY (H010-H129) OR (H131-H135)
Tons: 1.5
Facility County: Los Angeles

Year: 2010
Gepaid: CAD982053647
Contact: MIKE STAWICKI
Telephone: 2134856773
Mailing Name: Not reported
Mailing Address: 100 S MAIN ST 9TH FL
Mailing City,St,Zip: LOS ANGELES, CA 900120000
Gen County: Not reported
TSD EPA ID: CAD044429835
TSD County: Not reported
Waste Category: Off-specification, aged or surplus organics
Disposal Method: STORAGE, BULKING, AND/OR TRANSFER OFF SITE--NO TREATMENT/REOVERY (H010-H129) OR (H131-H135)
Tons: 2.4
Facility County: Los Angeles

Year: 2009
Gepaid: CAD982053647
Contact: ED MYLES
Telephone: 2134856773

LA DEPT TRANSPORTATION MATERIAL CONTROL (Continued) **S101585560**

Mailing Name:	Not reported
Mailing Address:	100 S MAIN ST 9TH FL
Mailing City,St,Zip:	LOS ANGELES, CA 900120000
Gen County:	Los Angeles
TSD EPA ID:	CAD044429835
TSD County:	Los Angeles
Waste Category:	Other inorganic solid waste
Disposal Method:	STORAGE, BULKING, AND/OR TRANSFER OFF SITE--NO TREATMENT/REOVERY (H010-H129) OR (H131-H135)
Tons:	3.45
Facility County:	Los Angeles
Year:	2009
Gepaid:	CAD982053647
Contact:	ED MYLES
Telephone:	2134856773
Mailing Name:	Not reported
Mailing Address:	100 S MAIN ST 9TH FL
Mailing City,St,Zip:	LOS ANGELES, CA 900120000
Gen County:	Los Angeles
TSD EPA ID:	CAD044429835
TSD County:	Los Angeles
Waste Category:	Latex waste
Disposal Method:	STORAGE, BULKING, AND/OR TRANSFER OFF SITE--NO TREATMENT/REOVERY (H010-H129) OR (H131-H135)
Tons:	5.6
Facility County:	Los Angeles

Click this hyperlink while viewing on your computer to access
11 additional CA_HAZNET: record(s) in the EDR Site Report.

EMI:

Year:	1995
County Code:	19
Air Basin:	SC
Facility ID:	34303
Air District Name:	SC
SIC Code:	9199
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	3
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

P62 **VALSPAR CORPORTION** **RCRA-NonGen** **1000385647**
SE **620 LAMAR ST** **FINDS** **CAD990663775**
1/4-1/2 **LOS ANGELES, CA 90031** **HIST CORTESE**
0.317 mi. **LUST**
1674 ft. **Site 1 of 2 in cluster P** **SLIC**
HIST UST
Relative: **HAZNET**
Lower

Actual: RCRA-NonGen:
300 ft.

Date form received by agency:	07/18/1980
Facility name:	VALSPAR CORPORTION
Facility address:	620 LAMAR ST LOS ANGELES, CA 90031
EPA ID:	CAD990663775
Mailing address:	PO BOX 2176 LOS ANGELES, CA 90051
Contact:	ENVIRONMENTAL MANAGER
Contact address:	620 LAMAR ST LOS ANGELES, CA 90031
Contact country:	US
Contact telephone:	(213) 222-5111
Contact email:	Not reported
EPA Region:	09
Land type:	Other land type
Classification:	Non-Generator
Description:	Handler: Non-Generators do not presently generate hazardous waste

Owner/Operator Summary:

Owner/operator name:	VALSPAR CORPORTION
Owner/operator address:	PO BOX 2176 LOS ANGELES, CA 90051
Owner/operator country:	Not reported
Owner/operator telephone:	(213) 222-5111
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Owner/operator name:	VALSPAR CORPORTION
Owner/operator address:	PO BOX 2176 CITY NOT REPORTED, CA 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(213) 222-5111
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No

VALSPAR CORPORTION (Continued) **1000385647**

Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Violation Status: No violations found

Evaluation Action Summary:
Evaluation date: 02/05/1985
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 02/05/1985
Evaluation: NON-FINANCIAL RECORD REVIEW
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

FINDS:

Registry ID: 110009551485

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

CORTESE:
Region: CORTESE
Facility County Code: 19
Reg By: LTNKA
Reg Id: 900310016

LUST REG 4:
Region: 4
Regional Board: 04
County: Los Angeles
Facility Id: 900310016
Status: Pollution Characterization
Substance: Solvents
Substance Quantity: Not reported
Local Case No: Not reported
Case Type: Groundwater
Abatement Method Used at the Site: Excavate and Dispose
Global ID: T0603700783
W Global ID: W0605100649
Staff: SLC
Local Agency: 19050

VALSPAR CORPORTION (Continued) **1000385647**

Cross Street:	NORTH MAIN	
Enforcement Type:	Not reported	
Date Leak Discovered:	Not reported	
Date Leak First Reported:		10/1/1985
Date Leak Record Entered:	12/31/1986	
Date Confirmation Began:	Not reported	
Date Leak Stopped:	Not reported	
Date Case Last Changed on Database:		3/22/1992
Date the Case was Closed:		Not reported
How Leak Discovered:	Not reported	
How Leak Stopped:	Not reported	
Cause of Leak:	UNK	
Leak Source:	UNK	
Operator:	Not reported	
Water System:	DAVE GRIFFITH L A D W P	
Well Name:	Not reported	
Approx. Dist To Production Well (ft):		6370.606718234212687300781885
Source of Cleanup Funding:		UNK
Preliminary Site Assessment Workplan Submitted:		Not reported
Preliminary Site Assessment Began:		Not reported
Pollution Characterization Began:		6/16/1988
Remediation Plan Submitted:		Not reported
Remedial Action Underway:		Not reported
Post Remedial Action Monitoring Began:		Not reported
Enforcement Action Date:		Not reported
Historical Max MTBE Date:		Not reported
Hist Max MTBE Conc in Groundwater:		Not reported
Hist Max MTBE Conc in Soil:		Not reported
Significant Interim Remedial Action Taken:		Yes
GW Qualifier:	Not reported	
Soil Qualifier:	Not reported	
Organization:	Not reported	
Owner Contact:	Not reported	
Responsible Party:	BLANK RP	
RP Address:	Not reported	
Program:	SLIC	
Lat/Long:	34.0663752 / -1	
Local Agency Staff:	PEJ	
Beneficial Use:	Not reported	
Priority:	Not reported	
Cleanup Fund Id:	Not reported	
Suspended:	Not reported	
Assigned Name:	2600649-001GEN	
Summary:	*SAP REQUESTED. CONTAMINATION BELIEVED TO COME FROM OFF-SITE	

SLIC:

Region:	STATE
Facility Status:	**Open - Site Assessment**
Status Date:	06/16/1988
Global Id:	T0603700783
Lead Agency:	LOS ANGELES RWQCB (REGION 4)
Lead Agency Case Number:	Not reported
Latitude:	34.0663752
Longitude:	-118.2224745
Case Type:	Cleanup Program Site
Case Worker:	SLC
Local Agency:	LOS ANGELES, CITY OF

VALSPAR CORPORTION (Continued) **1000385647**

RB Case Number:	900310016
File Location:	Not reported
Potential Media Affected:	Aquifer used for drinking water supply
Potential Contaminants of Concern:	* Solvents
Site History:	Not reported

Click here to access the California GeoTracker records for this facility:

Region:	STATE
Facility Status:	**Completed - Case Closed**
Status Date:	01/06/2010
Global Id:	T0603770626
Lead Agency:	LOS ANGELES RWQCB (REGION 4)
Lead Agency Case Number:	Not reported
Latitude:	34.066012
Longitude:	-118.222533
Case Type:	Cleanup Program Site
Case Worker:	S-
Local Agency:	Not reported
RB Case Number:	1185
File Location:	Regional Board
Potential Media Affected:	Aquifer used for drinking water supply, Soil, Soil Vapor
Potential Contaminants of Concern:	* Solvents, Acetone, Arsenic, Chromium, Heating Oil / Fuel Oil
Site History:	The Site is a vacant building complex owned by Lamar Plaza LLC, which purchased the property from Smiland Land Company (SLC) on October 31, 2007. The property is approximately 3.4 acres in size and was a former paint manufacturing facility. Smiland Paint Company (SPC), predecessor to SLC, occupied and operated the paint manufacturing facility from approximately 1986 to 2004. SPC stopped its paint manufacturing operations in 2004 and leased the facility to Moreware Paint Company (MPC). MPC operated the facility until November 2007. After MPC discontinued its operations, the machinery, ASTs, raw materials, etc have been removed from the property. Similar operations were conducted at the Site by North American Paint Company and Valspar Corporation from approximately 1937 to 1985. The Site was occupied by residences and horse stables prior to 1937. Site investigations were initiated at the Site in 1985 in conjunction with the abandonment-in-place of two 7,500-gallon solvent/thinner underground storage tanks (USTs). Expanded site assessments were conducted onsite and offsite in 1999, 2007, 2008 and 2009. The subsurface investigations detected low level volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs) and heavy metals at varying background concentrations in soil and groundwater. Total petroleum hydrocarbons (TPH) were detected in soil samples collected near the water table. Free product was also encountered floating on the water table in the onsite and offsite soil borings. The results of the site assessments indicate that the residual VOC contaminants in soil are localized, limited in mass and extent and are below the SSLs established by the Regional Board in the Interim Site Assessment & Cleanup Guidebook, May 1996. All other potential contaminants, such as SVOCs and heavy metals, are below the United States Environmental Protection Agency (U.S. EPA) Region IX Regional Soil Screening Levels (SSLs) for the protection of human health and groundwater or at background concentrations. The TPH contamination in the soil is mostly confined to a smear zone approximately between 15 feet and 20 feet bgs and is likely resulted from the free product floating on the water table. The free product

VALSPAR CORPORTION (Continued) **1000385647**

appears to be the result of a natural condition, rather than attributed to onsite releases. Based on the results of the site investigations, the Regional Board determined no further requirements (NFR) are needed with respect to soil and groundwater beneath the Site. The case has been closed.

Click here to access the California GeoTracker records for this facility:

HIST UST:

Region:	STATE
Facility ID:	00000019010
Facility Type:	Other
Other Type:	Not reported
Total Tanks:	0006
Contact Name:	Not reported
Telephone:	2132225111
Owner Name:	THE VALSPAR CORPORATION
Owner Address:	1101 THIRD STREET SOUTH
Owner City,St,Zip:	MINNEAPOLIS, MN 55415

Tank Num:	001
Container Num:	1
Year Installed:	Not reported
Tank Capacity:	00007500
Tank Used for:	PRODUCT
Type of Fuel:	Not reported
Tank Construction:	Not reported
Leak Detection:	Visual

Tank Num:	002
Container Num:	2
Year Installed:	Not reported
Tank Capacity:	00007500
Tank Used for:	PRODUCT
Type of Fuel:	Not reported
Tank Construction:	Not reported
Leak Detection:	Visual

Tank Num:	003
Container Num:	3
Year Installed:	Not reported
Tank Capacity:	00007500
Tank Used for:	PRODUCT
Type of Fuel:	Not reported
Tank Construction:	Not reported
Leak Detection:	Visual

Tank Num:	004
Container Num:	4
Year Installed:	Not reported
Tank Capacity:	00007500
Tank Used for:	PRODUCT
Type of Fuel:	Not reported
Tank Construction:	Not reported
Leak Detection:	Visual

Tank Num:	005

VALSPAR CORPORTION (Continued) **1000385647**

Container Num: 5
Year Installed: Not reported
Tank Capacity: 00007500
Tank Used for: PRODUCT
Type of Fuel: Not reported
Tank Construction: Not reported
Leak Detection: Visual

Tank Num: 006
Container Num: 6
Year Installed: Not reported
Tank Capacity: 00001000
Tank Used for: PRODUCT
Type of Fuel: UNLEADED
Tank Construction: Not reported
Leak Detection: Visual

HAZNET:
Year: 2008
Gepaid: CAC002627043
Contact: VICTOR MARTINEZ
Telephone: 3232244133
Mailing Name: Not reported
Mailing Address: 620 LAMAR ST
Mailing City,St,Zip: LOS ANGELES, CA 900312513
Gen County: Los Angeles
TSD EPA ID: TXD077603371
TSD County: 99
Waste Category: Hydrocarbon solvents (benzene, hexane, Stoddard, Etc.)
Disposal Method: FUEL BLENDING PRIOR TO ENERGY RECOVERY AT ANOTHER SITE
Tons: 12.8
Facility County: Los Angeles

Year: 2008
Gepaid: CAC002627043
Contact: VICTOR MARTINEZ
Telephone: 3232244133
Mailing Name: Not reported
Mailing Address: 620 LAMAR ST
Mailing City,St,Zip: LOS ANGELES, CA 900312513
Gen County: Los Angeles
TSD EPA ID: NVT330010000
TSD County: 99
Waste Category: Off-specification, aged or surplus organics
Disposal Method: OTHER RECOVERY OF RECLAMATION FOR REUSE INCLUDING ACID REGENERATION, ORGANICS RECOVERY ECT
Tons: 0.58
Facility County: Los Angeles

P63 **TRANSIT MIXED CONCRETE CO-LOS** **HIST CORTESE** **U001561303**
SSE **625 LAMAR ST** **LUST** **N/A**
1/4-1/2 **LOS ANGELES, CA 90031** **HIST UST**
0.319 mi. **HAZNET**
1686 ft. **Site 2 of 2 in cluster P** **EMI**

Relative:
Lower

Actual:
300 ft.

CORTESE:
Region: CORTESE
Facility County Code: 19
Reg By: LTNKA
Reg Id: 900310134

LUST:
Region: STATE
Global Id: T0603700794
Latitude: 34.0663582
Longitude: -118.2227615
Case Type: LUST Cleanup Site
Status: Completed - Case Closed
Status Date: 07/25/1997
Lead Agency: LOS ANGELES RWQCB (REGION 4)
Case Worker: AS
Local Agency: LOS ANGELES, CITY OF
RB Case Number: 900310134
LOC Case Number: Not reported
File Location: Not reported
Potential Media Affect: Aquifer used for drinking water supply
Potential Contaminants of Concern: Diesel
Site History: Not reported

Click here to access the California GeoTracker records for this facility:

LUST:
Global Id: T0603700794
Contact Type: Local Agency Caseworker
Contact Name: TBD
Organization Name: LOS ANGELES, CITY OF
Address: 200 N. MAIN ST. RM. 970
City: LOS ANGELES
Email: Not reported
Phone Number: 2134826528

Global Id: T0603700794
Contact Type: Regional Board Caseworker
Contact Name: ADNAN SIDDIQUI
Organization Name: LOS ANGELES RWQCB (REGION 4)
Address: 320 W. 4TH ST., SUITE 200
City: LOS ANGELES
Email: asiddiqui@waterboards.ca.gov
Phone Number: Not reported

LUST:
Global Id: T0603700794
Action Type: Other
Date: 01/01/1950
Action: Leak Reported

Region: STATE

TRANSIT MIXED CONCRETE CO-LOS (Continued) **U001561303**

Global Id:	T0603797339
Latitude:	34.066386
Longitude:	-118.223244
Case Type:	LUST Cleanup Site
Status:	Completed - Case Closed
Status Date:	02/04/2008
Lead Agency:	LOS ANGELES, CITY OF
Case Worker:	PK
Local Agency:	LOS ANGELES, CITY OF
RB Case Number:	Not reported
LOC Case Number:	Not reported
File Location:	Not reported
Potential Media Affect:	Soil
Potential Contaminants of Concern:	Diesel
Site History:	Not reported

Click here to access the California GeoTracker records for this facility:

LUST:

Global Id:	T0603797339
Contact Type:	Local Agency Caseworker
Contact Name:	PATRICK KILLIAN
Organization Name:	LOS ANGELES, CITY OF
Address:	221 N FIGUEROA ST STE 1500
City:	LOS ANGELES
Email:	Not reported
Phone Number:	2134826527

Global Id:	T0603797339
Contact Type:	Regional Board Caseworker
Contact Name:	YUE RONG
Organization Name:	LOS ANGELES RWQCB (REGION 4)
Address:	320 W. 4TH ST., SUITE 200
City:	Los Angeles
Email:	yrong@waterboards.ca.gov
Phone Number:	Not reported

LUST:

Global Id:	T0603797339
Action Type:	Other
Date:	01/01/1950
Action:	Leak Reported

Global Id:	T0603797339
Action Type:	REMEDIATION
Date:	01/01/1950
Action:	Excavation

Global Id:	T0603797339
Action Type:	Other
Date:	01/01/1950
Action:	Leak Discovery

HIST UST:

Region:	STATE
Facility ID:	00000003610

TRANSIT MIXED CONCRETE CO-LOS (Continued) **U001561303**

Facility Type: Other
Other Type: READY MIXED CONCRETE
Total Tanks: 0003
Contact Name: JOHN H. YOUNG
Telephone: 2132211828
Owner Name: TRANSIT MIXED CONCRETE COMPANY
Owner Address: 4760 VALLEY BLVD.
Owner City,St,Zip: LOS ANGELES, CA 90032

Tank Num: 001
Container Num: 1
Year Installed: 1960
Tank Capacity: 00010000
Tank Used for: PRODUCT
Type of Fuel: DIESEL
Tank Construction: Not reported
Leak Detection: Stock Inventor

Tank Num: 002
Container Num: 2
Year Installed: 1960
Tank Capacity: 00010000
Tank Used for: PRODUCT
Type of Fuel: DIESEL
Tank Construction: Not reported
Leak Detection: Stock Inventor

Tank Num: 003
Container Num: 3
Year Installed: 1960
Tank Capacity: 00000500
Tank Used for: PRODUCT
Type of Fuel: Not reported
Tank Construction: Not reported
Leak Detection: Stock Inventor

HAZNET:
Year: 2001
Gepaid: CAL000140901
Contact: CHRISTINE JONES ENV MGR
Telephone: 9099745500
Mailing Name: Not reported
Mailing Address: POST OFFICE BOX 4120
Mailing City,St,Zip: ONTARIO, CA 917611067
Gen County: Los Angeles
TSD EPA ID: Not reported
TSD County: Los Angeles
Waste Category: Unspecified aqueous solution
Disposal Method: R01
Tons: 2.91
Facility County: Not reported

EMI:
Year: 1995
County Code: 19
Air Basin: SC

TRANSIT MIXED CONCRETE CO-LOS (Continued) **U001561303**

Facility ID:	25551
Air District Name:	SC
SIC Code:	3273
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	2
Reactive Organic Gases Tons/Yr:	2
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	1
Part. Matter 10 Micrometers & Smllr Tons/Yr:	1

Year:	1996
County Code:	19
Air Basin:	SC
Facility ID:	25551
Air District Name:	SC
SIC Code:	3273
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	1
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Q64
West
1/4-1/2
0.352 mi.
1860 ft.

UNION PACIFIC/RAILROAD COMPANY
1322 BROADWAY N
LOS ANGELES, CA 90012

LUST **S101583212**
CA FID UST **N/A**
SWEEPS UST

Site 1 of 2 in cluster Q

Relative:
Higher

Actual:
332 ft.

LUST:

Region:	STATE
Global Id:	T0603700512
Latitude:	34.0696471
Longitude:	-118.2318058
Case Type:	LUST Cleanup Site
Status:	Completed - Case Closed
Status Date:	12/22/1997
Lead Agency:	LOS ANGELES RWQCB (REGION 4)
Case Worker:	AT
Local Agency:	LOS ANGELES, CITY OF
RB Case Number:	900120143
LOC Case Number:	Not reported
File Location:	Not reported
Potential Media Affect:	Aquifer used for drinking water supply
Potential Contaminants of Concern:	Gasoline
Site History:	Not reported

Click here to access the California GeoTracker records for this facility:

LUST:

UNION PACIFIC/RAILROAD COMPANY (Continued) **S101583212**

Global Id: T0603700512
Contact Type: Local Agency Caseworker
Contact Name: ELOY LUNA
Organization Name: LOS ANGELES, CITY OF
Address: 200 North Main Street, Suite 1780
City: LOS ANGELES
Email: eloy.luna@lacity.org
Phone Number: Not reported

Global Id: T0603700512
Contact Type: Regional Board Caseworker
Contact Name: ARMAN TOUMARI
Organization Name: LOS ANGELES RWQCB (REGION 4)
Address: 320 WEST 4TH STREET, SUITE 200
City: LOS ANGELES
Email: atoumari@waterboards.ca.gov
Phone Number: 2135766708

LUST:
Global Id: T0603700512
Action Type: Other
Date: 01/01/1950
Action: Leak Reported

LUST REG 4:
Region: 4
Regional Board: 04
County: Los Angeles
Facility Id: 900120143
Status: Case Closed
Substance: Gasoline
Substance Quantity: Not reported
Local Case No: Not reported
Case Type: Groundwater
Abatement Method Used at the Site: VE
Global ID: T0603700512
W Global ID: W0605100649
Staff: AT
Local Agency: 19050
Cross Street: Not reported
Enforcement Type: Not reported
Date Leak Discovered: Not reported
Date Leak First Reported: 11/6/1990
Date Leak Record Entered: 4/15/1991
Date Confirmation Began: 9/9/1989
Date Leak Stopped: Not reported
Date Case Last Changed on Database: 10/14/1997
Date the Case was Closed: 12/22/1997
How Leak Discovered: Not reported
How Leak Stopped: Not reported
Cause of Leak: UNK
Leak Source: UNK
Operator: Not reported
Water System: DAVE GRIFFITH L A D W P
Well Name: Not reported

UNION PACIFIC/RAILROAD COMPANY (Continued) **S101583212**

Approx. Dist To Production Well (ft): 4610.940146921944026574655706 4
Source of Cleanup Funding: UNK
Preliminary Site Assessment Workplan Submitted: Not reported
Preliminary Site Assessment Began: 11/6/1990
Pollution Characterization Began: 12/28/1993
Remediation Plan Submitted: 11/21/1991
Remedial Action Underway: Not reported
Post Remedial Action Monitoring Began: Not reported
Enforcement Action Date: Not reported
Historical Max MTBE Date: 1/1/1965
Hist Max MTBE Conc in Groundwater: 53
Hist Max MTBE Conc in Soil: Not reported
Significant Interim Remedial Action Taken: Not reported
GW Qualifier: Not reported
Soil Qualifier: Not reported
Organization: Not reported
Owner Contact: Not reported
Responsible Party: UNION PACIFIC RAILROAD COMPANY
RP Address: ONE MARKET PLAZA, ROOM #812, SAN FRANCISCO CA 94105
Program: LUST
Lat/Long: 34.0696471 / -1
Local Agency Staff: PEJ
Beneficial Use: Not reported
Priority: Not reported
Cleanup Fund Id: Not reported
Suspended: Not reported
Assigned Name: 2600649-001GEN
Summary: 10/14/97 GW MON RPT 1997

CA FID UST:
Facility ID: 19003073
Regulated By: UTNKI
Regulated ID: 00003069
Cortese Code: Not reported
SIC Code: Not reported
Facility Phone: 4155412557
Mail To: Not reported
Mailing Address: 1322 N BROADWAY
Mailing Address 2: Not reported
Mailing City,St,Zip: LOS ANGELES 900120000
Contact: Not reported
Contact Phone: Not reported
DUNs Number: Not reported
NPDES Number: Not reported
EPA ID: Not reported
Comments: Not reported
Status: Inactive

SWEEPS UST:
Status: Not reported
Comp Number: 121
Number: Not reported
Board Of Equalization: 44-010978
Ref Date: Not reported
Act Date: Not reported
Created Date: Not reported

UNION PACIFIC/RAILROAD COMPANY (Continued) **S101583212**

Tank Status:	Not reported
Owner Tank Id:	Not reported
Swrcb Tank Id:	19-050-000121-000001
Actv Date:	Not reported
Capacity:	10000
Tank Use:	M.V. FUEL
Stg:	PRODUCT
Content:	REG UNLEADED
Number Of Tanks:	3

Status:	Not reported
Comp Number:	121
Number:	Not reported
Board Of Equalization:	44-010978
Ref Date:	Not reported
Act Date:	Not reported
Created Date:	Not reported
Tank Status:	Not reported
Owner Tank Id:	Not reported
Swrcb Tank Id:	19-050-000121-000002
Actv Date:	Not reported
Capacity:	6000
Tank Use:	M.V. FUEL
Stg:	PRODUCT
Content:	REG UNLEADED
Number Of Tanks:	Not reported

Status:	Not reported
Comp Number:	121
Number:	Not reported
Board Of Equalization:	44-010978
Ref Date:	Not reported
Act Date:	Not reported
Created Date:	Not reported
Tank Status:	Not reported
Owner Tank Id:	Not reported
Swrcb Tank Id:	19-050-000121-000003
Actv Date:	Not reported
Capacity:	10000
Tank Use:	M.V. FUEL
Stg:	PRODUCT
Content:	REG UNLEADED
Number Of Tanks:	Not reported

Q65 **UNION PACIFIC/RAILROAD CO** **HIST CORTESE** **S101296917**
West **1322 BROADWAY** **N/A**
1/4-1/2 **LOS ANGELES, CA 90012**
0.353 mi.
1863 ft. **Site 2 of 2 in cluster Q**

Relative:
Higher

Actual:
331 ft.

CORTESE:

Region:	CORTESE
Facility County Code:	19
Reg By:	LTNKA
Reg Id:	900120143

66
ENE
1/4-1/2
0.361 mi.
1904 ft.

NASA OIL SERVICE STATION
2001 BROADWAY N
LOS ANGELES, CA 90031

LUST **S103281755**
N/A

Relative:
Higher

Actual:
338 ft.

LUST:

Region:	STATE
Global Id:	T0603700799
Latitude:	34.0726209
Longitude:	-118.2202655
Case Type:	LUST Cleanup Site
Status:	Completed - Case Closed
Status Date:	11/03/2006
Lead Agency:	LOS ANGELES RWQCB (REGION 4)
Case Worker:	MB
Local Agency:	LOS ANGELES, CITY OF
RB Case Number:	900310189
LOC Case Number:	Not reported
File Location:	Not reported
Potential Media Affect:	Aquifer used for drinking water supply
Potential Contaminants of Concern:	Gasoline
Site History:	Not reported

Click here to access the California GeoTracker records for this facility:

LUST:

Global Id:	T0603700799
Contact Type:	Local Agency Caseworker
Contact Name:	ELOY LUNA
Organization Name:	LOS ANGELES, CITY OF
Address:	200 North Main Street, Suite 1780
City:	LOS ANGELES
Email:	eloy.luna@lacity.org
Phone Number:	Not reported

Global Id:	T0603700799
Contact Type:	Regional Board Caseworker
Contact Name:	MAGDY BAIADY
Organization Name:	LOS ANGELES RWQCB (REGION 4)
Address:	320 W. 4TH ST., SUITE 200
City:	LOS ANGELES
Email:	mbaiady@waterboards.ca.gov
Phone Number:	2135766699

LUST:

Global Id:	T0603700799
Action Type:	RESPONSE
Date:	04/15/2004
Action:	Monitoring Report - Quarterly

Global Id:	T0603700799
Action Type:	RESPONSE
Date:	01/15/2004
Action:	Monitoring Report - Quarterly

Global Id:	T0603700799
Action Type:	ENFORCEMENT
Date:	11/03/2006

NASA OIL SERVICE STATION (Continued) **S103281755**

Action: Closure/No Further Action Letter

Global Id: T0603700799
Action Type: RESPONSE
Date: 05/26/2005
Action: Interim Remedial Action Report

Global Id: T0603700799
Action Type: RESPONSE
Date: 08/08/2003
Action: Soil and Water Investigation Workplan

Global Id: T0603700799
Action Type: RESPONSE
Date: 04/15/2006
Action: Monitoring Report - Quarterly

Global Id: T0603700799
Action Type: RESPONSE
Date: 07/15/2002
Action: Soil and Water Investigation Report

Global Id: T0603700799
Action Type: RESPONSE
Date: 07/15/2002
Action: Monitoring Report - Quarterly

Global Id: T0603700799
Action Type: RESPONSE
Date: 08/15/2002
Action: CAP/RAP - Feasibility Study Report

Global Id: T0603700799
Action Type: RESPONSE
Date: 10/15/2003
Action: Monitoring Report - Quarterly

Global Id: T0603700799
Action Type: REMEDIATION
Date: 01/01/1950
Action: Excavation

Global Id: T0603700799
Action Type: RESPONSE
Date: 01/15/2005
Action: Monitoring Report - Quarterly

Global Id: T0603700799
Action Type: RESPONSE
Date: 02/15/2006
Action: Well Installation Report

Global Id: T0603700799
Action Type: ENFORCEMENT
Date: 01/29/2001
Action: 13267 Requirement

NASA OIL SERVICE STATION (Continued) **S103281755**

Global Id: T0603700799
Action Type: RESPONSE
Date: 07/15/2003
Action: Monitoring Report - Quarterly

Global Id: T0603700799
Action Type: RESPONSE
Date: 10/15/2004
Action: Monitoring Report - Quarterly

Global Id: T0603700799
Action Type: Other
Date: 01/01/1950
Action: Leak Discovery

Global Id: T0603700799
Action Type: RESPONSE
Date: 10/15/2005
Action: Monitoring Report - Quarterly

Global Id: T0603700799
Action Type: RESPONSE
Date: 04/15/2003
Action: Monitoring Report - Quarterly

Global Id: T0603700799
Action Type: RESPONSE
Date: 07/15/2004
Action: Monitoring Report - Quarterly

Global Id: T0603700799
Action Type: RESPONSE
Date: 07/15/2005
Action: Monitoring Report - Quarterly

Global Id: T0603700799
Action Type: RESPONSE
Date: 01/15/2006
Action: Monitoring Report - Quarterly

Global Id: T0603700799
Action Type: RESPONSE
Date: 01/10/2003
Action: Monitoring Report - Quarterly

Global Id: T0603700799
Action Type: RESPONSE
Date: 01/10/2003
Action: Soil and Water Investigation Report

Global Id: T0603700799
Action Type: ENFORCEMENT
Date: 10/11/2006
Action: Site Visit / Inspection / Sampling

Global Id: T0603700799
Action Type: ENFORCEMENT

NASA OIL SERVICE STATION (Continued) **S103281755**

Date: 10/13/2006
Action: Notification - Preclosure

Global Id: T0603700799
Action Type: RESPONSE
Date: 04/15/2005
Action: Monitoring Report - Quarterly

Global Id: T0603700799
Action Type: RESPONSE
Date: 07/15/2006
Action: Monitoring Report - Quarterly

Global Id: T0603700799
Action Type: Other
Date: 01/01/1950
Action: Leak Reported

Global Id: T0603700799
Action Type: RESPONSE
Date: 04/15/2002
Action: Monitoring Report - Quarterly

LUST REG 4:
Region: 4
Regional Board: 04
County: Los Angeles
Facility Id: 900310189
Status: Pollution Characterization
Substance: Gasoline
Substance Quantity: Not reported
Local Case No: Not reported
Case Type: Groundwater
Abatement Method Used at the Site: Not reported
Global ID: T0603700799
W Global ID: W0605100649
Staff: MB
Local Agency: 19050
Cross Street: AVENUE 20
Enforcement Type: DLLET
Date Leak Discovered: 9/1/1987
Date Leak First Reported: 7/15/1995
Date Leak Record Entered: 8/25/1995
Date Confirmation Began: Not reported
Date Leak Stopped: Not reported
Date Case Last Changed on Database: 8/14/2002
Date the Case was Closed: Not reported
How Leak Discovered: Subsurface Monitoring
How Leak Stopped: Not reported
Cause of Leak: UNK
Leak Source: UNK
Operator: Not reported
Water System: DAVE GRIFFITH L A D W P
Well Name: Not reported
Approx. Dist To Production Well (ft): 7998.6181515693325363606721 49
Source of Cleanup Funding: UNK

NASA OIL SERVICE STATION (Continued) **S103281755**

Preliminary Site Assessment Workplan Submitted:	6/1/1991
Preliminary Site Assessment Began:	7/15/1995
Pollution Characterization Began:	9/21/2000
Remediation Plan Submitted:	Not reported
Remedial Action Underway:	Not reported
Post Remedial Action Monitoring Began:	Not reported
Enforcement Action Date:	1/29/2001
Historical Max MTBE Date:	10/21/1998
Hist Max MTBE Conc in Groundwater:	65000
Hist Max MTBE Conc in Soil:	Not reported
Significant Interim Remedial Action Taken:	Not reported
GW Qualifier:	Not reported
Soil Qualifier:	Not reported
Organization:	Not reported
Owner Contact:	Not reported
Responsible Party:	NOEL ANENBERG
RP Address:	17071 VENTURA BLVD #208
Program:	LUST
Lat/Long:	34.0726209 / -1
Local Agency Staff:	PEJ
Beneficial Use:	Not reported
Priority:	LOP/HIGH - ADMINISTRATIVE (CLOSURE/SB2004/ENFORCEMENT)
Cleanup Fund Id:	Not reported
Suspended:	Not reported
Assigned Name:	2600649-001GEN
Summary:	12/14/00 4TH QTR GW MON RPT 2000; 12/22/00 SITE ASSESSMENT WP; 2/9/01 REMEDIAL ACTION PLAN; 4/12/01 1ST QTR GW MON RPT 2001

R67 **CHAMPION IRRIGATION PRODUCTS INC** **HAZNET** **S103631093**
SW **1460 NAUD ST** **ENVIROSTOR** **N/A**
1/4-1/2 **LOS ANGELES, CA 90012**
0.399 mi.
2105 ft. **Site 1 of 3 in cluster R**

Relative:
Lower

Actual:
302 ft.

HAZNET:

Year:	2004
Gepaid:	CAD981684087
Contact:	DON PETROTTA PRESIDENT
Telephone:	3232212108
Mailing Name:	Not reported
Mailing Address:	3141 N MAXSON RD
Mailing City,St,Zip:	EL MONTE, CA 917320000
Gen County:	Los Angeles
TSD EPA ID:	CAD981696420
TSD County:	Los Angeles
Waste Category:	Waste oil and mixed oil
Disposal Method:	R01
Tons:	1.25
Facility County:	Not reported

Year:	2003
Gepaid:	CAD981684087
Contact:	DON PETROTTA PRESIDENT
Telephone:	3232212108
Mailing Name:	Not reported
Mailing Address:	3141 N MAXSON RD
Mailing City,St,Zip:	EL MONTE, CA 917320000
Gen County:	Los Angeles

CHAMPION IRRIGATION PRODUCTS INC (Continued) **S103631093**

TSD EPA ID: CAT080033681
TSD County: Los Angeles
Waste Category: Other organic solids
Disposal Method: D80
Tons: 1.05
Facility County: Los Angeles

Year: 2002
Gepaid: CAD981684087
Contact: DON PETROTTA PRESIDENT
Telephone: 3232212108
Mailing Name: Not reported
Mailing Address: 1460 NAUD ST
Mailing City,St,Zip: LOS ANGELES, CA 900121919
Gen County: Los Angeles
TSD EPA ID: Not reported
TSD County: Los Angeles
Waste Category: Other organic solids
Disposal Method: H01
Tons: 0.80
Facility County: Not reported

Year: 2002
Gepaid: CAD981684087
Contact: DON PETROTTA PRESIDENT
Telephone: 3232212108
Mailing Name: Not reported
Mailing Address: 1460 NAUD ST
Mailing City,St,Zip: LOS ANGELES, CA 900121919
Gen County: Los Angeles
TSD EPA ID: Not reported
TSD County: Los Angeles
Waste Category: Oil/water separation sludge
Disposal Method: R01
Tons: 0.50
Facility County: Not reported

Year: 2001
Gepaid: CAD981684087
Contact: DON PETROTTA PRESIDENT
Telephone: 3232212108
Mailing Name: Not reported
Mailing Address: 1460 NAUD ST
Mailing City,St,Zip: LOS ANGELES, CA 900121919
Gen County: Los Angeles
TSD EPA ID: Not reported
TSD County: Los Angeles
Waste Category: Other organic solids
Disposal Method: H01
Tons: 1
Facility County: Not reported

Click this hyperlink while viewing on your computer to access
11 additional CA_HAZNET: record(s) in the EDR Site Report.

ENVIROSTOR:
Site Type: Evaluation

CHAMPION IRRIGATION PRODUCTS INC (Continued) **S103631093**

Site Type Detailed: Evaluation
Acres: Not reported
NPL: NO
Regulatory Agencies: NONE SPECIFIED
Lead Agency: NONE SPECIFIED
Program Manager: Not reported
Supervisor: Referred - Not Assigned
Division Branch: Cleanup Cypress
Facility ID: 19340795
Site Code: Not reported
Assembly: 51
Senate: 24
Special Program: Not reported
Status: Refer: 1248 Local Agency
Status Date: 02/13/2004
Restricted Use: NO
Site Mgmt. Req.: NONE SPECIFIED
Funding: Not Applicable
Latitude: 34.06637
Longitude: -118.2304
APN: NONE SPECIFIED
Past Use: NONE SPECIFIED
Potential COC: NONE SPECIFIED
Confirmed COC: NONE SPECIFIED
Potential Description: NONE SPECIFIED
Alias Name: 19340795
Alias Type: Envirostor ID Number

Completed Info:
Completed Area Name: Not reported
Completed Sub Area Name: Not reported
Completed Document Type: Not reported
Completed Date: Not reported
Comments: Not reported

Future Area Name: Not reported
Future Sub Area Name: Not reported
Future Document Type: Not reported
Future Due Date: Not reported
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported

68
NNE
1/4-1/2
0.413 mi.
2183 ft.

VICTOR INDUSTRIAL BATTERY
138 N SAN FERNANDO RD
LOS ANGELES, CA 90031

LA Co. Site Mitigation **S105689620**
DEED **N/A**
VCP
ENVIROSTOR

Relative:
Higher

Actual:
343 ft.

LA Co. Site Mitigation:
Facility ID: Not reported
Site ID: SD0010405
Case ID: RO0000597
Abated: Yes
Assigned To: Don Thompson
Entered Date: 05/11/2004

VICTOR INDUSTRIAL BATTERY (Continued) **S105689620**

Abated Date: 03/07/1994

DEED:
Area: PROJECT WIDE
Sub Area: Not reported
Site Type: VOLUNTARY CLEANUP
Status: CERTIFIED O&M - LAND USE RESTRICTIONS ONLY
Deed Date(s): 03/27/1995

VCP:
Facility ID: 19360528
Site Type: Voluntary Cleanup
Site Type Detail: Voluntary Cleanup
Site Mgmt. Req.: NONE SPECIFIED
Acres: 0.1
National Priorities List: NO
Cleanup Oversight Agencies: NONE SPECIFIED
Lead Agency: NONE SPECIFIED
Lead Agency Description: Not reported
Project Manager: Manjul Bose
Supervisor: Rita Kamat
Division Branch: Cleanup Chatsworth
Site Code: 300547
Assembly: 51
Senate: 24
Special Programs Code: Voluntary Cleanup Program
Status: Certified O&M - Land Use Restrictions Only
Status Date: 03/29/1995
Restricted Use: YES
Funding: Responsible Party
Lat/Long: 34.07543 / -118.2214
APN: 5447-014-024
Past Use: BATTERY RECLAMATION
Potential COC: 10015, 10097, 10119, 10120, 10124, 10193, 10194, 20001, 20009, 20011, 20013, 20024, 30013
Confirmed COC: NONE SPECIFIED
Potential Description: SOIL, SV
Alias Name: VICTOR INDUSTRIAL BATTERY
Alias Type: Alternate Name
Alias Name: VICTOR'S INDUSTRIAL BATTERIES
Alias Type: Alternate Name
Alias Name: 5447-014-024
Alias Type: APN
Alias Name: 110033613392
Alias Type: EPA (FRS #)
Alias Name: 300547
Alias Type: Project Code (Site Code)
Alias Name: 19360528
Alias Type: Envirostor ID Number

Completed Info:
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Land Use Restriction
Completed Date: 03/27/1995
Comments: DTSC enters into a Voluntary Cleanup Agreement with the Project Proponent. Under the terms of the Agreement, the Project Proponent

VICTOR INDUSTRIAL BATTERY (Continued) **S105689620**

will prepare a Deed Restriction in the manner specified by DTSC.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Voluntary Cleanup Agreement
Completed Date: 03/29/1995
Comments: The Responsible Party recorded a Deed Restriction notifica- tion with the County of Los Angeles on March 27, 1995 and a copy has been provided to the Department. The Department has reviewed the Covenant and recommended that "No Further Action" is warranted provided the current cap is in place. Based on the Covenant, the Department should be notified prior to any soil disturbance at the site.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Voluntary Cleanup Agreement
Completed Date: 03/27/1995
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Other Report
Completed Date: 07/05/2011
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Site Screening
Completed Date: 03/16/1994
Comments: The Department received a referral dated March 8, 1994 from the County of Los Angeles, Fire Department. The site was previously a battery recycler whose owner, Victor Pena, was under investigation by LA County and the LA City Attorney's Office for the illegal discharge of hazardous waste onto the subject property. The waste materials were being discharged into an unlined pit in the rear of the property and the driveway. The RP was subsequently convicted of illegal discharge of hazardous waste, sentenced and ordered to remediate the site. The "Subsurface Investigation Report" indicates that the maximum concentration of lead in the soil is 30,000 mg/kg and minimum pH is 0.48. RP has not been compiled with the County's directives. Therefore, the site was referred to the Department. Due to the evidence of onsite contamination, the Department recommends a PEA. The RP will be notified of this recommendation.

Future Area Name: Not reported
Future Sub Area Name: Not reported
Future Document Type: Not reported
Future Due Date: Not reported
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported

ENVIROSTOR:
Site Type: Voluntary Cleanup
Site Type Detailed: Voluntary Cleanup

VICTOR INDUSTRIAL BATTERY (Continued) **S105689620**

Acres:	0.1
NPL:	NO
Regulatory Agencies:	NONE SPECIFIED
Lead Agency:	NONE SPECIFIED
Program Manager:	Manjul Bose
Supervisor:	Rita Kamat
Division Branch:	Cleanup Chatsworth
Facility ID:	19360528
Site Code:	300547
Assembly:	51
Senate:	24
Special Program:	Voluntary Cleanup Program
Status:	Certified O&M - Land Use Restrictions Only
Status Date:	03/29/1995
Restricted Use:	YES
Site Mgmt. Req.:	NONE SPECIFIED
Funding:	Responsible Party
Latitude:	34.07543
Longitude:	-118.2214
APN:	5447-014-024
Past Use:	BATTERY RECLAMATION
Potential COC:	10015, 10097, 10119, 10120, 10124, 10193, 10194, 20001, 20009, 20011, 20013, 20024, 30013
Confirmed COC:	NONE SPECIFIED
Potential Description:	SOIL, SV
Alias Name:	VICTOR INDUSTRIAL BATTERY
Alias Type:	Alternate Name
Alias Name:	VICTOR'S INDUSTRIAL BATTERIES
Alias Type:	Alternate Name
Alias Name:	5447-014-024
Alias Type:	APN
Alias Name:	110033613392
Alias Type:	EPA (FRS #)
Alias Name:	300547
Alias Type:	Project Code (Site Code)
Alias Name:	19360528
Alias Type:	Envirostor ID Number

Completed Info:

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Land Use Restriction
Completed Date:	03/27/1995
Comments:	DTSC enters into a Voluntary Cleanup Agreement with the Project Proponent. Under the terms of the Agreement, the Project Proponent will prepare a Deed Restriction in the manner specified by DTSC.
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Voluntary Cleanup Agreement
Completed Date:	03/29/1995
Comments:	The Responsible Party recorded a Deed Restriction notifica- tion with the County of Los Angeles on March 27, 1995 and a copy has been provided to the Department. The Department has reviewed the Covenant and recommended that "No Further Action" is warranted provided the current cap is in place. Based on the Covenant, the Department should be notified prior to any soil disturbance at the site.

VICTOR INDUSTRIAL BATTERY (Continued) **S105689620**

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Voluntary Cleanup Agreement
Completed Date:	03/27/1995
Comments:	Not reported

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Other Report
Completed Date:	07/05/2011
Comments:	Not reported

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Site Screening
Completed Date:	03/16/1994
Comments:	The Department received a referral dated March 8, 1994 from the County of Los Angeles, Fire Department. The site was previously a battery recycler whose owner, Victor Pena, was under investigation by LA County and the LA City Attorney's Office for the illegal discharge of hazardous waste onto the subject property. The waste materials were being discharged into an unlined pit in the rear of the property and the driveway. The RP was subsequently convicted of illegal discharge of hazardous waste, sentenced and ordered to remediate the site. The "Subsurface Investigation Report" indicates that the maximum concentration of lead in the soil is 30,000 mg/kg and minimum pH is 0.48. RP has not been compiled with the County's directives. Therefore, the site was referred to the Department. Due to the evidence of onsite contamination, the Department recommends a PEA. The RP will be notified of this recommendation.

Future Area Name:	Not reported
Future Sub Area Name:	Not reported
Future Document Type:	Not reported
Future Due Date:	Not reported
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported

69
West
1/4-1/2
0.416 mi.
2196 ft.

DOMENICH BASSO, INC.
1201 N BROADWAY
LOS ANGELES, CA 90012

LUST **1000207931**
CA FID UST **N/A**
HIST UST
SWEEPS UST
HAZNET

Relative:
Higher

Actual:
327 ft.

LUST:

Region:	STATE
Global Id:	T0603790010
Latitude:	34.069516
Longitude:	-118.233608
Case Type:	LUST Cleanup Site
Status:	Completed - Case Closed
Status Date:	11/28/2001
Lead Agency:	LOS ANGELES, CITY OF
Case Worker:	EL
Local Agency:	LOS ANGELES, CITY OF

DOMENICH BASSO, INC. (Continued) **1000207931**

RB Case Number: 900120452
LOC Case Number: Not reported
File Location: Not reported
Potential Media Affect: Soil
Potential Contaminants of Concern: Gasoline
Site History: Not reported

Click here to access the California GeoTracker records for this facility:

LUST:
Global Id: T0603790010
Contact Type: Local Agency Caseworker
Contact Name: ELOY LUNA
Organization Name: LOS ANGELES, CITY OF
Address: 200 North Main Street, Suite 1780
City: LOS ANGELES
Email: eloy.luna@lacity.org
Phone Number: Not reported

Global Id: T0603790010
Contact Type: Regional Board Caseworker
Contact Name: YUE RONG
Organization Name: LOS ANGELES RWQCB (REGION 4)
Address: 320 W. 4TH ST., SUITE 200
City: Los Angeles
Email: yrong@waterboards.ca.gov
Phone Number: Not reported

LUST:
Global Id: T0603790010
Action Type: Other
Date: 01/01/1950
Action: Leak Stopped

Global Id: T0603790010
Action Type: Other
Date: 01/01/1950
Action: Leak Reported

Global Id: T0603790010
Action Type: Other
Date: 01/01/1950
Action: Leak Discovery

LUST REG 4:
Region: 4
Regional Board: 04
County: Los Angeles
Facility Id: 900120452
Status: Pollution Characterization
Substance: Gasoline
Substance Quantity: Not reported
Local Case No: Not reported
Case Type: Soil
Abatement Method Used at the Site: Not reported
Global ID: T0603790010

DOMENICH BASSO, INC. (Continued) **1000207931**

W Global ID:	Not reported	
Staff:	UNK	
Local Agency:	19050	
Cross Street:	BISHOPS RD	
Enforcement Type:	Not reported	
Date Leak Discovered:	3/26/1991	
Date Leak First Reported:		1/4/2001
Date Leak Record Entered:	Not reported	
Date Confirmation Began:	Not reported	
Date Leak Stopped:	3/26/1991	
Date Case Last Changed on Database:		1/4/2001
Date the Case was Closed:		Not reported
How Leak Discovered:	Repair Tank	
How Leak Stopped:	Not reported	
Cause of Leak:	UNK	
Leak Source:	Tank	
Operator:	MICHAEL NICKOLOFF	
Water System:	Not reported	
Well Name:	Not reported	
Approx. Dist To Production Well (ft):		4135.2735634550055200882728 63
Source of Cleanup Funding:		Tank
Preliminary Site Assessment Workplan Submitted:		Not reported
Preliminary Site Assessment Began:		Not reported
Pollution Characterization Began:		1/4/2001
Remediation Plan Submitted:		Not reported
Remedial Action Underway:		Not reported
Post Remedial Action Monitoring Began:		Not reported
Enforcement Action Date:		Not reported
Historical Max MTBE Date:		Not reported
Hist Max MTBE Conc in Groundwater:		Not reported
Hist Max MTBE Conc in Soil:		Not reported
Significant Interim Remedial Action Taken:		Not reported
GW Qualifier:	Not reported	
Soil Qualifier:	Not reported	
Organization:	Not reported	
Owner Contact:	Not reported	
Responsible Party:	DOMENICH BASSO, INC.	
RP Address:	1201 N. BROADWAY, LOS ANGELES, CA 90012	
Program:	LUST	
Lat/Long:	34.068998 / -1	
Local Agency Staff:	PEJ	
Beneficial Use:	Not reported	
Priority:	Not reported	
Cleanup Fund Id:	Not reported	
Suspended:	Not reported	
Assigned Name:	Not reported	
Summary:	Not reported	

CA FID UST:

Facility ID:	19028945
Regulated By:	UTNKI
Regulated ID:	00020557
Cortese Code:	Not reported
SIC Code:	Not reported
Facility Phone:	2132212151
Mail To:	Not reported
Mailing Address:	1201 N BROADWAY

DOMENICH BASSO, INC. (Continued) **1000207931**

Mailing Address 2: Not reported
Mailing City,St,Zip: LOS ANGELES 900120000
Contact: Not reported
Contact Phone: Not reported
DUNs Number: Not reported
NPDES Number: Not reported
EPA ID: Not reported
Comments: Not reported
Status: Inactive

HIST UST:
Region: STATE
Facility ID: 00000020557
Facility Type: Other
Other Type: AUTO DEALERSHIP
Total Tanks: 0003
Contact Name: JOE BOCCALERO
Telephone: 2132212151
Owner Name: DOMENICH BASSO, INC.
Owner Address: 1201 N BROADWAY
Owner City,St,Zip: LOS ANGELES, CA 90012

Tank Num: 001
Container Num: 3
Year Installed: Not reported
Tank Capacity: 00000000
Tank Used for: WASTE
Type of Fuel: Not reported
Tank Construction: Not reported
Leak Detection: None

Tank Num: 002
Container Num: 1
Year Installed: 1949
Tank Capacity: 00001000
Tank Used for: PRODUCT
Type of Fuel: UNLEADED
Tank Construction: Not reported
Leak Detection: Stock Inventor

Tank Num: 003
Container Num: 2
Year Installed: Not reported
Tank Capacity: 00000000
Tank Used for: WASTE
Type of Fuel: WASTE OIL
Tank Construction: Not reported
Leak Detection: None

SWEEPS UST:
Status: Not reported
Comp Number: 1421
Number: Not reported
Board Of Equalization: 44-011784
Ref Date: Not reported
Act Date: Not reported

DOMENICH BASSO, INC. (Continued) **1000207931**

Created Date: Not reported
Tank Status: Not reported
Owner Tank Id: Not reported
Swrcb Tank Id: 19-050-001421-000001
Actv Date: Not reported
Capacity: 1
Tank Use: CHEMICAL
Stg: PRODUCT
Content: UNKNOWN
Number Of Tanks: 3

Status: Not reported
Comp Number: 1421
Number: Not reported
Board Of Equalization: 44-011784
Ref Date: Not reported
Act Date: Not reported
Created Date: Not reported
Tank Status: Not reported
Owner Tank Id: Not reported
Swrcb Tank Id: 19-050-001421-000002
Actv Date: Not reported
Capacity: 1000
Tank Use: M.V. FUEL
Stg: PRODUCT
Content: REG UNLEADED
Number Of Tanks: Not reported

Status: Not reported
Comp Number: 1421
Number: Not reported
Board Of Equalization: 44-011784
Ref Date: Not reported
Act Date: Not reported
Created Date: Not reported
Tank Status: Not reported
Owner Tank Id: Not reported
Swrcb Tank Id: 19-050-001421-000003
Actv Date: Not reported
Capacity: 1
Tank Use: OIL
Stg: WASTE
Content: WASTE OIL
Number Of Tanks: Not reported

HAZNET:
Year: 2003
Gepaid: CAC002572688
Contact: JOHN ADAMS
Telephone: 2136223500
Mailing Name: Not reported
Mailing Address: 800 WILSHIRE BLVD STE 200
Mailing City,St,Zip: LOS ANGELES, CA 90017
Gen County: Los Angeles
TSD EPA ID: CAD009007626
TSD County: Los Angeles
Waste Category: Asbestos containing waste

DOMENICH BASSO, INC. (Continued) **1000207931**

Disposal Method: D80
Tons: 16.85
Facility County: Los Angeles

Year: 2003
Gepaid: CAD028456523
Contact: JUAN LOPEZ/OFFICE MGR
Telephone: 3232212151
Mailing Name: Not reported
Mailing Address: 1201 N BROADWAY
Mailing City,St,Zip: LOS ANGELES, CA 900121407
Gen County: Los Angeles
TSD EPA ID: CAT080013352
TSD County: Los Angeles
Waste Category: Unspecified organic liquid mixture
Disposal Method: R01
Tons: 0.5
Facility County: Los Angeles

Year: 2003
Gepaid: CAD028456523
Contact: JUAN LOPEZ/OFFICE MGR
Telephone: 3232212151
Mailing Name: Not reported
Mailing Address: 1201 N BROADWAY
Mailing City,St,Zip: LOS ANGELES, CA 900121407
Gen County: Los Angeles
TSD EPA ID: CAT080013352
TSD County: Los Angeles
Waste Category: Oil/water separation sludge
Disposal Method: R01
Tons: 4.57
Facility County: Los Angeles

Year: 2003
Gepaid: CAD028456523
Contact: JUAN LOPEZ/OFFICE MGR
Telephone: 3232212151
Mailing Name: Not reported
Mailing Address: 1201 N BROADWAY
Mailing City,St,Zip: LOS ANGELES, CA 900121407
Gen County: Los Angeles
TSD EPA ID: CAT080013352
TSD County: Los Angeles
Waste Category: Waste oil and mixed oil
Disposal Method: R01
Tons: 3.66
Facility County: Los Angeles

Year: 2002
Gepaid: CAD028456523
Contact: JUAN LOPEZ/OFFICE MGR
Telephone: 3232212151
Mailing Name: Not reported
Mailing Address: 1201 N BROADWAY
Mailing City,St,Zip: LOS ANGELES, CA 900121407
Gen County: Los Angeles

DOMENICH BASSO, INC. (Continued) **1000207931**

TSD EPA ID: Not reported
TSD County: Los Angeles
Waste Category: Oil/water separation sludge
Disposal Method: R01
Tons: 6.14
Facility County: Not reported

Click this hyperlink while viewing on your computer to access
24 additional CA_HAZNET: record(s) in the EDR Site Report.

R70 **CALIFORNIA BRASS MANUFACTURING CO.** **ENVIROSTOR** **1000252312**
SW **1447 NAUD STREET** **N/A**
1/4-1/2 **LOS ANGELES, CA 90012**
0.416 mi.
2199 ft. **Site 2 of 3 in cluster R**

Relative:
Lower

Actual:
302 ft.

ENVIROSTOR:
Site Type: Historical
Site Type Detailed: * Historical
Acres: Not reported
NPL: NO
Regulatory Agencies: NONE SPECIFIED
Lead Agency: NONE SPECIFIED
Program Manager: Not reported
Supervisor: Referred - Not Assigned
Division Branch: Cleanup Chatsworth
Facility ID: 19330209
Site Code: Not reported
Assembly: 51
Senate: 24
Special Program: * Site Char & Assess Grant (CERCLA 104)
Status: Refer: Other Agency
Status Date: 08/15/1995
Restricted Use: NO
Site Mgmt. Req.: NONE SPECIFIED
Funding: Not reported
Latitude: 34.06666
Longitude: -118.2307
APN: 5409004011
Past Use: NONE SPECIFIED
Potential COC: 10034, 10060, 10067, 10198
Confirmed COC: NONE SPECIFIED
Potential Description: NONE SPECIFIED
Alias Name: WESTERN BRASS WORKS (1932-PRESENT)
Alias Type: Alternate Name
Alias Name: 5409004011
Alias Type: APN
Alias Name: CAD981170186
Alias Type: CERCLIS ID
Alias Name: 19330209
Alias Type: Envirostor ID Number

Completed Info:
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: * Discovery
Completed Date: 09/15/1981
Comments: FACILITY IDENTIFIED ID BY PAC TEL DIR 1947. METAL.

CALIFORNIA BRASS MANUFACTURING CO. (Continued) **1000252312**

Future Area Name:	Not reported
Future Sub Area Name:	Not reported
Future Document Type:	Not reported
Future Due Date:	Not reported
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported

R71 **CALIFORNIA BRASS MFG** **CERC-NFRAP** **1003878829**
SW **1447 NAUD ST** **CAD981170186**
1/4-1/2 **LOS ANGELES, CA 90012**
0.416 mi.
2199 ft. **Site 3 of 3 in cluster R**

Relative:
Lower

Actual:
302 ft.

CERC-NFRAP:

Site ID:	0902273
Federal Facility:	Not a Federal Facility
NPL Status:	Not on the NPL
Non NPL Status:	NFRAP-Site does not qualify for the NPL based on existing information

CERCLIS-NFRAP Site Contact Details:

Contact Sequence ID:	13053701.00000
Person ID:	9271184.00000
Contact Sequence ID:	13289540.00000
Person ID:	13003854.00000
Contact Sequence ID:	13295135.00000
Person ID:	13003858.00000
Contact Sequence ID:	13300993.00000
Person ID:	13004003.00000

CERCLIS-NFRAP Site Alias Name(s):

Alias Name:	WESTERN BRASS IND (OWNER)
Alias Address:	1309 W SEPULVEDA BLVD TORRANCE, CA 90501
Alias Name:	WESTERN BRASS WORKS (OPER)
Alias Address:	1440 N SPRING ST LOS ANGELES, CA 90012

CERCLIS-NFRAP Assessment History:

Action:	DISCOVERY
Date Started:	Not reported
Date Completed:	01/01/1986
Priority Level:	Not reported
Action:	ARCHIVE SITE
Date Started:	Not reported
Date Completed:	06/01/1986
Priority Level:	Not reported
Action:	PRELIMINARY ASSESSMENT

CALIFORNIA BRASS MFG (Continued) **1003878829**

Date Started: Not reported
Date Completed: 06/01/1986
Priority Level: NFRAP-Site does not qualify for the NPL based on existing information

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72
WSW
1/4-1/2
0.423 mi.
2235 ft.

WETSERN BRASSWORKS **LUST** **S108997107**
1440 SPRING ST. **N/A**
LOS ANGELES, CA 90012

Relative:
Lower

Actual:
298 ft.

LUST:
Region: STATE
Global Id: T0603799555
Latitude: 34.067076
Longitude: -118.23117
Case Type: LUST Cleanup Site
Status: Completed - Case Closed
Status Date: 12/17/2009
Lead Agency: LOS ANGELES RWQCB (REGION 4)
Case Worker: CET
Local Agency: LOS ANGELES, CITY OF
RB Case Number: 900120470
LOC Case Number: 35312
File Location: Regional Board
Potential Media Affect: Soil
Potential Contaminants of Concern: Diesel
Site History: Not reported

Click here to access the California GeoTracker records for this facility:

LUST:
Global Id: T0603799555
Contact Type: Local Agency Caseworker
Contact Name: PATRICK KILLIAN
Organization Name: LOS ANGELES, CITY OF
Address: 221 N FIGUEROA ST STE 1500
City: LOS ANGELES
Email: Not reported
Phone Number: 2134826527

Global Id: T0603799555
Contact Type: Regional Board Caseworker
Contact Name: CHANDRA TYLER
Organization Name: LOS ANGELES RWQCB (REGION 4)
Address: Not reported
City: R4 UNKNOWN
Email: cetyler@waterboards.ca.gov
Phone Number: Not reported

LUST:
Global Id: T0603799555
Action Type: Other
Date: 01/01/1950
Action: Leak Reported

Global Id: T0603799555
Action Type: ENFORCEMENT
Date: 09/29/2009

WETSERN BRASSWORKS (Continued) **S108997107**

Action: Site Visit / Inspection / Sampling

Global Id: T0603799555
Action Type: ENFORCEMENT
Date: 09/16/2008
Action: Notice to Comply

Global Id: T0603799555
Action Type: ENFORCEMENT
Date: 12/17/2009
Action: Closure/No Further Action Letter

Global Id: T0603799555
Action Type: Other
Date: 01/01/1950
Action: Leak Discovery

Global Id: T0603799555
Action Type: RESPONSE
Date: 04/14/2008
Action: Other Report / Document

Global Id: T0603799555
Action Type: REMEDIATION
Date: 01/01/1950
Action: Excavation

Global Id: T0603799555
Action Type: ENFORCEMENT
Date: 03/12/2008
Action: 13267 Requirement

Global Id: T0603799555
Action Type: ENFORCEMENT
Date: 10/07/2009
Action: Notification - Preclosure

S73 **EMPIRE CHEMICAL CO., INC.** **HIST CORTESE** **U001561274**
SSE **715 LAMAR ST** **LUST** **N/A**
1/4-1/2 **LOS ANGELES, CA 90031** **HIST UST**
0.429 mi. **EMI**
2267 ft. **Site 1 of 3 in cluster S** **ENVIROSTOR**

Relative:
Lower

Actual:
293 ft.

CORTESE:
Region: CORTESE
Facility County Code: 19
Reg By: LTNKA
Reg Id: 900310116

LUST:
Region: STATE
Global Id: T0603700792
Latitude: 34.0644783
Longitude: -118.2235455
Case Type: LUST Cleanup Site
Status: Completed - Case Closed

EMPIRE CHEMICAL CO., INC. (Continued) **U001561274**

Status Date:	05/08/1997
Lead Agency:	LOS ANGELES RWQCB (REGION 4)
Case Worker:	YR
Local Agency:	LOS ANGELES, CITY OF
RB Case Number:	900310116
LOC Case Number:	Not reported
File Location:	Not reported
Potential Media Affect:	Soil
Potential Contaminants of Concern:	Kerosene
Site History:	Not reported

Click here to access the California GeoTracker records for this facility:

LUST:

Global Id:	T0603700792
Contact Type:	Regional Board Caseworker
Contact Name:	YUE RONG
Organization Name:	LOS ANGELES RWQCB (REGION 4)
Address:	320 W. 4TH ST., SUITE 200
City:	Los Angeles
Email:	yrong@waterboards.ca.gov
Phone Number:	Not reported

Global Id:	T0603700792
Contact Type:	Local Agency Caseworker
Contact Name:	ELOY LUNA
Organization Name:	LOS ANGELES, CITY OF
Address:	200 North Main Street, Suite 1780
City:	LOS ANGELES
Email:	eloy.luna@lacity.org
Phone Number:	Not reported

LUST:

Global Id:	T0603700792
Action Type:	Other
Date:	01/01/1950
Action:	Leak Discovery

Global Id:	T0603700792
Action Type:	Other
Date:	01/01/1950
Action:	Leak Reported

HIST UST:

Region:	STATE
Facility ID:	00000004954
Facility Type:	Other
Other Type:	MATERIAL STORAGE TAN
Total Tanks:	0001
Contact Name:	WILFRED MALET
Telephone:	2132254186
Owner Name:	EMPIRE CHEMICAL CO., INC.
Owner Address:	715 LAMAR ST.
Owner City,St,Zip:	LOS ANGELES, CA 90031

Tank Num:	001

EMPIRE CHEMICAL CO., INC. (Continued) **U001561274**

Container Num: 1
Year Installed: 1960
Tank Capacity: 00007500
Tank Used for: PRODUCT
Type of Fuel: Not reported
Tank Construction: Not reported
Leak Detection: Stock Inventor

EMI:

Year:	1987
County Code:	19
Air Basin:	SC
Facility ID:	7670
Air District Name:	SC
SIC Code:	2834
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	1990
County Code:	19
Air Basin:	SC
Facility ID:	7670
Air District Name:	SC
SIC Code:	2899
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

ENVIROSTOR:

Site Type:	Historical
Site Type Detailed:	* Historical
Acres:	Not reported
NPL:	NO
Regulatory Agencies:	NONE SPECIFIED
Lead Agency:	NONE SPECIFIED
Program Manager:	Not reported
Supervisor:	* Mmonroy
Division Branch:	Cleanup Chatsworth
Facility ID:	19281206
Site Code:	Not reported
Assembly:	51

EMPIRE CHEMICAL CO., INC. (Continued) **U001561274**

Senate: 24
Special Program: Not reported
Status: Refer: Other Agency
Status Date: 04/15/1994
Restricted Use: NO
Site Mgmt. Req.: NONE SPECIFIED
Funding: Not reported
Latitude: 34.06432
Longitude: -118.2238
APN: 5410013002
Past Use: NONE SPECIFIED
Potential COC: 10002, 10003, 10009, 10063, 10064, 10077, 10097, 10098, 10196, 10198, 10199, 20020
Confirmed COC: NONE SPECIFIED
Potential Description: NONE SPECIFIED
Alias Name: EMPIRE ASSOCIATES
Alias Type: Alternate Name
Alias Name: EMPIRE CHEMICAL COMPANY
Alias Type: Alternate Name
Alias Name: 5410013002
Alias Type: APN
Alias Name: 19281206
Alias Type: Envirostor ID Number

Completed Info:
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Site Screening
Completed Date: 04/15/1994
Comments: The Department received a Notice of Intent to Commence Action Under RCRA and CERCLA dated June 22, 1993. On July 30, 1993, the Department mailed the Information Request to all PRPs. The information received from the PRPs indicates that in 1945 the Empire Chemical Co. moved to the subject location. The current owner is Jerry Elkind. The company was involved in the sale of janitorial products and insecticides. It did some packing in the permises as part of their operation. One 5000-gallon UST was installed in 1947-1950 to store kerosene. Soil around the area of of the UST is contaminated with TPH and the groundwater is also suspected to be contaminated. The Department's contact with the Los Angeles City Fire Department, UG Tank Plan Check indicates that they are the lead agency. Therefore, the Department's involvement is unnecessary.

Future Area Name: Not reported
Future Sub Area Name: Not reported
Future Document Type: Not reported
Future Due Date: Not reported
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported

S74 **UPS MAIN ST. LAMAR HUB** **LUST** **S103587530**
SSE **1800 MAIN ST. N.** **N/A**
1/4-1/2 **LOS ANGELES, CA 90031**
0.430 mi.
2273 ft. **Site 2 of 3 in cluster S**

Relative:
Lower

Actual:
293 ft.

LUST:

Region:	STATE
Global Id:	T0603700802
Latitude:	34.0641419
Longitude:	-118.221595
Case Type:	LUST Cleanup Site
Status:	Completed - Case Closed
Status Date:	09/30/2005
Lead Agency:	LOS ANGELES RWQCB (REGION 4)
Case Worker:	AT
Local Agency:	LOS ANGELES, CITY OF
RB Case Number:	900310216
LOC Case Number:	Not reported
File Location:	Not reported
Potential Media Affect:	Aquifer used for drinking water supply
Potential Contaminants of Concern:	Gasoline
Site History:	Not reported

Click here to access the California GeoTracker records for this facility:

LUST:

Global Id:	T0603700802
Contact Type:	Regional Board Caseworker
Contact Name:	ARMAN TOUMARI
Organization Name:	LOS ANGELES RWQCB (REGION 4)
Address:	320 WEST 4TH STREET, SUITE 200
City:	LOS ANGELES
Email:	atoumari@waterboards.ca.gov
Phone Number:	2135766708

Global Id:	T0603700802
Contact Type:	Local Agency Caseworker
Contact Name:	ELOY LUNA
Organization Name:	LOS ANGELES, CITY OF
Address:	200 North Main Street, Suite 1780
City:	LOS ANGELES
Email:	eloy.luna@lacity.org
Phone Number:	Not reported

LUST:

Global Id:	T0603700802
Action Type:	ENFORCEMENT
Date:	09/30/2005
Action:	Site Visit / Inspection / Sampling

Global Id:	T0603700802
Action Type:	REMEDIATION
Date:	01/01/1950
Action:	Excavation

Global Id:	T0603700802
Action Type:	RESPONSE
Date:	04/15/2003

UPS MAIN ST. LAMAR HUB (Continued) **S103587530**

Action: Monitoring Report - Quarterly

Global Id: T0603700802
Action Type: RESPONSE
Date: 07/15/2003
Action: Monitoring Report - Quarterly

Global Id: T0603700802
Action Type: RESPONSE
Date: 10/15/2003
Action: Monitoring Report - Quarterly

Global Id: T0603700802
Action Type: RESPONSE
Date: 07/15/2005
Action: Monitoring Report - Quarterly

Global Id: T0603700802
Action Type: RESPONSE
Date: 07/15/2004
Action: Monitoring Report - Quarterly

Global Id: T0603700802
Action Type: REMEDIATION
Date: 01/01/1950
Action: Excavation

Global Id: T0603700802
Action Type: RESPONSE
Date: 04/15/2005
Action: Monitoring Report - Quarterly

Global Id: T0603700802
Action Type: ENFORCEMENT
Date: 07/09/2002
Action: Site Visit / Inspection / Sampling

Global Id: T0603700802
Action Type: ENFORCEMENT
Date: 09/30/2005
Action: Closure/No Further Action Letter

Global Id: T0603700802
Action Type: RESPONSE
Date: 10/15/2004
Action: Monitoring Report - Quarterly

Global Id: T0603700802
Action Type: RESPONSE
Date: 01/15/2005
Action: Monitoring Report - Quarterly

Global Id: T0603700802
Action Type: RESPONSE
Date: 01/15/2004
Action: Monitoring Report - Quarterly

UPS MAIN ST. LAMAR HUB (Continued) **S103587530**

Global Id: T0603700802
Action Type: ENFORCEMENT
Date: 07/11/1997
Action: Staff Letter

Global Id: T0603700802
Action Type: Other
Date: 01/01/1950
Action: Leak Reported

LUST REG 4:
Region: 4
Regional Board: 04
County: Los Angeles
Facility Id: 900310216
Status: Pollution Characterization
Substance: Gasoline
Substance Quantity: Not reported
Local Case No: Not reported
Case Type: Groundwater
Abatement Method Used at the Site: Excavate and Dispose
Global ID: T0603700802
W Global ID: W0605100649
Staff: AT
Local Agency: 19050
Cross Street: MAIN ST
Enforcement Type: MRPO
Date Leak Discovered: Not reported
Date Leak First Reported: 1/9/1990
Date Leak Record Entered: 1/25/1990
Date Confirmation Began: 11/29/1989
Date Leak Stopped: Not reported
Date Case Last Changed on Database: 10/10/2002
Date the Case was Closed: Not reported
How Leak Discovered: Not reported
How Leak Stopped: Not reported
Cause of Leak: Not reported
Leak Source: Not reported
Operator: OLD CASE #020190-03
Water System: DAVE GRIFFITH L A D W P
Well Name: Not reported
Approx. Dist To Production Well (ft): 5926.014144078025654074078937
Source of Cleanup Funding: Not reported
Preliminary Site Assessment Workplan Submitted: 11/7/1990
Preliminary Site Assessment Began: Not reported
Pollution Characterization Began: 9/14/2000
Remediation Plan Submitted: Not reported
Remedial Action Underway: Not reported
Post Remedial Action Monitoring Began: Not reported
Enforcement Action Date: Not reported
Historical Max MTBE Date: Not reported
Hist Max MTBE Conc in Groundwater: Not reported
Hist Max MTBE Conc in Soil: Not reported
Significant Interim Remedial Action Taken: Not reported
GW Qualifier: Not reported
Soil Qualifier: Not reported

UPS MAIN ST. LAMAR HUB (Continued) **S103587530**

Organization:	Not reported
Owner Contact:	Not reported
Responsible Party:	LINDA LYONS
RP Address:	55 GLENLAKE PKWY
Program:	LUST
Lat/Long:	34.0644083 / -1
Local Agency Staff:	PEJ
Beneficial Use:	Not reported
Priority:	Not reported
Cleanup Fund Id:	Not reported
Suspended:	Not reported
Assigned Name:	2600649-001GEN
Summary:	7/9/98 REVIEW; 9/27/00 OWNERSHIP INFORMATION REQUEST

S75 **UPS MAIN ST. LA FACILITY** **HIST CORTESE** **S101297095**
SSE **714 LAMAR** **N/A**
1/4-1/2 **LOS ANGELES, CA 90031**
0.430 mi.
2273 ft. **Site 3 of 3 in cluster S**

Relative:
Lower

Actual:
293 ft.

CORTESE:

Region:	CORTESE
Facility County Code:	19
Reg By:	LTNKA
Reg Id:	900310216

T76 **N E MUNICIPAL BUILDING** **HIST CORTESE** **S103066229**
North **401 19** **N/A**
1/4-1/2 **LOS ANGELES, CA 90031**
0.475 mi.
2510 ft. **Site 1 of 2 in cluster T**

Relative:
Higher

Actual:
322 ft.

CORTESE:

Region:	CORTESE
Facility County Code:	19
Reg By:	LTNKA
Reg Id:	900310252

T77 **N E MUNICIPAL BUILDING** **LUST** **S102434102**
North **401 AVENUE 19 N** **N/A**
1/4-1/2 **MONTECITO HEIGHTS, CA 90031**
0.475 mi.
2510 ft. **Site 2 of 2 in cluster T**

Relative:
Higher

Actual:
322 ft.

LUST:

Region:	STATE
Global Id:	T0603700806
Latitude:	34.0767587
Longitude:	-118.2244627
Case Type:	LUST Cleanup Site
Status:	Completed - Case Closed
Status Date:	03/10/2008
Lead Agency:	LOS ANGELES, CITY OF
Case Worker:	WR
Local Agency:	LOS ANGELES, CITY OF

N E MUNICIPAL BUILDING (Continued) **S102434102**

RB Case Number: 900310252
LOC Case Number: Not reported
File Location: Not reported
Potential Media Affect: Soil
Potential Contaminants of Concern: Diesel
Site History: Not reported

Click here to access the California GeoTracker records for this facility:

LUST:
Global Id: T0603700806
Contact Type: Local Agency Caseworker
Contact Name: TBD
Organization Name: LOS ANGELES, CITY OF
Address: 200 N. MAIN ST. RM. 970
City: LOS ANGELES
Email: Not reported
Phone Number: 2134826528

Global Id: T0603700806
Contact Type: Regional Board Caseworker
Contact Name: YUE RONG
Organization Name: LOS ANGELES RWQCB (REGION 4)
Address: 320 W. 4TH ST., SUITE 200
City: Los Angeles
Email: yrong@waterboards.ca.gov
Phone Number: Not reported

LUST:
Global Id: T0603700806
Action Type: Other
Date: 01/01/1950
Action: Leak Discovery

Global Id: T0603700806
Action Type: Other
Date: 01/01/1950
Action: Leak Stopped

Global Id: T0603700806
Action Type: Other
Date: 01/01/1950
Action: Leak Reported

LUST REG 4:
Region: 4
Regional Board: 04
County: Los Angeles
Facility Id: 900310252
Status: Pollution Characterization
Substance: Diesel
Substance Quantity: Not reported
Local Case No: Not reported
Case Type: Soil
Abatement Method Used at the Site: Not reported
Global ID: T0603700806

N E MUNICIPAL BUILDING (Continued) **S102434102**

W Global ID:	W0605100649	
Staff:	UNK	
Local Agency:	19050	
Cross Street:	PASADENA AVENUE	
Enforcement Type:	Not reported	
Date Leak Discovered:	11/4/1987	
Date Leak First Reported:		12/23/1987
Date Leak Record Entered:	5/11/1988	
Date Confirmation Began:	Not reported	
Date Leak Stopped:	11/4/1987	
Date Case Last Changed on Database:		12/23/1987
Date the Case was Closed:		Not reported
How Leak Discovered:	Tank Closure	
How Leak Stopped:	Not reported	
Cause of Leak:	Corrosion	
Leak Source:	Tank	
Operator:	OLD CASENO WAS 003917	
Water System:	DAVE GRIFFITH L A D W P	
Well Name:	Not reported	
Approx. Dist To Production Well (ft):		8018.822556958642809026544506
Source of Cleanup Funding:		Tank
Preliminary Site Assessment Workplan Submitted:		Not reported
Preliminary Site Assessment Began:		Not reported
Pollution Characterization Began:		12/23/1987
Remediation Plan Submitted:		Not reported
Remedial Action Underway:		Not reported
Post Remedial Action Monitoring Began:		Not reported
Enforcement Action Date:		Not reported
Historical Max MTBE Date:		Not reported
Hist Max MTBE Conc in Groundwater:		Not reported
Hist Max MTBE Conc in Soil:		Not reported
Significant Interim Remedial Action Taken:		Not reported
GW Qualifier:	Not reported	
Soil Qualifier:	Not reported	
Organization:	Not reported	
Owner Contact:	Not reported	
Responsible Party:	TREIDLER, E. BROOKES	
RP Address:	200 N. MAIN ST, CHE RM 800, LOS ANGELES, CA 90012	
Program:	LUST	
Lat/Long:	34.0767587 / -1	
Local Agency Staff:	PEJ	
Beneficial Use:	Not reported	
Priority:	Not reported	
Cleanup Fund Id:	Not reported	
Suspended:	Not reported	
Assigned Name:	2600649-001GEN	
Summary:	TANK EMPTY AT TIME OF REMOVAL AND COLLAPSED DUE TO MASSIVE CORROSION.	

78
NW
1/2-1
0.546 mi.
2883 ft.

LAUSD/ SOLANO AVE ELEM
615 SOLANO AVE
LOS ANGELES, CA 90015

SCH **S105088866**
HAZNET **N/A**
ENVIROSTOR

Relative:
Higher

Actual:
415 ft.

SCH:

Facility ID:	60001590
Site Type:	School Investigation
Site Type Detail:	School
Site Mgmt. Req.:	NONE SPECIFIED
Acres:	0.88
National Priorities List:	NO
Cleanup Oversight Agencies:	SMBRP
Lead Agency:	SMBRP
Lead Agency Description:	DTSC - Site Mitigation And Brownfield Reuse Program
Project Manager:	Christine Chiu
Supervisor:	Shahir Haddad
Division Branch:	Southern California Schools & Brownfields Outreach
Site Code:	404872
Assembly:	51
Senate:	24
Special Program Status:	Not reported
Status:	Active
Status Date:	11/14/2011
Restricted Use:	NO
Funding:	School District
Latitude:	34.0759
Longitude:	-118.2322
APN:	5415-029-900, 5415-029-902
Past Use:	RESIDENTIAL AREA, SCHOOL - ELEMENTARY, UNDERGROUND STORAGE TANKS
Potential COC:	30001, 30013
Confirmed COC:	NONE SPECIFIED
Potential Description:	SOIL
Alias Name:	5415-029-900
Alias Type:	APN
Alias Name:	5415-029-902
Alias Type:	APN
Alias Name:	404872
Alias Type:	Project Code (Site Code)
Alias Name:	60001590
Alias Type:	Envirostor ID Number

Completed Info:

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Environmental Oversight Agreement
Completed Date:	11/14/2011
Comments:	Fully executed Amended Master Oversight Agreement sent (FedEx) to District on 11/17/11.
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Phase 1
Completed Date:	02/07/2012
Comments:	DTSC issued a PEA required determination based on the Phase I report.
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported

LAUSD/ SOLANO AVE ELEM (Continued) **S105088866**

Completed Document Type: Preliminary Endangerment Assessment Tech Memo
Completed Date: 03/30/2012
Comments: Not reported

Future Area Name: PROJECT WIDE
Future Sub Area Name: Not reported
Future Document Type: Preliminary Endangerment Assessment Report
Future Due Date: 2012
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported

HAZNET:
Year: 2009
Gepaid: CAR000197327
Contact: SOE AUNG / ECM
Telephone: 2132413199
Mailing Name: Not reported
Mailing Address: 333 S BEAUDRY AVE 20TH FLOOR
Mailing City,St,Zip: LOS ANGELES, CA 900171466
Gen County: Los Angeles
TSD EPA ID: CAD008252405
TSD County: Los Angeles
Waste Category: Other organic solids
Disposal Method: STORAGE, BULKING, AND/OR TRANSFER OFF SITE--NO TREATMENT/REOVERY (H010-H129) OR (H131-H135)
Tons: 0.1
Facility County: Los Angeles

Year: 2007
Gepaid: CAL000000659
Contact: SOE AUNG
Telephone: 2132413199
Mailing Name: Not reported
Mailing Address: 333 S BEAUDRY AVE 20TH FLR
Mailing City,St,Zip: LOS ANGELES, CA 900170000
Gen County: Los Angeles
TSD EPA ID: CAD009007626
TSD County: Los Angeles
Waste Category: Asbestos containing waste
Disposal Method: LANDFILL OR SURFACE IMPOUNDMENT THAT WILL BE CLOSED AS LANDFILL(TO INCLUDE ON-SITE TREATMENT AND/OR STABILIZATION)
Tons: 26
Facility County: Los Angeles

Year: 2006
Gepaid: CAL000000659
Contact: YI HWA KIM DEPUTY DIRECTOR
Telephone: 2137435086
Mailing Name: Not reported
Mailing Address: 333 S BEAUDRY AVE 20TH FLR
Mailing City,St,Zip: LOS ANGELES, CA 900170000
Gen County: Los Angeles
TSD EPA ID: CAD980884183
TSD County: Sacramento

LAUSD/ SOLANO AVE ELEM (Continued) **S105088866**

Waste Category: Other inorganic solid waste
Disposal Method: H14
Tons: 0.03
Facility County: Los Angeles

Year: 2004
Gepaid: CAL000000659
Contact: YI HWA KIM DEPUTY DIRECTOR
Telephone: 2137435086
Mailing Name: Not reported
Mailing Address: 333 S BEAUDRY AVE 20TH FLR
Mailing City,St,Zip: LOS ANGELES, CA 900170000
Gen County: Los Angeles
TSD EPA ID: CAL000827758
TSD County: San Bernardino
Waste Category: Polychlorinated biphenyls and material containing PCBs
Disposal Method: R01
Tons: 0.03
Facility County: Not reported

Year: 2003
Gepaid: CAL000000659
Contact: YI HWA KIM DEPUTY DIRECTOR
Telephone: 2137435086
Mailing Name: LAUSD/EHSB/BSC ANNEX
Mailing Address: 333 S BEAUDRY AVE 20TH FLR
Mailing City,St,Zip: LOS ANGELES, CA 900170000
Gen County: Los Angeles
TSD EPA ID: CAD009007626
TSD County: Los Angeles
Waste Category: Asbestos containing waste
Disposal Method: D80
Tons: 1.68
Facility County: Los Angeles

Click this hyperlink while viewing on your computer to access
3 additional CA_HAZNET: record(s) in the EDR Site Report.

ENVIROSTOR:
Site Type: School Investigation
Site Type Detailed: School
Acres: 0.88
NPL: NO
Regulatory Agencies: SMBRP
Lead Agency: SMBRP
Program Manager: Christine Chiu
Supervisor: Shahir Haddad
Division Branch: Southern California Schools & Brownfields Outreach
Facility ID: 60001590
Site Code: 404872
Assembly: 51
Senate: 24
Special Program: Not reported
Status: Active
Status Date: 11/14/2011
Restricted Use: NO
Site Mgmt. Req.: NONE SPECIFIED

LAUSD/ SOLANO AVE ELEM (Continued) **S105088866**

Funding: School District
Latitude: 34.0759
Longitude: -118.2322
APN: 5415-029-900, 5415-029-902
Past Use: RESIDENTIAL AREA, SCHOOL - ELEMENTARY, UNDERGROUND STORAGE TANKS
Potential COC: 30001, 30013
Confirmed COC: NONE SPECIFIED
Potential Description: SOIL
Alias Name: 5415-029-900
Alias Type: APN
Alias Name: 5415-029-902
Alias Type: APN
Alias Name: 404872
Alias Type: Project Code (Site Code)
Alias Name: 60001590
Alias Type: Envirostor ID Number

Completed Info:
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Environmental Oversight Agreement
Completed Date: 11/14/2011
Comments: Fully executed Amended Master Oversight Agreement sent (FedEx) to District on 11/17/11.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Phase 1
Completed Date: 02/07/2012
Comments: DTSC issued a PEA required determination based on the Phase I report.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Preliminary Endangerment Assessment Tech Memo
Completed Date: 03/30/2012
Comments: Not reported

Future Area Name: PROJECT WIDE
Future Sub Area Name: Not reported
Future Document Type: Preliminary Endangerment Assessment Report
Future Due Date: 2012
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported

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79 SW 1/2-1 0.564 mi. 2980 ft.

WITCO/ALLIED KELITE DIVISION **SLIC S105520881**
1250 NORTH MAIN STREET **VCP N/A**
LOS ANGELES, CA 90012 **ENVIROSTOR**

Relative: Lower

Actual: 295 ft.

SLIC REG 4:
Region: 4
Facility Status: Not reported
SLIC: 0376
Substance: Not reported

WITCO/ALLIED KELITE DIVISION (Continued) **S105520881**

Staff: Department of Toxic Substances Control

VCP:

Facility ID:	19281211
Site Type:	Voluntary Cleanup
Site Type Detail:	Voluntary Cleanup
Site Mgmt. Req.:	NONE SPECIFIED
Acres:	2.5
National Priorities List:	NO
Cleanup Oversight Agencies:	DTSC
Lead Agency:	DTSC
Lead Agency Description:	* DTSC
Project Manager:	Javier Hinojosa
Supervisor:	* Harlan Jeche
Division Branch:	Cleanup Chatsworth
Site Code:	Not reported
Assembly:	51
Senate:	24
Special Programs Code:	Voluntary Cleanup Program
Status:	No Further Action
Status Date:	10/24/1995
Restricted Use:	NO
Funding:	Responsible Party
Lat/Long:	34.06289 / -118.2313
APN:	5409-010-032
Past Use:	MANUFACTURING - CHEMICALS, METAL FINISHING
Potential COC:	30001, 30005, 30013, 30026, 30027, 30108
Confirmed COC:	30001-NO,30005-NO,30013-NO,30026-NO,30108-NO,30027-NO
Potential Description:	OTH, SOIL, SV
Alias Name:	ALLIED KELITE
Alias Type:	Alternate Name
Alias Name:	ALLIED KELITE DIVISION
Alias Type:	Alternate Name
Alias Name:	ALLIED KELITE DIVISION, WITCO CORP.
Alias Type:	Alternate Name
Alias Name:	WITCO CORPORATION
Alias Type:	Alternate Name
Alias Name:	5409-010-032
Alias Type:	APN
Alias Name:	110002138703
Alias Type:	EPA (FRS #)
Alias Name:	SLT43235233
Alias Type:	GeoTracker Global ID
Alias Name:	19281211
Alias Type:	Envirostor ID Number

Completed Info:

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Voluntary Cleanup Agreement
Completed Date:	05/16/1995
Comments:	DTSC entered into a Voluntary Cleanup Agreement with Witco Corporation to complete a Preliminary Endangerment Assessment (PEA) for the Witco Corporation site.
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported

WITCO/ALLIED KELITE DIVISION (Continued) **S105520881**

Completed Document Type: Preliminary Endangerment Assessment Report
Completed Date: 10/24/1995
Comments: DTSC completed its review of the PEA Report for the Witco Corporation, Allied Kelite Division Site. Based on the information provided, DTSC determined that the residual contamination observed in the Site's soil does not pose a threat to human health via the inhalation and ingestion routes of exposure. Accordingly, DTSC concurs with the "No Further Action" recommendation for the soil with respect to the aforementioned routes of exposure. DTSC has determined that the groundwater beneath the Site has been impacted by Site operations and possibly other regional sources. The groundwater beneath the Site is not a potable source of drinking water and does not pose an imminent and substantial endangerment. However, the groundwater should be investigated. DTSC reserves the right to require additional work in the future should the Site's conditions differ from those described in the PEA

Future Area Name: Not reported
Future Sub Area Name: Not reported
Future Document Type: Not reported
Future Due Date: Not reported
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported

ENVIROSTOR:
Site Type: Voluntary Cleanup
Site Type Detailed: Voluntary Cleanup
Acres: 2.5
NPL: NO
Regulatory Agencies: DTSC
Lead Agency: DTSC
Program Manager: Javier Hinojosa
Supervisor: * Harlan Jeche
Division Branch: Cleanup Chatsworth
Facility ID: 19281211
Site Code: Not reported
Assembly: 51
Senate: 24
Special Program: Voluntary Cleanup Program
Status: No Further Action
Status Date: 10/24/1995
Restricted Use: NO
Site Mgmt. Req.: NONE SPECIFIED
Funding: Responsible Party
Latitude: 34.06289
Longitude: -118.2313
APN: 5409-010-032
Past Use: MANUFACTURING - CHEMICALS, METAL FINISHING
Potential COC: 30001, 30005, 30013, 30026, 30027, 30108
Confirmed COC: 30001-NO,30005-NO,30013-NO,30026-NO,30108-NO,30027-NO
Potential Description: OTH, SOIL, SV
Alias Name: ALLIED KELITE
Alias Type: Alternate Name
Alias Name: ALLIED KELITE DIVISION

WITCO/ALLIED KELITE DIVISION (Continued) **S105520881**

Alias Type:	Alternate Name
Alias Name:	ALLIED KELITE DIVISION, WITCO CORP.
Alias Type:	Alternate Name
Alias Name:	WITCO CORPORATION
Alias Type:	Alternate Name
Alias Name:	5409-010-032
Alias Type:	APN
Alias Name:	110002138703
Alias Type:	EPA (FRS #)
Alias Name:	SLT43235233
Alias Type:	GeoTracker Global ID
Alias Name:	19281211
Alias Type:	Envirostor ID Number

Completed Info:

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Voluntary Cleanup Agreement
Completed Date:	05/16/1995
Comments:	DTSC entered into a Voluntary Cleanup Agreement with Witco Corporation to complete a Preliminary Endangerment Assessment (PEA) for the Witco Corporation site.

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Preliminary Endangerment Assessment Report
Completed Date:	10/24/1995
Comments:	DTSC completed its review of the PEA Report for the Witco Corporation, Allied Kelite Division Site. Based on the information provided, DTSC determined that the residual contamination observed in the Site's soil does not pose a threat to human health via the inhalation and ingestion routes of exposure. Accordingly, DTSC concurs with the "No Further Action" recommendation for the soil with respect to the aforementioned routes of exposure. DTSC has determined that the groundwater beneath the Site has been impacted by Site operations and possibly other regional sources. The groundwater beneath the Site is not a potable source of drinking water and does not pose an imminent and substantial endangerment. However, the groundwater should be investigated. DTSC reserves the right to require additional work in the future should the Site's conditions differ from those described in the PEA

Future Area Name:	Not reported
Future Sub Area Name:	Not reported
Future Document Type:	Not reported
Future Due Date:	Not reported
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported

80
SSW
1/2-1
0.573 mi.
3028 ft.

WILLIAM MEAD HOMES
1300 CARDINAL STREET
LOS ANGELES, CA 90012

HIST Cal-Sites
Cortese
RESPONSE
ENVIROSTOR

S101482998
N/A

Relative:
Lower

Actual:
293 ft.

Calsite:

Facility ID:	19290312
Region:	3
Region Name:	GLENDALE
Branch:	SA
Branch Name:	SO CAL - GLENDALE
File Name:	WILLIAM MEAD HOMES SITE
State Senate District:	10052001
Status:	ANNUAL WORKPLAN (AWP) - ACTIVE SITE
Status Name:	ANNUAL WORKPLAN - ACTIVE SITE
Lead Agency:	DTSC
Lead Agency:	DEPT OF TOXIC SUBSTANCES CONTROL
Facility Type:	RP
Type Name:	RESPONSIBLE PARTY
NPL:	Not Listed
SIC Code:	29
SIC Name:	MANU - PETROLEUM & COAL PRODUCTS
Access:	Not reported
Cortese:	Not reported
Hazardous Ranking Score:	Not reported
Date Site Hazard Ranked:	Not reported
Groundwater Contamination:	Not reported
Staff Member Responsible for Site:	RKINSELL
Supervisor Responsible for Site:	Not reported
Region Water Control Board:	Not reported
Region Water Control Board Name:	Not reported
Lat/Long Direction:	Not reported
Lat/Long (dms):	0 0 0 / 0 0 0
Lat/long Method:	Not reported
Lat/Long Description:	Not reported
State Assembly District Code:	45
State Senate District Code:	22
Facility ID:	19290312
Activity:	SS
Activity Name:	SITE SCREENING
AWP Code:	S
Proposed Budget:	0
AWP Completion Date:	Not reported
Revised Due Date:	Not reported
Comments Date:	03021995
Est Person-Yrs to complete:	0
Estimated Size:	Not reported
Request to Delete Activity:	Not reported
Activity Status:	AWP
Definition of Status:	ANNUAL WORKPLAN - ACTIVE SITE
Liquids Removed (Gals):	0
Liquids Treated (Gals):	0
Action Included Capping:	Not reported
Well Decommissioned:	Not reported
Action Included Fencing:	Not reported
Removal Action Certification:	Not reported
Activity Comments:	Not reported
For Commercial Reuse:	0

WILLIAM MEAD HOMES (Continued) **S101482998**

For Industrial Reuse:	0
For Residential Reuse:	0
Unknown Type:	0
Facility ID:	19290312
Activity:	ORDER
Activity Name:	I/SE, IORSE, FFA, FFSRA, VCA, EA
AWP Code:	VCA S
Proposed Budget:	0
AWP Completion Date:	Not reported
Revised Due Date:	Not reported
Comments Date:	04131995
Est Person-Yrs to complete:	0
Estimated Size:	Not reported
Request to Delete Activity:	Not reported
Activity Status:	AWP
Definition of Status:	ANNUAL WORKPLAN - ACTIVE SITE
Liquids Removed (Gals):	0
Liquids Treated (Gals):	0
Action Included Capping:	Not reported
Well Decommissioned:	Not reported
Action Included Fencing:	Not reported
Removal Action Certification:	Not reported
Activity Comments:	Not reported
For Commercial Reuse:	0
For Industrial Reuse:	0
For Residential Reuse:	0
Unknown Type:	0
Facility ID:	19290312
Activity:	PEA
Activity Name:	PRELIMINARY ENDANGERMENT ASSESSMENT
AWP Code:	VCA S
Proposed Budget:	0
AWP Completion Date:	Not reported
Revised Due Date:	Not reported
Comments Date:	04261996
Est Person-Yrs to complete:	0
Estimated Size:	Not reported
Request to Delete Activity:	Not reported
Activity Status:	AWP
Definition of Status:	ANNUAL WORKPLAN - ACTIVE SITE
Liquids Removed (Gals):	0
Liquids Treated (Gals):	0
Action Included Capping:	Not reported
Well Decommissioned:	Not reported
Action Included Fencing:	Not reported
Removal Action Certification:	Not reported
Activity Comments:	Not reported
For Commercial Reuse:	0
For Industrial Reuse:	0
For Residential Reuse:	0
Unknown Type:	0
Facility ID:	19290312
Activity:	ORDER
Activity Name:	I/SE, IORSE, FFA, FFSRA, VCA, EA
AWP Code:	VCA2S
Proposed Budget:	0
AWP Completion Date:	Not reported

WILLIAM MEAD HOMES (Continued) **S101482998**

Revised Due Date:	Not reported
Comments Date:	06131996
Est Person-Yrs to complete:	0
Estimated Size:	Not reported
Request to Delete Activity:	Not reported
Activity Status:	AWP
Definition of Status:	ANNUAL WORKPLAN - ACTIVE SITE
Liquids Removed (Gals):	0
Liquids Treated (Gals):	0
Action Included Capping:	Not reported
Well Decommissioned:	Not reported
Action Included Fencing:	Not reported
Removal Action Certification:	Not reported
Activity Comments:	Not reported
For Commercial Reuse:	0
For Industrial Reuse:	0
For Residential Reuse:	0
Unknown Type:	0
Facility ID:	19290312
Activity:	RAW
Activity Name:	REMOVAL ACTION WORKPLAN
AWP Code:	S
Proposed Budget:	0
AWP Completion Date:	Not reported
Revised Due Date:	Not reported
Comments Date:	04182000
Est Person-Yrs to complete:	0
Estimated Size:	Not reported
Request to Delete Activity:	Not reported
Activity Status:	AWP
Definition of Status:	ANNUAL WORKPLAN - ACTIVE SITE
Liquids Removed (Gals):	0
Liquids Treated (Gals):	0
Action Included Capping:	Not reported
Well Decommissioned:	Not reported
Action Included Fencing:	Not reported
Removal Action Certification:	Not reported
Activity Comments:	Not reported
For Commercial Reuse:	0
For Industrial Reuse:	0
For Residential Reuse:	0
Unknown Type:	0
Facility ID:	19290312
Activity:	CHP65
Activity Name:	AMENDED ORDER/AGREEMENT, CHAPTER 6.5 TRANSITION
AWP Code:	S
Proposed Budget:	0
AWP Completion Date:	Not reported
Revised Due Date:	Not reported
Comments Date:	01051999
Est Person-Yrs to complete:	0
Estimated Size:	Not reported
Request to Delete Activity:	Not reported
Activity Status:	AWP
Definition of Status:	ANNUAL WORKPLAN - ACTIVE SITE
Liquids Removed (Gals):	0
Liquids Treated (Gals):	0

WILLIAM MEAD HOMES (Continued) **S101482998**

Action Included Capping:	Not reported
Well Decommissioned:	Not reported
Action Included Fencing:	Not reported
Removal Action Certification:	Not reported
Activity Comments:	Not reported
For Commercial Reuse:	0
For Industrial Reuse:	0
For Residential Reuse:	0
Unknown Type:	0
Facility ID:	19290312
Activity:	CEQA
Activity Name:	CEQA INCLUDING NEGATIVE DECS
AWP Code:	ND S
Proposed Budget:	0
AWP Completion Date:	Not reported
Revised Due Date:	Not reported
Comments Date:	04182000
Est Person-Yrs to complete:	0
Estimated Size:	Not reported
Request to Delete Activity:	Not reported
Activity Status:	AWP
Definition of Status:	ANNUAL WORKPLAN - ACTIVE SITE
Liquids Removed (Gals):	0
Liquids Treated (Gals):	0
Action Included Capping:	Not reported
Well Decommissioned:	Not reported
Action Included Fencing:	Not reported
Removal Action Certification:	Not reported
Activity Comments:	Not reported
For Commercial Reuse:	0
For Industrial Reuse:	0
For Residential Reuse:	0
Unknown Type:	0
Facility ID:	19290312
Activity:	RA
Activity Name:	REMOVAL ACTION
AWP Code:	S
Proposed Budget:	0
AWP Completion Date:	Not reported
Revised Due Date:	Not reported
Comments Date:	03112002
Est Person-Yrs to complete:	0
Estimated Size:	Not reported
Request to Delete Activity:	Not reported
Activity Status:	AWP
Definition of Status:	ANNUAL WORKPLAN - ACTIVE SITE
Liquids Removed (Gals):	0
Liquids Treated (Gals):	0
Action Included Capping:	Not reported
Well Decommissioned:	Not reported
Action Included Fencing:	Not reported
Removal Action Certification:	Not reported
Activity Comments:	Not reported
For Commercial Reuse:	0
For Industrial Reuse:	0
For Residential Reuse:	0
Unknown Type:	0

WILLIAM MEAD HOMES (Continued) **S101482998**

Facility ID:	19290312
Activity:	ORDER
Activity Name:	I/SE, IORSE, FFA, FFSRA, VCA, EA
AWP Code:	CONSN
Proposed Budget:	0
AWP Completion Date:	Not reported
Revised Due Date:	Not reported
Comments Date:	10042001
Est Person-Yrs to complete:	0
Estimated Size:	Not reported
Request to Delete Activity:	Not reported
Activity Status:	AWP
Definition of Status:	ANNUAL WORKPLAN - ACTIVE SITE
Liquids Removed (Gals):	0
Liquids Treated (Gals):	0
Action Included Capping:	Not reported
Well Decommissioned:	Not reported
Action Included Fencing:	Not reported
Removal Action Certification:	Not reported
Activity Comments:	Not reported
For Commercial Reuse:	0
For Industrial Reuse:	0
For Residential Reuse:	0
Unknown Type:	0
Facility ID:	19290312
Activity:	RIFS
Activity Name:	REMEDIAL INVESTIGATION / FEASIBILITY STUDY
AWP Code:	N
Proposed Budget:	0
AWP Completion Date:	Not reported
Revised Due Date:	Not reported
Comments Date:	06052002
Est Person-Yrs to complete:	0
Estimated Size:	Not reported
Request to Delete Activity:	Not reported
Activity Status:	AWP
Definition of Status:	ANNUAL WORKPLAN - ACTIVE SITE
Liquids Removed (Gals):	0
Liquids Treated (Gals):	0
Action Included Capping:	Not reported
Well Decommissioned:	Not reported
Action Included Fencing:	Not reported
Removal Action Certification:	Not reported
Activity Comments:	Not reported
For Commercial Reuse:	0
For Industrial Reuse:	0
For Residential Reuse:	0
Unknown Type:	0
Facility ID:	19290312
Activity:	DES
Activity Name:	DESIGN
AWP Code:	N
Proposed Budget:	0
AWP Completion Date:	Not reported
Revised Due Date:	Not reported
Comments Date:	04302003
Est Person-Yrs to complete:	0

WILLIAM MEAD HOMES (Continued) **S101482998**

Estimated Size:	Not reported
Request to Delete Activity:	Not reported
Activity Status:	AWP
Definition of Status:	ANNUAL WORKPLAN - ACTIVE SITE
Liquids Removed (Gals):	0
Liquids Treated (Gals):	0
Action Included Capping:	Not reported
Well Decommissioned:	Not reported
Action Included Fencing:	Not reported
Removal Action Certification:	Not reported
Activity Comments:	Not reported
For Commercial Reuse:	0
For Industrial Reuse:	0
For Residential Reuse:	0
Unknown Type:	0
Facility ID:	19290312
Activity:	RMDL
Activity Name:	REMEDIAL ACTION (RAP REQUIRED)
AWP Code:	N
Proposed Budget:	0
AWP Completion Date:	06302005
Revised Due Date:	Not reported
Comments Date:	Not reported
Est Person-Yrs to complete:	0
Estimated Size:	Not reported
Request to Delete Activity:	Not reported
Activity Status:	AWP
Definition of Status:	ANNUAL WORKPLAN - ACTIVE SITE
Liquids Removed (Gals):	0
Liquids Treated (Gals):	0
Action Included Capping:	Not reported
Well Decommissioned:	Not reported
Action Included Fencing:	Not reported
Removal Action Certification:	Not reported
Activity Comments:	Not reported
For Commercial Reuse:	0
For Industrial Reuse:	0
For Residential Reuse:	0
Unknown Type:	0
Facility ID:	19290312
Activity:	COST
Activity Name:	COST RECOVERY
AWP Code:	S
Proposed Budget:	0
AWP Completion Date:	Not reported
Revised Due Date:	Not reported
Comments Date:	10052001
Est Person-Yrs to complete:	0
Estimated Size:	Not reported
Request to Delete Activity:	Not reported
Activity Status:	AWP
Definition of Status:	ANNUAL WORKPLAN - ACTIVE SITE
Liquids Removed (Gals):	0
Liquids Treated (Gals):	0
Action Included Capping:	Not reported
Well Decommissioned:	Not reported
Action Included Fencing:	Not reported

WILLIAM MEAD HOMES (Continued) **S101482998**

Removal Action Certification:	Not reported
Activity Comments:	Not reported
For Commercial Reuse:	0
For Industrial Reuse:	0
For Residential Reuse:	0
Unknown Type:	0
Facility ID:	19290312
Activity:	RAP
Activity Name:	REMEDIAL ACTION PLAN / RECORD OF DECISION
AWP Code:	N
Proposed Budget:	0
AWP Completion Date:	Not reported
Revised Due Date:	Not reported
Comments Date:	04282003
Est Person-Yrs to complete:	0
Estimated Size:	Not reported
Request to Delete Activity:	Not reported
Activity Status:	AWP
Definition of Status:	ANNUAL WORKPLAN - ACTIVE SITE
Liquids Removed (Gals):	0
Liquids Treated (Gals):	0
Action Included Capping:	Not reported
Well Decommissioned:	Not reported
Action Included Fencing:	Not reported
Removal Action Certification:	Not reported
Activity Comments:	Not reported
For Commercial Reuse:	0
For Industrial Reuse:	0
For Residential Reuse:	0
Unknown Type:	0
Facility ID:	19290312
Activity:	CERT
Activity Name:	CERTIFICATION
AWP Code:	N
Proposed Budget:	0
AWP Completion Date:	12302005
Revised Due Date:	Not reported
Comments Date:	Not reported
Est Person-Yrs to complete:	0
Estimated Size:	Not reported
Request to Delete Activity:	Not reported
Activity Status:	AWP
Definition of Status:	ANNUAL WORKPLAN - ACTIVE SITE
Liquids Removed (Gals):	0
Liquids Treated (Gals):	0
Action Included Capping:	Not reported
Well Decommissioned:	Not reported
Action Included Fencing:	Not reported
Removal Action Certification:	Not reported
Activity Comments:	Not reported
For Commercial Reuse:	0
For Industrial Reuse:	0
For Residential Reuse:	0
Unknown Type:	0
Facility ID:	19290312
Activity:	CEQA
Activity Name:	CEQA INCLUDING NEGATIVE DECS

WILLIAM MEAD HOMES (Continued) **S101482998**

AWP Code:	N
Proposed Budget:	0
AWP Completion Date:	Not reported
Revised Due Date:	Not reported
Comments Date:	01092003
Est Person-Yrs to complete:	0
Estimated Size:	Not reported
Request to Delete Activity:	Not reported
Activity Status:	AWP
Definition of Status:	ANNUAL WORKPLAN - ACTIVE SITE
Liquids Removed (Gals):	0
Liquids Treated (Gals):	0
Action Included Capping:	Not reported
Well Decommissioned:	Not reported
Action Included Fencing:	Not reported
Removal Action Certification:	Not reported
Activity Comments:	Not reported
For Commercial Reuse:	0
For Industrial Reuse:	0
For Residential Reuse:	0
Unknown Type:	0
Alternate Address:	1300 CARDINAL STREET
Alternate City,St,Zip:	LOS ANGELES, CA 90012
Background Info:	This site south of Cardinal Street previously operated as a refinery from 1900 - 1924 by the Southern Refining Company and Amalgamated Oil Company. Not reported Historical documents indicated refining equipment and above ground storage tanks (AGST). Dark oily materials were discovered during construction activities in the playground area. Areas were covered to prevent contact with potential contaminants. DTSC entered into a Voluntary Cleanup Program Agreement with the RP for oversight of a Preliminary Endangerment Assessment. Not reported AREA NORTH OF CARDINAL STREET This Site is divided into two areas, the area South of Cardinal Street is designated by the letter "S" following the commitment description, and the DTSC LEAD ACTIVITIES area North of Cardial Street is designated by the letter "N" following each description.
Comments Date:	01052001
Comments:	DTSC held an open house on Saturday 01/05/2001 from 11:00 a.m.
Comments Date:	01052001
Comments:	to 2:00 p.m.at William Mead Homes Community Center. The purpose
Comments Date:	01052001
Comments:	of the meeting was to present to the community the results of
Comments Date:	01052001
Comments:	DTSCs Investigation and to address any comment/concern.
Comments Date:	01092003
Comments:	DTSC approved the CEQA Initial Study.
Comments Date:	01152003
Comments:	Draft RAP & Draft CEQA Negative Declaration released for 30 day
Comments Date:	01152003
Comments:	public comment period.
Comments Date:	01262002
Comments:	Removal Action at School completed.
Comments Date:	01292003

WILLIAM MEAD HOMES (Continued) **S101482998**

Comments:	Public Meeting held at William Mead to present RAP and receive
Comments Date:	01292003
Comments:	comments.
Comments Date:	02011998
Comments:	RAW submitted 01/09/98 for DTSC review.
Comments Date:	02221999
Comments:	CEQA package was submitted to Planning & Environmental Analysis
Comments Date:	02221999
Comments:	Section for review and approval.
Comments Date:	02282001
Comments:	DTSCs contractor completed the Site Investigation Report for
Comments Date:	02282001
Comments:	William Mead Homes, North of Cardinal Street Area. The SI
Comments Date:	02282001
Comments:	Reports summarized the results of the investigation that was
Comments Date:	02282001
Comments:	conducted by DTSCs contractor. A total of 568 samples were
Comments Date:	02282001
Comments:	collected for 178 borings and analyzed for PAHs, semi-VOCs,
Comments Date:	02282001
Comments:	metals and lead.
Comments Date:	03021995
Comments:	Site visit conducted. Site currently a low income housing
Comments Date:	03021995
Comments:	project. Area identified for investigation is a playground
Comments Date:	03021995
Comments:	in the center of housing project. No obvious releases
Comments Date:	03021995
Comments:	or threat observed.
Comments Date:	03112002
Comments:	DTSC reviewed and approved the "Implementation Report" for the
Comments Date:	03112002
Comments:	Removal Action that took place South of Cardinal Street.
Comments Date:	03112003
Comments:	DTSC approved the CEQA Negative Declaration.
Comments Date:	03262004
Comments:	Housing Authority of the City of Los Angeles chose a
Comments Date:	03262004
Comments:	subcontractor (Earthtech) to excavate contaminated soils.
Comments Date:	03311998
Comments:	Comments submitted, and revised RAW for DTSC review. CEQA
Comments Date:	03311998
Comments:	package under development.
Comments Date:	04051997
Comments:	Several preliminary site control actions were taken. A fence
Comments Date:	04051997
Comments:	was installed around the playground to prevent community from
Comments Date:	04051997
Comments:	potential exposure. Signs were also posted around the fence
Comments Date:	04051997
Comments:	to prevent trespassing. Edible and medicinal plants were
Comments Date:	04051997
Comments:	removed throughout the site to prevent exposure to and in-
Comments Date:	04051997
Comments:	gestion of contaminants. Planter buckets/pots were distributed
Comments Date:	04051997
Comments:	to the community to replace removed plants. Approximately

WILLIAM MEAD HOMES (Continued) **S101482998**

Comments Date:	04051997
Comments:	7000 sq. ft. of soil were reseeded with Bermuda grass. In-
Comments Date:	04051997
Comments:	creased irrigation of site to maintain grass.
Comments Date:	04131995
Comments:	DTSC entered into a Voluntary Cleanup Program Agreement
Comments Date:	04131995
Comments:	with the City of Los Angeles to conduct a Preleminary
Comments Date:	04131995
Comments:	Endangerment Assessment.
Comments Date:	04161996
Comments:	PEA soil samples collected in Jan 1996. PAHs and heavy
Comments Date:	04161996
Comments:	metals identified at depths of 0-16 ft throughout the site.
Comments Date:	04161996
Comments:	High PAHs at 0-2 ft have prompted measures to prevent
Comments Date:	04161996
Comments:	exposure to dermal and ingestion routes of exposure. Re-sod
Comments Date:	04161996
Comments:	playing area & dirt cap on baseball diamond to be done. An advi-
Comments Date:	04161996
Comments:	sory letter with preliminary measures were sent 4/19/96.
Comments Date:	04161996
Comments:	On April 27, an informational public meeting was held to
Comments Date:	04161996
Comments:	inform the community.
Comments Date:	04161996
Comments:	Not reported
Comments Date:	04161996
Comments:	Not reported
Comments Date:	04182000
Comments:	CEQA:
Comments Date:	04182000
Comments:	Not reported
Comments Date:	04182000
Comments:	DTSC approved the Negative Declaration for the William Mead
Comments Date:	04182000
Comments:	Homes site.
Comments Date:	04182000
Comments:	Not reported
Comments Date:	04201999
Comments:	Planning & Environmental Analysis Section approved the draft
Comments Date:	04201999
Comments:	Initial Study and Negative Declarations for the RAW.
Comments Date:	04261996
Comments:	A PEA consisting of field sampling and analysis identified
Comments Date:	04261996
Comments:	the presence of elevated levels of polycyclic aromatic
Comments Date:	04261996
Comments:	hydrocarbons (PAHs) and heavy metals in the soil in various
Comments Date:	04261996
Comments:	areas of the site. Further action is warranted. The PEA is
Comments Date:	04261996
Comments:	considered complete.
Comments Date:	04282003
Comments:	DTSC approved the RAP for areas north of Cardinal street.
Comments Date:	04302003

WILLIAM MEAD HOMES (Continued) **S101482998**

Comments:	DTSC approved the Remedial Design and Health and Safety Plan.
Comments Date:	05012000
Comments:	DTSC approved the RAW for the William Mead Homes site.
Comments Date:	05191997
Comments:	Report for supplemental investigation, HRA, and site control
Comments Date:	05191997
Comments:	actions submitted for DTSC review.
Comments Date:	06052002
Comments:	RI/FS approved by DTSC.
Comments Date:	06131996
Comments:	DTSC and the Housing Authority of the City of Los Angeles
Comments Date:	06131996
Comments:	executed a second Voluntary Cleanup Agreement (VCA). This
Comments Date:	06131996
Comments:	VCA provides for Supplemental Investigation, Health Risk
Comments Date:	06131996
Comments:	Assessment and Removal Action.
Comments Date:	06131996
Comments:	Not reported
Comments Date:	07031998
Comments:	DTSC reviewed and tentatively approved the Removal Action
Comments Date:	07031998
Comments:	Workplan. Final approval is pending the completion of
Comments Date:	07031998
Comments:	support documents.
Comments Date:	07191998
Comments:	DTSC issued a fact sheet to inform the public with the progress
Comments Date:	07191998
Comments:	and the planned activities at the site.
Comments Date:	07191998
Comments:	Not reported
Comments Date:	07202000
Comments:	NORTH OF CARDINAL STREET SITE
Comments Date:	07202000
Comments:	DTSC approved and issued a Task Order for Tetra Tech, Inc. to
Comments Date:	07202000
Comments:	provide personnel services, material and equipment necessary
Comments Date:	07202000
Comments:	to conduct a Site Investigation of William Mead Homes, North
Comments Date:	07202000
Comments:	of Cardinal Street Site.
Comments Date:	07241997
Comments:	Ongoing discussions to revise HRA's progress. Public
Comments Date:	07241997
Comments:	participation activities being planned, for the presentation
Comments Date:	07241997
Comments:	of HRA.
Comments Date:	07241997
Comments:	Not reported
Comments Date:	08011996
Comments:	A draft workplan for the supplemental investigation was
Comments Date:	08011996
Comments:	submitted for DTSC review.
Comments Date:	08171999
Comments:	The RP updated and revised Draft RAW and support documents
Comments Date:	08171999
Comments:	to allow for new Treatment/Disposal Facility.

WILLIAM MEAD HOMES (Continued) **S101482998**

Comments Date:	08171999
Comments:	Not reported
Comments Date:	08232004
Comments:	Excavation of contaminated soils begins, expected to be
Comments Date:	08232004
Comments:	completed by June 2005.
Comments Date:	08302001
Comments:	Completion Report (RAW).
Comments Date:	09251998
Comments:	Risk Management plan, Health and Safety Plan and Draft
Comments Date:	09251998
Comments:	Engineering Design submitted for DTSC review.
Comments Date:	09251998
Comments:	Not reported
Comments Date:	10042001
Comments:	DTSC entered into a Consent Order with the Housing Authority
Comments Date:	10042001
Comments:	of the City of Los Angeles requiring them to complete a Remedial
Comments Date:	10042001
Comments:	Investigation/Feasibility Study and to implement appropriate
Comments Date:	10042001
Comments:	removal actions.
Comments Date:	10052001
Comments:	DTSC recovered a payment of $248,419.22. This amount covers
Comments Date:	10052001
Comments:	DTSC oversight cost from January 1999 to March 2001.
Comments Date:	10141999
Comments:	The draft RAW and proposed Negative Declaration were public
Comments Date:	10141999
Comments:	noticed for 30 days, public comment period starting October 14,
Comments Date:	10141999
Comments:	1999 and ending November 15, 1999.
Comments Date:	10181997
Comments:	Public meeting held to present results of HRA. CDM currently
Comments Date:	10181997
Comments:	preparing an addendum to HRA lead spread and Engineering
Comments Date:	10181997
Comments:	Evaluation/RAW.
Comments Date:	10251996
Comments:	Supplemental Investigation Workplan is approved. Work is to
Comments Date:	10251996
Comments:	include additional soil sampling, limited soil gas
Comments Date:	10251996
Comments:	investigation, baseline risk assessment, engineering
Comments Date:	10251996
Comments:	evaluation (remedial alternatives).
Comments Date:	10251996
Comments:	Not reported
Comments Date:	10301999
Comments:	A Public Meeting was held to accept comments on the draft RAW
Comments Date:	10301999
Comments:	and draft Negative Declaration. The meeting was held at
Comments Date:	10301999
Comments:	William Mead Homes Community Center at 1:00 P.M.
Comments Date:	10301999
Comments:	Not reported
Comments Date:	10302000

WILLIAM MEAD HOMES (Continued) **S101482998**

Comments:	In accordance with Field Sampling Plan and QC/QA and Health
Comments Date:	10302000
Comments:	and Safety Plan, DTSCs contractor sampled 178 boring locations
Comments Date:	10302000
Comments:	to a depth of 11 feet below ground surface to determine if
Comments Date:	10302000
Comments:	contaminants found south of Cardinal Street were present at the
Comments Date:	10302000
Comments:	northern part of William Mead Homes.
Comments Date:	10311997
Comments:	HRA approved.
Comments Date:	10311997
Comments:	Not reported
Comments Date:	11192001
Comments:	DTSCs contractor completed its Final Site Investigation Report.
Comments Date:	11192001
Comments:	The Final SI Report summarized the phase I investigation and
Comments Date:	11192001
Comments:	the phase II investigation that were completed in 9/01 and 10/01.
Comments Date:	11192001
Comments:	The Report also included the DTSC conclusion and recommendations.
Comments Date:	12011997
Comments:	Leadspread addendum to HRA reviewed and approved. Special
Comments Date:	12011997
Comments:	cantonese/vietnamese public partipation outreach conducted.
Comments Date:	12011997
Comments:	Engineerig Evaluation/Cost Analysis (EE/CA)/RAW currently being
Comments Date:	12011997
Comments:	prepared, pending Hazardous Waste characterization data
Comments Date:	12011997
Comments:	for disposal cost estimates.
Comments Date:	12011997
Comments:	Not reported
Comments Date:	12231996
Comments:	Supplemental Investigation field work completed.
Comments Date:	12231996
Comments:	Not reported
Comments Date:	12262001
Comments:	Elevated levels of lead were discovered beneath the sand box
Comments Date:	12262001
Comments:	play area at the Head Start State Preschool on Leroy Street,
Comments Date:	12262001
Comments:	between Magdalena Street and North Main Street. Remedial
Comments Date:	12262001
Comments:	measures taken consisted of capping the sand box with
Comments Date:	12262001
Comments:	concrete and installing a new play surface and new play
Comments Date:	12262001
Comments:	equipment.
ID Name:	CALSTARS CODE
ID Value:	300545
ID Name:	CALSTARS CODE
ID Value:	300434
Alternate Name:	WILLIAM MEAD HOMESWILLIAM MEAD HOMES SITESOUTHERN REFINING COMPANYAMALGAMATED OIL COMPANY
Special Programs Code:	Not reported
Special Programs Name:	Not reported

WILLIAM MEAD HOMES (Continued) **S101482998**

CORTESE:

Region:	CORTESE
Envirostor Id:	19290312
Site/Facility Type:	STATE RESPONSE
Cleanup Status:	ACTIVE
Status Date:	10/05/2001
Site Code:	300434, 300545
Latitude:	34.052588
Longitude:	-118.17795
Owner:	Not reported
Enf Type:	Not reported
Swat R:	Not reported
Flag:	export
Order No:	Not reported
Waste Discharge System No:	Not reported
Effective Date:	Not reported
Region 2:	Not reported
WID Id:	Not reported
Solid Waste Id No:	Not reported
Waste Management Uit Name:	Not reported

AWP:

AWP Facility ID:	19290312
Region Code:	3
Region:	GLENDALE
SMBR Branch Code:	SA
SMBR Branch Unit:	SO CAL - GLENDALE
Site Name.:	WILLIAM MEAD HOMES SITE
Current Status Date:	10052001
Current Status:	ANNUAL WORKPLAN - ACTIVE SITE
Lead Agency Code:	DTSC
Lead Agency:	DEPT OF TOXIC SUBSTANCES CONTROL
Facility Type:	responsible party
Awp Site Type:	RESPONSIBLE PARTY
NPL:	Not Listed
Tier Of AWP Site:	Not reported
Source Of Funding:	Not reported
Responsible Staff Member:	RKINSELL
Supervisor Responsible:	Not reported
SIC Code:	29
Facility SIC:	MANU - PETROLEUM & COAL PRODUCTS
RWQCB Code:	Not reported
RWQCB Associated With Site:	Not reported
Site Access Controlled:	Not reported
Site Listed HWS List:	Not reported
Hazard Ranking Score:	Not reported
Date Site Hazard Ranked:	Not reported
Groundwater Contamination:	Not reported
# Of Contamination Sources:	0
Lat/Long:	Not reported
Lat/Long (dms):	0 0 0 / 0 0 0
Lat/long Method:	Not reported
Description Of Entity:	Not reported
State Assembly Distt Code:	45
State Senate District:	22

WILLIAM MEAD HOMES (Continued) **S101482998**

RESPONSE:

Facility ID:	19290312
Site Type:	State Response
Site Type Detail:	State Response or NPL
Acres:	11.1
National Priorities List:	NO
Cleanup Oversight Agencies:	SMBRP
Lead Agency:	SMBRP
Lead Agency Description:	DTSC - Site Mitigation And Brownfield Reuse Program
Project Manager:	Michel Iskarous
Supervisor:	Allan Plaza
Division Branch:	Cleanup Chatsworth
Site Code:	301015
Site Mgmt. Req.:	NONE SPECIFIED
Assembly:	51
Senate:	24
Special Program Status:	Not reported
Status:	Active
Status Date:	10/05/2001
Restricted Use:	NO
Funding:	Responsible Party
Latitude:	34.05258
Longitude:	-118.1779
APN:	5226025039
Past Use:	OIL FIELD
Potential COC:	10060, 10093, 10196, 10199
Confirmed COC:	NONE SPECIFIED
Potential Description:	OTH, SOIL
Alias Name:	AMALGAMATED OIL COMPANY
Alias Type:	Alternate Name
Alias Name:	SOUTHERN REFINING COMPANY
Alias Type:	Alternate Name
Alias Name:	WILLIAM MEAD HOMES SITE
Alias Type:	Alternate Name
Alias Name:	5226025039
Alias Type:	APN
Alias Name:	110033620188
Alias Type:	EPA (FRS #)
Alias Name:	300434
Alias Type:	Project Code (Site Code)
Alias Name:	300545
Alias Type:	Project Code (Site Code)
Alias Name:	300855
Alias Type:	Project Code (Site Code)
Alias Name:	301015
Alias Type:	Project Code (Site Code)
Alias Name:	19290312
Alias Type:	Envirostor ID Number

Completed Info:

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Initial Study/ Neg. Declaration
Completed Date:	01/09/2003
Comments:	DTSC approved the CEQA Initial Study.
Completed Area Name:	PROJECT WIDE

WILLIAM MEAD HOMES (Continued) **S101482998**

Completed Sub Area Name: Not reported
Completed Document Type: Consent Order
Completed Date: 10/04/2001
Comments: DTSC entered into a Consent Order with the Housing Authority of the City of Los Angeles requiring them to complete a Remedial Investigation/Feasibility Study and to implement appropriate removal actions.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: CEQA - Initial Study/ Neg. Declaration
Completed Date: 04/18/2000
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Voluntary Cleanup Agreement
Completed Date: 06/13/1996
Comments: DTSC and the Housing Authority of the City of Los Angeles executed a second Voluntary Cleanup Agreement (VCA). This VCA provides for Supplemental Investigation, Health Risk Assessment and Removal Action. Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Voluntary Cleanup Agreement
Completed Date: 04/13/1995
Comments: DTSC entered into a Voluntary Cleanup Program Agreement with the City of Los Angeles to conduct a Preleminary Endangerment Assessment.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Voluntary Cleanup Agreement
Completed Date: 01/05/1999
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Removal Action Workplan
Completed Date: 04/18/2000
Comments: CEQA: DTSC approved the Negative Declaration for the William Mead Homes site.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Preliminary Assessment/Site Inspection Report (PA/SI)
Completed Date: 04/22/1994
Comments: A PEA consisting of field sampling and analysis identified the presence of elevated levels of polycyclic aromatic hydrocarbons (PAHs) and heavy metals in the soil in various areas of the site. Further action is warranted. The PEA is considered complete.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Site Screening
Completed Date: 03/02/1995
Comments: Site visit conducted. Site currently a low income housing project.

WILLIAM MEAD HOMES (Continued) **S101482998**

Area identified for investigation is a playground in the center of housing project. No obvious releases or threat observed.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Removal Action Completion Report
Completed Date: 08/08/2006
Comments: Certification Pending Deed Restriction

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Fact Sheets
Completed Date: 07/01/2000
Comments: Fact Sheet

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Fact Sheets
Completed Date: 12/01/2001
Comments: Fact Sheet

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Fact Sheets
Completed Date: 01/01/2003
Comments: Fact Sheet

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Remedial Action Plan
Completed Date: 04/28/2003
Comments: DTSC approved the RAP for areas north of Cardinal street.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Fieldwork
Completed Date: 06/01/2005
Comments: Fieldwork began in August 2004 and was completed in June, 2005. A Deed Restriction will be required for residual lead concentrations under sidewalks, streets, and buildings.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Design/Implementation Workplan
Completed Date: 04/30/2003
Comments: DTSC approved the Remedial Design and Health and Safety Plan.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Remedial Investigation / Feasibility Study
Completed Date: 06/05/2002
Comments: RI/FS approved by DTSC.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Removal Action Completion Report
Completed Date: 03/11/2002

WILLIAM MEAD HOMES (Continued) **S101482998**

Comments: DTSC reviewed and approved the "Implementation Report" for the Removal Action that took place South of Cardinal Street.

Future Area Name: PROJECT WIDE
Future Sub Area Name: Not reported
Future Document Type: Certification
Future Due Date: 2012
Schedule Area Name: PROJECT WIDE
Schedule Sub Area Name: Not reported
Schedule Document Type: Land Use Restriction
Schedule Due Date: 06/30/2011
Schedule Revised Date: Not reported

ENVIROSTOR:
Site Type: State Response
Site Type Detailed: State Response or NPL
Acres: 11.1
NPL: NO
Regulatory Agencies: SMBRP
Lead Agency: SMBRP
Program Manager: Michel Iskarous
Supervisor: Allan Plaza
Division Branch: Cleanup Chatsworth
Facility ID: 19290312
Site Code: 301015
Assembly: 51
Senate: 24
Special Program: Not reported
Status: Active
Status Date: 10/05/2001
Restricted Use: NO
Site Mgmt. Req.: NONE SPECIFIED
Funding: Responsible Party
Latitude: 34.05258
Longitude: -118.1779
APN: 5226025039
Past Use: OIL FIELD
Potential COC: 10060, 10093, 10196, 10199
Confirmed COC: NONE SPECIFIED
Potential Description: OTH, SOIL
Alias Name: AMALGAMATED OIL COMPANY
Alias Type: Alternate Name
Alias Name: SOUTHERN REFINING COMPANY
Alias Type: Alternate Name
Alias Name: WILLIAM MEAD HOMES SITE
Alias Type: Alternate Name
Alias Name: 5226025039
Alias Type: APN
Alias Name: 110033620188
Alias Type: EPA (FRS #)
Alias Name: 300434
Alias Type: Project Code (Site Code)
Alias Name: 300545
Alias Type: Project Code (Site Code)
Alias Name: 300855
Alias Type: Project Code (Site Code)
Alias Name: 301015

WILLIAM MEAD HOMES (Continued) **S101482998**

Alias Type: Project Code (Site Code)
Alias Name: 19290312
Alias Type: Envirostor ID Number

Completed Info:
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: CEQA - Initial Study/ Neg. Declaration
Completed Date: 01/09/2003
Comments: DTSC approved the CEQA Initial Study.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Consent Order
Completed Date: 10/04/2001
Comments: DTSC entered into a Consent Order with the Housing Authority of the City of Los Angeles requiring them to complete a Remedial Investigation/Feasibility Study and to implement appropriate removal actions.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: CEQA - Initial Study/ Neg. Declaration
Completed Date: 04/18/2000
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Voluntary Cleanup Agreement
Completed Date: 06/13/1996
Comments: DTSC and the Housing Authority of the City of Los Angeles executed a second Voluntary Cleanup Agreement (VCA). This VCA provides for Supplemental Investigation, Health Risk Assessment and Removal Action.
Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Voluntary Cleanup Agreement
Completed Date: 04/13/1995
Comments: DTSC entered into a Voluntary Cleanup Program Agreement with the City of Los Angeles to conduct a Preleminary Endangerment Assessment.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Voluntary Cleanup Agreement
Completed Date: 01/05/1999
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Removal Action Workplan
Completed Date: 04/18/2000
Comments: CEQA: DTSC approved the Negative Declaration for the William Mead Homes site.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Preliminary Assessment/Site Inspection Report (PA/SI)

WILLIAM MEAD HOMES (Continued) **S101482998**

Completed Date: 04/22/1994
Comments: A PEA consisting of field sampling and analysis identified the presence of elevated levels of polycyclic aromatic hydrocarbons (PAHs) and heavy metals in the soil in various areas of the site. Further action is warranted. The PEA is considered complete.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Site Screening
Completed Date: 03/02/1995
Comments: Site visit conducted. Site currently a low income housing project. Area identified for investigation is a playground in the center of housing project. No obvious releases or threat observed.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Removal Action Completion Report
Completed Date: 08/08/2006
Comments: Certification Pending Deed Restriction

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Fact Sheets
Completed Date: 07/01/2000
Comments: Fact Sheet

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Fact Sheets
Completed Date: 12/01/2001
Comments: Fact Sheet

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Fact Sheets
Completed Date: 01/01/2003
Comments: Fact Sheet

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Remedial Action Plan
Completed Date: 04/28/2003
Comments: DTSC approved the RAP for areas north of Cardinal street.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Fieldwork
Completed Date: 06/01/2005
Comments: Fieldwork began in August 2004 and was completed in June, 2005. A Deed Restriction will be required for residual lead concentrations under sidewalks, streets, and buildings.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Design/Implementation Workplan
Completed Date: 04/30/2003
Comments: DTSC approved the Remedial Design and Health and Safety Plan.

WILLIAM MEAD HOMES (Continued) **S101482998**

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Investigation / Feasibility Study
Completed Date:	06/05/2002
Comments:	RI/FS approved by DTSC.

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Completion Report
Completed Date:	03/11/2002
Comments:	DTSC reviewed and approved the "Implementation Report" for the Removal Action that took place South of Cardinal Street.

Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Certification
Future Due Date:	2012
Schedule Area Name:	PROJECT WIDE
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Land Use Restriction
Schedule Due Date:	06/30/2011
Schedule Revised Date:	Not reported

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81 **M.O.R.E. OIL COMPANY** **HIST Cal-Sites** **S102008346**
SE **645 SOUTH AVE. 21** **RESPONSE** **N/A**
1/2-1 **LOS ANGELES, CA 90031** **ENVIROSTOR**
0.614 mi.
3243 ft.

Relative:
Higher

Actual:
320 ft.

Calsite:

Facility ID:	19130103
Region:	3
Region Name:	GLENDALE
Branch:	SA
Branch Name:	SO CAL - GLENDALE
File Name:	Not reported
State Senate District:	05291985
Status:	CERTIFIED AS HAVING BEEN REMEDIED SATISFACTORILY UNDER DTSC OVERSIGHT
Status Name:	CERTIFIED
Lead Agency:	Not reported
Lead Agency:	N/A
Facility Type:	RP
Type Name:	RESPONSIBLE PARTY
NPL:	Not reported
SIC Code:	13
SIC Name:	OIL & GAS EXTRACTION
Access:	Not reported
Cortese:	Not reported
Hazardous Ranking Score:	Not reported
Date Site Hazard Ranked:	Not reported
Groundwater Contamination:	Not reported
Staff Member Responsible for Site:	Not reported
Supervisor Responsible for Site:	Not reported
Region Water Control Board:	Not reported
Region Water Control Board Name:	Not reported
Lat/Long Direction:	Not reported
Lat/Long (dms):	0 0 0 / 0 0 0
Lat/long Method:	Not reported

M.O.R.E. OIL COMPANY (Continued) **S102008346**

Lat/Long Description:	Not reported
State Assembly District Code:	45
State Senate District Code:	22
Facility ID:	19130103
Activity:	CERT
Activity Name:	CERTIFICATION
AWP Code:	Not reported
Proposed Budget:	0
AWP Completion Date:	Not reported
Revised Due Date:	Not reported
Comments Date:	05291985
Est Person-Yrs to complete:	0
Estimated Size:	Not reported
Request to Delete Activity:	Not reported
Activity Status:	CERT
Definition of Status:	CERTIFIED
Liquids Removed (Gals):	0
Liquids Treated (Gals):	0
Action Included Capping:	Not reported
Well Decommissioned:	Not reported
Action Included Fencing:	Not reported
Removal Action Certification:	Not reported
Activity Comments:	Not reported
For Commercial Reuse:	0
For Industrial Reuse:	0
For Residential Reuse:	0
Unknown Type:	0
Alternate Address:	645 SOUTH AVE. 21
Alternate City,St,Zip:	LOS ANGELES, CA 90031
Background Info:	M.O.R.E Oil "Mikhele Finkel" abandoned 500 drums of hazardous waste at 645 South Ave. 21. This caused spillage of acid and waste oil onto asphalt material.
Comments Date:	05291985
Comments:	545 drums of hazardous waste solids, 28 crushed drums, 3,150
Comments Date:	05291985
Comments:	gallons of waste oil were removed. The property was steam
Comments Date:	05291985
Comments:	cleaned and tested by Crosby and Overton.
ID Name:	Not reported
ID Value:	Not reported
Alternate Name:	M.O.R.E. OIL COMPANY
Special Programs Code:	Not reported
Special Programs Name:	Not reported

RESPONSE:

Facility ID:	19130103
Site Type:	State Response
Site Type Detail:	State Response or NPL
Acres:	0.01
National Priorities List:	NO
Cleanup Oversight Agencies:	NONE SPECIFIED
Lead Agency:	NONE SPECIFIED
Lead Agency Description:	Not reported
Project Manager:	Not reported
Supervisor:	Sayareh Amirebrahimi
Division Branch:	Cleanup Chatsworth
Site Code:	Not reported

M.O.R.E. OIL COMPANY (Continued) **S102008346**

Site Mgmt. Req.: NONE SPECIFIED
Assembly: 51
Senate: 24
Special Program Status: Not reported
Status: Certified
Status Date: 05/29/1985
Restricted Use: NO
Funding: Responsible Party
Latitude: 34.06522
Longitude: -118.2169
APN: 7462029008
Past Use: ILLEGAL DUMPING
Potential COC: 3002502, 304091
Confirmed COC: 304091,3002502
Potential Description: SOIL
Alias Name: 7462029008
Alias Type: APN
Alias Name: 110002671261
Alias Type: EPA (FRS #)
Alias Name: 19130103
Alias Type: Envirostor ID Number

Completed Info:
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Certification
Completed Date: 05/29/1985
Comments: 545 drums of hazardous waste solids, 28 crushed drums, 3,150 gallons of waste oil were removed. The property was steam cleaned and tested by Crosby and Overton.

Future Area Name: Not reported
Future Sub Area Name: Not reported
Future Document Type: Not reported
Future Due Date: Not reported
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported

ENVIROSTOR:
Site Type: State Response
Site Type Detailed: State Response or NPL
Acres: 0.01
NPL: NO
Regulatory Agencies: NONE SPECIFIED
Lead Agency: NONE SPECIFIED
Program Manager: Not reported
Supervisor: Sayareh Amirebrahimi
Division Branch: Cleanup Chatsworth
Facility ID: 19130103
Site Code: Not reported
Assembly: 51
Senate: 24
Special Program: Not reported
Status: Certified

M.O.R.E. OIL COMPANY (Continued) **S102008346**

Status Date: 05/29/1985
Restricted Use: NO
Site Mgmt. Req.: NONE SPECIFIED
Funding: Responsible Party
Latitude: 34.06522
Longitude: -118.2169
APN: 7462029008
Past Use: ILLEGAL DUMPING
Potential COC: 3002502, 304091
Confirmed COC: 304091,3002502
Potential Description: SOIL
Alias Name: 7462029008
Alias Type: APN
Alias Name: 110002671261
Alias Type: EPA (FRS #)
Alias Name: 19130103
Alias Type: Envirostor ID Number

Completed Info:
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Certification
Completed Date: 05/29/1985
Comments: 545 drums of hazardous waste solids, 28 crushed drums, 3,150 gallons of waste oil were removed. The property was steam cleaned and tested by Crosby and Overton.

Future Area Name: Not reported
Future Sub Area Name: Not reported
Future Document Type: Not reported
Future Due Date: Not reported
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported

82
SSW
1/2-1
0.716 mi.
3780 ft.

BAUCHET ST SITE **FINDS** **1009314270**
490 BAUCHET ST **NPDES** **N/A**
LOS ANGELES, CA 90012 **VCP**
HAZNET
ENVIROSTOR

Relative:
Lower

Actual:
292 ft.

FINDS:

Registry ID: 110024433184

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

NPDES:
Npdes Number: CAS000002

BAUCHET ST SITE (Continued) **1009314270**

Facility Status:	Terminated
Agency Id:	0
Region:	4
Regulatory Measure Id:	265499
Order No:	2009-0009-DWQ
Regulatory Measure Type:	Enrollee
Place Id:	Not reported
WDID:	4 19C338253
Program Type:	Construction
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	12/07/2005
Expiration Date Of Regulatory Measure:	Not reported
Termination Date Of Regulatory Measure:	10/19/2009
Discharge Name:	Southern California Gas Co
Discharge Address:	8141 Gulana Ave
Discharge City:	Playa Del Rey
Discharge State:	California
Discharge Zip:	90293

VCP:

Facility ID:	19490241
Site Type:	Voluntary Cleanup
Site Type Detail:	Voluntary Cleanup
Site Mgmt. Req.:	NONE SPECIFIED
Acres:	1.54
National Priorities List:	NO
Cleanup Oversight Agencies:	SMBRP
Lead Agency:	SMBRP
Lead Agency Description:	DTSC - Site Mitigation And Brownfield Reuse Program
Project Manager:	Chand Sultana
Supervisor:	Allan Plaza
Division Branch:	Cleanup Chatsworth
Site Code:	301002
Assembly:	51
Senate:	24
Special Programs Code:	Voluntary Cleanup Program
Status:	Active
Status Date:	06/21/2010
Restricted Use:	NO
Funding:	Responsible Party
Lat/Long:	34.06002 / -118.2287
APN:	5409-019-009
Past Use:	MANUFACTURED GAS PLANT
Potential COC:	30001, 30003, 30022, 30024, 30025, 30027, 30472, 30550, 30593
Confirmed COC:	30472-NO,30550-NO,30022-NO,30024-NO,30025-NO,30027-NO,30001-NO, 30003-NO,30593-NO
Potential Description:	OTH, SOIL
Alias Name:	ALISO E
Alias Type:	Alternate Name
Alias Name:	ALISO MANUFACTURED GAS PLANT
Alias Type:	Alternate Name
Alias Name:	SO CAL GAS - ALISO E
Alias Type:	Alternate Name
Alias Name:	SO CAL GAS - ALISO E MGP
Alias Type:	Alternate Name
Alias Name:	SOUTHERN CALIFORNIA GAS
Alias Type:	Alternate Name

BAUCHET ST SITE (Continued) **1009314270**

Alias Name: SOUTHERN CALIFORNIA GAS COMPANY
Alias Type: Alternate Name
Alias Name: 5409-019-009
Alias Type: APN
Alias Name: 110033609398
Alias Type: EPA (FRS #)
Alias Name: 300626
Alias Type: Project Code (Site Code)
Alias Name: 301002
Alias Type: Project Code (Site Code)
Alias Name: 19490241
Alias Type: Envirostor ID Number

Completed Info:
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: CEQA - Initial Study/ Neg. Declaration
Completed Date: 07/09/2005
Comments: CEQA (Notice of Exemption) approved.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Amendment - Order/Agreement
Completed Date: 01/04/1999
Comments: Transition to Chapter 6.5 - Amendment to the existing Consent Order, No. 96/97-015 signed by the RP.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Removal Action Completion Report
Completed Date: 11/12/2007
Comments: DTSC approved the Removal Action Completion Report.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Removal Action Workplan
Completed Date: 07/07/2005
Comments: DTSC approved the Final RAW for Sector E 490 Bauchet Street.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Remedial Investigation / Feasibility Study
Completed Date: 06/01/2005
Comments: Remedial Investigation Report approved.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Fieldwork
Completed Date: 01/30/2007
Comments: Field Work completed.

Future Area Name: PROJECT WIDE
Future Sub Area Name: Not reported
Future Document Type: Certification
Future Due Date: 2013
Schedule Area Name: PROJECT WIDE
Schedule Sub Area Name: Not reported
Schedule Document Type: Land Use Restriction

BAUCHET ST SITE (Continued) **1009314270**

Schedule Due Date: 06/30/2012
Schedule Revised Date: Not reported

HAZNET:
Year: 2006
Gepaid: CAR000170167
Contact: PAT J CANNEY
Telephone: 8586533104
Mailing Name: Not reported
Mailing Address: 6875 CONSOLIDATED WAY SD 1373
Mailing City,St,Zip: SAN DIEGO, CA 921212602
Gen County: Los Angeles
TSD EPA ID: CAD008302903
TSD County: Los Angeles
Waste Category: Unspecified aqueous solution
Disposal Method: R01
Tons: 12.51
Facility County: Los Angeles

ENVIROSTOR:
Site Type: Voluntary Cleanup
Site Type Detailed: Voluntary Cleanup
Acres: 1.54
NPL: NO
Regulatory Agencies: SMBRP
Lead Agency: SMBRP
Program Manager: Chand Sultana
Supervisor: Allan Plaza
Division Branch: Cleanup Chatsworth
Facility ID: 19490241
Site Code: 301002
Assembly: 51
Senate: 24
Special Program: Voluntary Cleanup Program
Status: Active
Status Date: 06/21/2010
Restricted Use: NO
Site Mgmt. Req.: NONE SPECIFIED
Funding: Responsible Party
Latitude: 34.06002
Longitude: -118.2287
APN: 5409-019-009
Past Use: MANUFACTURED GAS PLANT
Potential COC: 30001, 30003, 30022, 30024, 30025, 30027, 30472, 30550, 30593
Confirmed COC: 30472-NO,30550-NO,30022-NO,30024-NO,30025-NO,30027-NO,30001-NO, 30003-NO,30593-NO
Potential Description: OTH, SOIL
Alias Name: ALISO E
Alias Type: Alternate Name
Alias Name: ALISO MANUFACTURED GAS PLANT
Alias Type: Alternate Name
Alias Name: SO CAL GAS - ALISO E
Alias Type: Alternate Name
Alias Name: SO CAL GAS - ALISO E MGP
Alias Type: Alternate Name
Alias Name: SOUTHERN CALIFORNIA GAS

BAUCHET ST SITE (Continued) **1009314270**

Alias Type: Alternate Name
Alias Name: SOUTHERN CALIFORNIA GAS COMPANY
Alias Type: Alternate Name
Alias Name: 5409-019-009
Alias Type: APN
Alias Name: 110033609398
Alias Type: EPA (FRS #)
Alias Name: 300626
Alias Type: Project Code (Site Code)
Alias Name: 301002
Alias Type: Project Code (Site Code)
Alias Name: 19490241
Alias Type: Envirostor ID Number

Completed Info:
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: CEQA - Initial Study/ Neg. Declaration
Completed Date: 07/09/2005
Comments: CEQA (Notice of Exemption) approved.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Amendment - Order/Agreement
Completed Date: 01/04/1999
Comments: Transition to Chapter 6.5 - Amendment to the existing Consent Order, No. 96/97-015 signed by the RP.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Removal Action Completion Report
Completed Date: 11/12/2007
Comments: DTSC approved the Removal Action Completion Report.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Removal Action Workplan
Completed Date: 07/07/2005
Comments: DTSC approved the Final RAW for Sector E 490 Bauchet Street.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Remedial Investigation / Feasibility Study
Completed Date: 06/01/2005
Comments: Remedial Investigation Report approved.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Fieldwork
Completed Date: 01/30/2007
Comments: Field Work completed.

Future Area Name: PROJECT WIDE
Future Sub Area Name: Not reported
Future Document Type: Certification
Future Due Date: 2013
Schedule Area Name: PROJECT WIDE
Schedule Sub Area Name: Not reported

BAUCHET ST SITE (Continued) **1009314270**

Schedule Document Type: Land Use Restriction
Schedule Due Date: 06/30/2012
Schedule Revised Date: Not reported

83
SW
1/2-1
0.752 mi.
3973 ft.

FORMER CORNFIELD RAIL YARD
1245 N SPRING ST
LOS ANGELES, CA 90012

VCP **S104573224**
HAZNET **N/A**
ENVIROSTOR

Relative:
Lower

Actual:
292 ft.

VCP:

Facility ID:	19400013
Site Type:	Voluntary Cleanup
Site Type Detail:	Voluntary Cleanup
Site Mgmt. Req.:	NONE SPECIFIED
Acres:	32
National Priorities List:	NO
Cleanup Oversight Agencies:	SMBRP
Lead Agency:	SMBRP
Lead Agency Description:	DTSC - Site Mitigation And Brownfield Reuse Program
Project Manager:	Tedd Yargeau
Supervisor:	Rita Kamat
Division Branch:	Cleanup Chatsworth
Site Code:	301019
Assembly:	51
Senate:	24
Special Programs Code:	Voluntary Cleanup Program
Status:	Certified
Status Date:	02/28/2003
Restricted Use:	NO
Funding:	Responsible Party
Lat/Long:	34.06805 / -118.2322
APN:	NONE SPECIFIED
Past Use:	FUEL - VEHICLE STORAGE/ REFUELING, RAIL ROAD MAINTENANCE SHOP, RAILROAD RIGHT OF WAY
Potential COC:	30001, 30013, 3002502
Confirmed COC:	30001,30013,3002502
Potential Description:	OTH, SOIL
Alias Name:	CORNFIELDS
Alias Type:	Alternate Name
Alias Name:	CORNFIELDS RAILYARD
Alias Type:	Alternate Name
Alias Name:	CORNFIELDS SITE
Alias Type:	Alternate Name
Alias Name:	FORMER CORNFIELDS SITE
Alias Type:	Alternate Name
Alias Name:	110033613686
Alias Type:	EPA (FRS #)
Alias Name:	301019
Alias Type:	Project Code (Site Code)
Alias Name:	19400013
Alias Type:	Envirostor ID Number

Completed Info:

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Initial Study/ Mitigated Neg. Dec. (MND)
Completed Date:	11/15/2002

FORMER CORNFIELD RAIL YARD (Continued) **S104573224**

Comments: VCA2

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Voluntary Cleanup Agreement
Completed Date: 05/17/2002
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Voluntary Cleanup Agreement
Completed Date: 08/28/2001
Comments: DTSC and proponent, Dept. of Parks and Recreation, enter into Voluntary Cleanup Agreement.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Removal Action Completion Report
Completed Date: 02/28/2003
Comments: VCA2

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Removal Action Workplan
Completed Date: 11/18/2002
Comments: DTSC approves Removal Action Workplan for Site.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Preliminary Endangerment Assessment Report
Completed Date: 09/16/2002
Comments: Site characterization activities which included additional sampling have been completed.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Preliminary Endangerment Assessment Report
Completed Date: 12/20/2001
Comments: Draft Final PEA Report conditionally approved pending the submittal of the waste manifests to be included in the Final PEA Report.

Future Area Name: Not reported
Future Sub Area Name: Not reported
Future Document Type: Not reported
Future Due Date: Not reported
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported

HAZNET:
Year: 2008
Gepaid: CAC002631337
Contact: GILBERT HERNANDEZ/X110
Telephone: 3105584566
Mailing Name: Not reported

FORMER CORNFIELD RAIL YARD (Continued) **S104573224**

Mailing Address: 700 N ALAMEDA ST STE 4-500
Mailing City,St,Zip: LOS ANGELES, CA 90012
Gen County: Los Angeles
TSD EPA ID: CAD028409019
TSD County: Los Angeles
Waste Category: Other organic solids
Disposal Method: STORAGE, BULKING, AND/OR TRANSFER OFF SITE--NO TREATMENT/REOVERY (H010-H129) OR (H131-H135)
Tons: 0.025
Facility County: Los Angeles

Year: 2003
Gepaid: CAP000140376
Contact: FORMER CORNFIELD RAIL YARD
Telephone: 0
Mailing Name: Not reported
Mailing Address: ONE CAPITOL MALL SUITE 500
Mailing City,St,Zip: SACRAMENTO, CA 958140000
Gen County: Los Angeles
TSD EPA ID: CAT000646117
TSD County: Los Angeles
Waste Category: Contaminated soil from site clean-up
Disposal Method: D80
Tons: 1638.4
Facility County: Los Angeles

Year: 2003
Gepaid: CAP000140376
Contact: FORMER CORNFIELD RAIL YARD
Telephone: 0
Mailing Name: Not reported
Mailing Address: ONE CAPITOL MALL SUITE 500
Mailing City,St,Zip: SACRAMENTO, CA 958140000
Gen County: Los Angeles
TSD EPA ID: CAT000646117
TSD County: Los Angeles
Waste Category: Contaminated soil from site clean-up
Disposal Method: T01
Tons: 147.49
Facility County: Los Angeles

Year: 2003
Gepaid: CAP000140376
Contact: FORMER CORNFIELD RAIL YARD
Telephone: 0
Mailing Name: Not reported
Mailing Address: ONE CAPITOL MALL SUITE 500
Mailing City,St,Zip: SACRAMENTO, CA 958140000
Gen County: Los Angeles
TSD EPA ID: CAT000646117
TSD County: Los Angeles
Waste Category: Contaminated soil from site clean-up
Disposal Method: Not reported
Tons: 15.17
Facility County: Los Angeles

Year: 2000

FORMER CORNFIELD RAIL YARD (Continued) **S104573224**

Gepaid:	CAC002326673
Contact:	UNION PACIFIC RAILROAD CORP
Telephone:	4022714327
Mailing Name:	Not reported
Mailing Address:	1416 DODGE ST ROOM 930
Mailing City,St,Zip:	OMAHA, NE 681790930
Gen County:	Los Angeles
TSD EPA ID:	CAT080013352
TSD County:	Los Angeles
Waste Category:	Waste oil and mixed oil
Disposal Method:	R01
Tons:	.7714
Facility County:	Los Angeles

Click this hyperlink while viewing on your computer to access
3 additional CA_HAZNET: record(s) in the EDR Site Report.

ENVIROSTOR:

Site Type:	Voluntary Cleanup
Site Type Detailed:	Voluntary Cleanup
Acres:	32
NPL:	NO
Regulatory Agencies:	SMBRP
Lead Agency:	SMBRP
Program Manager:	Tedd Yargeau
Supervisor:	Rita Kamat
Division Branch:	Cleanup Chatsworth
Facility ID:	19400013
Site Code:	301019
Assembly:	51
Senate:	24
Special Program:	Voluntary Cleanup Program
Status:	Certified
Status Date:	02/28/2003
Restricted Use:	NO
Site Mgmt. Req.:	NONE SPECIFIED
Funding:	Responsible Party
Latitude:	34.06805
Longitude:	-118.2322
APN:	NONE SPECIFIED
Past Use:	FUEL - VEHICLE STORAGE/ REFUELING, RAIL ROAD MAINTENANCE SHOP, RAILROAD RIGHT OF WAY
Potential COC:	30001, 30013, 3002502
Confirmed COC:	30001,30013,3002502
Potential Description:	OTH, SOIL
Alias Name:	CORNFIELDS
Alias Type:	Alternate Name
Alias Name:	CORNFIELDS RAILYARD
Alias Type:	Alternate Name
Alias Name:	CORNFIELDS SITE
Alias Type:	Alternate Name
Alias Name:	FORMER CORNFIELDS SITE
Alias Type:	Alternate Name
Alias Name:	110033613686
Alias Type:	EPA (FRS #)
Alias Name:	301019
Alias Type:	Project Code (Site Code)

FORMER CORNFIELD RAIL YARD (Continued) **S104573224**

Alias Name: 19400013
Alias Type: Envirostor ID Number

Completed Info:
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: CEQA - Initial Study/ Mitigated Neg. Dec. (MND)
Completed Date: 11/15/2002
Comments: VCA2

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Voluntary Cleanup Agreement
Completed Date: 05/17/2002
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Voluntary Cleanup Agreement
Completed Date: 08/28/2001
Comments: DTSC and proponent, Dept. of Parks and Recreation, enter into Voluntary Cleanup Agreement.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Removal Action Completion Report
Completed Date: 02/28/2003
Comments: VCA2

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Removal Action Workplan
Completed Date: 11/18/2002
Comments: DTSC approves Removal Action Workplan for Site.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Preliminary Endangerment Assessment Report
Completed Date: 09/16/2002
Comments: Site characterization activities which included additional sampling have been completed.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Preliminary Endangerment Assessment Report
Completed Date: 12/20/2001
Comments: Draft Final PEA Report conditionally approved pending the submittal of the waste manifests to be included in the Final PEA Report.

Future Area Name: Not reported
Future Sub Area Name: Not reported
Future Document Type: Not reported
Future Due Date: Not reported
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported

84
SSW
1/2-1
0.779 mi.
4114 ft.

SO CAL GAS/ALISO E MGP
490 BAUCHET STREET AND VIGNES STREET
LOS ANGELES, CA 90012

Manufactured Gas Plants **1008407707**
N/A

Relative:
Lower

Actual:
293 ft.

Manufactured Gas Plants:

Sector E of the Aliso Street Towne Gas facility covers approximately nine acres and has been used for numerous industrial purposes including refined oil storage, 1,3-Butadiene storage, manufactured gas plant (MGP) feedstock storage, mannequin manufaccturing, and hard chrome plating. The sector is currently used for parking, a refueling station, and offices. Part of the former Aliso Street manufactured gas plant (MGP) and butadiene

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U85
NNE
1/2-1
0.782 mi.
4128 ft.

JAYBEE SITE AT LINCOLN HEIGHTS - LA DWP
301 WEST AVENUE 26
LOS ANGELES, CA 90031
Site 1 of 2 in cluster U

VCP **S106833414**
EMI **N/A**
ENVIROSTOR

Relative:
Higher

Actual:
348 ft.

VCP:

Facility ID:	19490238
Site Type:	Voluntary Cleanup
Site Type Detail:	Voluntary Cleanup
Site Mgmt. Req.:	NONE SPECIFIED
Acres:	3.4
National Priorities List:	NO
Cleanup Oversight Agencies:	SMBRP
Lead Agency:	SMBRP
Lead Agency Description:	DTSC - Site Mitigation And Brownfield Reuse Program
Project Manager:	Alberto Valmidiano
Supervisor:	Juli Propes
Division Branch:	Cleanup Chatsworth
Site Code:	301120
Assembly:	51
Senate:	24
Special Programs Code:	Voluntary Cleanup Program
Status:	Active
Status Date:	04/07/2004
Restricted Use:	NO
Funding:	Responsible Party
Lat/Long:	34.08074 / -118.2181
APN:	5205-009-900
Past Use:	MANUFACTURING - OTHER
Potential COC:	30013, 30019, 30022, 30024, 30025, 30027, 30193, 30484, 30550, 30593
Confirmed COC:	30484,30550,30019,30022,30024,30025,30027,30193,30013,30593
Potential Description:	OTH, SOIL
Alias Name:	DEPARTMENT OF WATER & POWER, CITY OF LA
Alias Type:	Alternate Name
Alias Name:	DWP - CITY OF LOS ANGELES
Alias Type:	Alternate Name
Alias Name:	JAYBEE SITE
Alias Type:	Alternate Name
Alias Name:	LINCOLN HEIGHTS SERVICE CENTER
Alias Type:	Alternate Name
Alias Name:	5205-009-900
Alias Type:	APN
Alias Name:	CAD983578667
Alias Type:	CERCLIS ID
Alias Name:	110009268657
Alias Type:	EPA (FRS #)

JAYBEE SITE AT LINCOLN HEIGHTS - LA DWP (Continued) **S106833414**

Alias Name: 110033606649
Alias Type: EPA (FRS #)
Alias Name: 301120
Alias Type: Project Code (Site Code)
Alias Name: 19490238
Alias Type: Envirostor ID Number

Completed Info:
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Voluntary Cleanup Agreement
Completed Date: 04/07/2004
Comments: The Voluntary Cleanup Agreement was signed by representatives from the Los Angeles Department of Water and Power and the Department of Toxic Substances Control. The purpose of the Agreement is for the Proponent to conduct a Preliminary Endangerment Assessment of the soil under the oversight of DTSC.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Site Screening
Completed Date: 09/14/1995
Comments: The Department received a Non-Emergency Hazardous Substance Release Report dated July 8, 1994. The report indicates that the property was contaminated at the time of purchase in March 1990. Leaking undergound storage tanks have been removed by the previous owner. Some of the contaminated soils have been removed from the site. Soils contaminated with lead are still exist at the site. Due to evidence of a release, DTSC recommended a PEA, and notified the RP thereof.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Preliminary Endangerment Assessment Workplan
Completed Date: 05/12/2005
Comments: The PEA Workplan was approved

Future Area Name: Not reported
Future Sub Area Name: Not reported
Future Document Type: Not reported
Future Due Date: Not reported
Schedule Area Name: PROJECT WIDE
Schedule Sub Area Name: Not reported
Schedule Document Type: Remedial Investigation Report
Schedule Due Date: 09/28/2010
Schedule Revised Date: Not reported

EMI:
Year: 1987
County Code: 19
Air Basin: SC
Facility ID: 16454
Air District Name: SC
SIC Code: 3444
Air District Name: SOUTH COAST AQMD
Community Health Air Pollution Info System: Not reported
Consolidated Emission Reporting Rule: Not reported

JAYBEE SITE AT LINCOLN HEIGHTS - LA DWP (Continued) **S106833414**

Total Organic Hydrocarbon Gases Tons/Yr:	14
Reactive Organic Gases Tons/Yr:	13
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	1
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

ENVIROSTOR:

Site Type:	Voluntary Cleanup
Site Type Detailed:	Voluntary Cleanup
Acres:	3.4
NPL:	NO
Regulatory Agencies:	SMBRP
Lead Agency:	SMBRP
Program Manager:	Alberto Valmidiano
Supervisor:	Juli Propes
Division Branch:	Cleanup Chatsworth
Facility ID:	19490238
Site Code:	301120
Assembly:	51
Senate:	24
Special Program:	Voluntary Cleanup Program
Status:	Active
Status Date:	04/07/2004
Restricted Use:	NO
Site Mgmt. Req.:	NONE SPECIFIED
Funding:	Responsible Party
Latitude:	34.08074
Longitude:	-118.2181
APN:	5205-009-900
Past Use:	MANUFACTURING - OTHER
Potential COC:	30013, 30019, 30022, 30024, 30025, 30027, 30193, 30484, 30550, 30593
Confirmed COC:	30484,30550,30019,30022,30024,30025,30027,30193,30013,30593
Potential Description:	OTH, SOIL
Alias Name:	DEPARTMENT OF WATER & POWER, CITY OF LA
Alias Type:	Alternate Name
Alias Name:	DWP - CITY OF LOS ANGELES
Alias Type:	Alternate Name
Alias Name:	JAYBEE SITE
Alias Type:	Alternate Name
Alias Name:	LINCOLN HEIGHTS SERVICE CENTER
Alias Type:	Alternate Name
Alias Name:	5205-009-900
Alias Type:	APN
Alias Name:	CAD983578667
Alias Type:	CERCLIS ID
Alias Name:	110009268657
Alias Type:	EPA (FRS #)
Alias Name:	110033606649
Alias Type:	EPA (FRS #)
Alias Name:	301120
Alias Type:	Project Code (Site Code)
Alias Name:	19490238
Alias Type:	Envirostor ID Number

Completed Info:

JAYBEE SITE AT LINCOLN HEIGHTS - LA DWP (Continued) **S106833414**

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Voluntary Cleanup Agreement
Completed Date:	04/07/2004
Comments:	The Voluntary Cleanup Agreement was signed by representatives from the Los Angeles Department of Water and Power and the Department of Toxic Substances Control. The purpose of the Agreement is for the Proponent to conduct a Preliminary Endangerment Assessment of the soil under the oversight of DTSC.

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Site Screening
Completed Date:	09/14/1995
Comments:	The Department received a Non-Emergency Hazardous Substance Release Report dated July 8, 1994. The report indicates that the property was contaminated at the time of purchase in March 1990. Leaking undergound storage tanks have been removed by the previous owner. Some of the contaminated soils have been removed from the site. Soils contaminated with lead are still exist at the site. Due to evidence of a release, DTSC recommended a PEA, and notified the RP thereof.

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Preliminary Endangerment Assessment Workplan
Completed Date:	05/12/2005
Comments:	The PEA Workplan was approved

Future Area Name:	Not reported
Future Sub Area Name:	Not reported
Future Document Type:	Not reported
Future Due Date:	Not reported
Schedule Area Name:	PROJECT WIDE
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Remedial Investigation Report
Schedule Due Date:	09/28/2010
Schedule Revised Date:	Not reported

U86 **PROPOSED AMCAL MULTI-HOUSING DEVELOPMENT** **ENVIROSTOR** **S106797596**
NNE **306-360 W. AVE. 26** **N/A**
1/2-1 **LOS ANGELES, CA 90031**
0.783 mi.
4132 ft. **Site 2 of 2 in cluster U**

Relative:
Higher

Actual:
349 ft.

ENVIROSTOR:

Site Type:	Evaluation
Site Type Detailed:	Evaluation
Acres:	Not reported
NPL:	NO
Regulatory Agencies:	NONE SPECIFIED
Lead Agency:	NONE SPECIFIED
Program Manager:	Not reported
Supervisor:	Referred - Not Assigned
Division Branch:	Cleanup Cypress
Facility ID:	19950002
Site Code:	Not reported
Assembly:	45

PROPOSED AMCAL MULTI-HOUSING DEVELOPMENT (Continued) **S106797596**

Senate: 22
Special Program: Not reported
Status: Refer: 1248 Local Agency
Status Date: 11/14/2003
Restricted Use: NO
Site Mgmt. Req.: NONE SPECIFIED
Funding: Not Applicable
Latitude: 0
Longitude: 0
APN: NONE SPECIFIED
Past Use: NONE SPECIFIED
Potential COC: NONE SPECIFIED
Confirmed COC: NONE SPECIFIED
Potential Description: NONE SPECIFIED
Alias Name: 19950002
Alias Type: Envirostor ID Number

Completed Info:
Completed Area Name: Not reported
Completed Sub Area Name: Not reported
Completed Document Type: Not reported
Completed Date: Not reported
Comments: Not reported

Future Area Name: Not reported
Future Sub Area Name: Not reported
Future Document Type: Not reported
Future Due Date: Not reported
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported

87
ESE
1/2-1
0.818 mi.
4318 ft.

BUILDERS HARDWARE FINISHERS
1846 SICHEL ST
LOS ANGELES, CA 90031

CERC-NFRAP **1000278696**
LIENS 2 **CAD020155461**
RCRA-SQG
CONSENT
FINDS

Relative:
Higher

Actual:
325 ft.

CERC-NFRAP:
Site ID: 0900183
Federal Facility: Not a Federal Facility
NPL Status: Not on the NPL
Non NPL Status: Removal Only Site (No Site Assessment Work Needed)

CERCLIS-NFRAP Site Contact Details:
Contact Sequence ID: 13055157.00000
Person ID: 9271184.00000

Contact Sequence ID: 13290309.00000
Person ID: 13003854.00000

Contact Sequence ID: 13295904.00000
Person ID: 13003858.00000

Contact Sequence ID: 13301762.00000
Person ID: 13004003.00000

BUILDERS HARDWARE FINISHERS (Continued) **1000278696**

CERCLIS-NFRAP Site Alias Name(s):
Alias Name: BHFI
Alias Address: Not reported
CA

CERCLIS-NFRAP Assessment History:
Action: REMOVAL
Date Started: 05/23/1988
Date Completed: 07/18/1988
Priority Level: Cleaned up

Action: ADMINISTRATIVE RECORDS
Date Started: 04/24/1989
Date Completed: 04/24/1989
Priority Level: Admin Record Compiled for a Removal Event

Action: ADMINISTRATIVE ORDER ON CONSENT
Date Started: Not reported
Date Completed: 01/26/1990
Priority Level: Not reported

Action: CONSENT DECREE
Date Started: 05/14/1990
Date Completed: 10/31/1990
Priority Level: Not reported

Action: SECTION 107 LITIGATION
Date Started: 09/29/1989
Date Completed: 10/31/1990
Priority Level: Not reported

Action: JUDICIAL/CIVIL JUDGMENT
Date Started: Not reported
Date Completed: 01/02/1992
Priority Level: Not reported

Action: ARCHIVE SITE
Date Started: Not reported
Date Completed: 01/23/1996
Priority Level: Not reported

LIENS 2:
Facility name: BUILDERS HARDWARE FINISHING INC
Facility address: 1846 SICHEL ST
LOS ANGELES, CA 90031
EPA ID: CAD020155461
Action: LP001 - Lien on PRP property
Start date: 07/05/1988
Complete date: Not reported
Notice date: Not reported
Enforcemant date: Not reported
Reardon date: Not reported
Statutes: Not reported

RCRA-SQG:

BUILDERS HARDWARE FINISHERS (Continued) **1000278696**

Date form received by agency: 09/01/1996
Facility name: BUILDERS HARDWARE FINISHERS
Facility address: 1846 SICHEL ST
LOS ANGELES, CA 90031
EPA ID: CAD020155461
Mailing address: SICHEL ST
LOS ANGELES, CA 90031
Contact: Not reported
Contact address: Not reported
Not reported
Contact country: Not reported
Contact telephone: Not reported
Contact email: Not reported
EPA Region: 09
Classification: Small Small Quantity Generator
Description: Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:
Owner/operator name: JOE DURAN
Owner/operator address: NOT REQUIRED
NOT REQUIRED, ME 99999
Owner/operator country: Not reported
Owner/operator telephone: (415) 555-1212
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Owner/operator name: NOT REQUIRED
Owner/operator address: NOT REQUIRED
NOT REQUIRED, ME 99999
Owner/operator country: Not reported
Owner/operator telephone: (415) 555-1212
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No

BUILDERS HARDWARE FINISHERS (Continued) **1000278696**

Used oil transfer facility: No
Used oil transporter: No

Violation Status: No violations found

CONSENT:
EPA ID: CAD020155461
Site ID: Not reported
Case Title: U.S. V BUILDER'S HARDWARE FINISHERS, INC.
Court Num: 90-5428
District: California, Cent
Entered Date: 19901031
Full-text of the consent decree for this site issued by the United States District Court is available from EDR. Contact your EDR Account Executive.

FINDS:

Registry ID: 110002638682

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

ICIS (Integrated Compliance Information System) is the Integrated Compliance Information System and provides a database that, when complete, will contain integrated Enforcement and Compliance information across most of EPA's programs. The vision for ICIS is to replace EPA's independent databases that contain Enforcement data with a single repository for that information. Currently, ICIS contains all Federal Administrative and Judicial enforcement actions. This information is maintained in ICIS by EPA in the Regional offices and it Headquarters. A future release of ICIS will replace the Permit Compliance System (PCS) which supports the NPDES and will integrate that information with Federal actions already in the system. ICIS also has the capability to track other activities occurring in the Region that support Compliance and Enforcement programs. These include; Incident Tracking, Compliance Assistance, and Compliance Monitoring.

88
SW
1/2-1
0.870 mi.
4593 ft.

MAGNUS COMPANY, INC **ENVIROSTOR** **S101480911**
860 NORTH MAIN STREET **N/A**
LOS ANGELES, CA 90012

Relative:
Lower

Actual:
290 ft.

ENVIROSTOR:
Site Type: Historical
Site Type Detailed: * Historical
Acres: 0
NPL: NO
Regulatory Agencies: NONE SPECIFIED
Lead Agency: NONE SPECIFIED
Program Manager: Not reported

MAGNUS COMPANY, INC (Continued) **S101480911**

Supervisor:	* Mmonroy
Division Branch:	Cleanup Chatsworth
Facility ID:	19370356
Site Code:	Not reported
Assembly:	51
Senate:	24
Special Program:	* RCRA 3012 - Past Haz Waste Disp Inven Site
Status:	No Further Action
Status Date:	01/24/1984
Restricted Use:	NO
Site Mgmt. Req.:	NONE SPECIFIED
Funding:	Not reported
Latitude:	34.06083
Longitude:	-118.2352
APN:	NONE SPECIFIED
Past Use:	MANUFACTURING - METAL
Potential COC:	NONE SPECIFIED,31000
Confirmed COC:	31000-NO
Potential Description:	NMA
Alias Name:	CAD980636138
Alias Type:	EPA Identification Number
Alias Name:	19370355
Alias Type:	Envirostor ID Number
Alias Name:	19370356
Alias Type:	Envirostor ID Number

Completed Info:

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	* Discovery
Completed Date:	09/28/1983
Comments:	FACILITY IDENTIFIED ID FROM ERRIS

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Site Screening
Completed Date:	10/27/1994
Comments:	Database verification project confirms NFA for DTSC.

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Preliminary Assessment Report
Completed Date:	01/24/1984
Comments:	FACILITY DRIVE-BY ASAP. ZONING & ACTIVITY CHANGES AT THIS AREA-US POSTAL SERVICE BLDG. SUBMIT TO EPA PRELIM ASSESS DONE RCRA 3012

Future Area Name:	Not reported
Future Sub Area Name:	Not reported
Future Document Type:	Not reported
Future Due Date:	Not reported
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported

89
SSW
1/2-1
0.891 mi.
4705 ft.

MOGUL CORPORATION
967 NORTH VIGNES STREET
LOS ANGELES, CA 90012

ENVIROSTOR **S101481023**
N/A

Relative:
Lower

Actual:
289 ft.

ENVIROSTOR:

Site Type:	Evaluation
Site Type Detailed:	Evaluation
Acres:	0
NPL:	NO
Regulatory Agencies:	NONE SPECIFIED
Lead Agency:	NONE SPECIFIED
Program Manager:	Not reported
Supervisor:	* Frances Collier
Division Branch:	Cleanup Chatsworth
Facility ID:	19510059
Site Code:	Not reported
Assembly:	51
Senate:	24
Special Program:	EPA - PASI
Status:	No Further Action
Status Date:	09/09/1985
Restricted Use:	NO
Site Mgmt. Req.:	NONE SPECIFIED
Funding:	EPA Grant
Latitude:	34.05848
Longitude:	-118.2327
APN:	5409016026
Past Use:	MANUFACTURING - CHEMICALS
Potential COC:	30001, 30153
Confirmed COC:	30153-NO,30001-NO
Potential Description:	SOIL, SV
Alias Name:	SKASOL OF SOUTHERN CALIFORNIA INC
Alias Type:	Alternate Name
Alias Name:	5409016026
Alias Type:	APN
Alias Name:	CAD056437460
Alias Type:	EPA Identification Number
Alias Name:	19510059
Alias Type:	Envirostor ID Number

Completed Info:

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	* Discovery
Completed Date:	09/28/1983
Comments:	FACILITY IDENTIFIED ID FROM ERRIS
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Site Screening
Completed Date:	12/04/1987
Comments:	SITE SCREENING DONE ON CERCLIS
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Preliminary Assessment Report
Completed Date:	02/05/1984
Comments:	T/C W/ D.BORES & D.WILBUR,MOGUL,216-272- 1353 - 1)SOURCE ACT: BLEND &

MOGUL CORPORATION (Continued) **S101481023**

PACKAGE WATER TREATMENT CHEM. 2)WASTE: (MOGUL) HAULED BY CHEMICAL WASTE MFMT.(SKASOL) ONSITE DISP-EVAP/PERCOLATION ON SOILLAND SODIUM DICHROMATE,BASES,DICHLOROBENZEN, HYDRAZINE,HYDROCHLORIC,SULFURIC ACID, FINAL STRATEGY RECOM INSP, SAMPLING, & SOIL ANALYSIS SUBMIT TO EPA PRELIM ASSESS DONE RCRA 3012

Future Area Name:	Not reported
Future Sub Area Name:	Not reported
Future Document Type:	Not reported
Future Due Date:	Not reported
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported

90
SSW
1/2-1
0.914 mi.
4825 ft.

SO CAL GAS/ALISO D MGP **Manufactured Gas Plants** **1008407706**
CESAR CHAVEZ AND LYONS STREET **N/A**
LOS ANGELES, CA 90012

Relative:
Lower

Actual:
289 ft.

Manufactured Gas Plants:

The former Aliso Street manufactured Gas Plant covered approximately 52 acres in downtown Los Angeles. The site is being investigated as 5 sectors and an overall groundwater unit. The "C" sector consists of 16.4 acres south of the Hollywood (101) Freeeway, bisected by Center Street and bounded by Commercial, Ducommun and Jackson Streets. Sector C is further subdivided into Blocks G, K, L, N, O, Q, and R. Contaminants suspected include petroleum hydrocarbons, volatile organic compounds, cyanide,polycyclic aromatic hydrocarbons and heavy metals

Count: 20 records. ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
SIGNAL HILL	1000133322	W-H TANK LINES INC	2202 E SPRING ST	90755	FINDS,HWP,HAZNET,RCRA-NLR,SLI
					REGION 2
LOS ANGELES	1000350193	LA PUMPING PLANT #92	900 W SOUTHERLAND AVE	90012	CERCLIS,FINDS,RCRA-SQG
MONTECITO HEIGHTS	1000589964	EMPIRE CHEMICAL COMPANY, INC.	715 LAMAR ST	90031	FID,LUST SAN MATEO,SWEEPS UST
LOS ANGELES	1000985012	CALTRANS	RTE 134 BETWEEN 0.5 MI E OF	90012	RCRA-SQG,FINDS
LOS ANGELES	1003878455	BARON MFG	241 AVE 26	90031	CERCLIS-NFRAP
LOS ANGELES	1007447285	BUENA VISTA PUMP STATION	PARK ROW DRIVE	90012	RCRA-LQG
LOS ANGELES	1012171608	CROWN COACH SITE	SANTA FE AVENUE AND WASHINGTON		BROWNFIELDS
LOS ANGELES	1012171636	IMANI FE	10304-10727 CENTRAL AVENUE & 1		BROWNFIELDS
LOS ANGELES	1014915225	MAIN STREET ABANDONED DRUMS	SOUTH MAIN AND 60TH STREET		CERCLIS
LOS ANGELES	2001567782		1988 COAL WATER CANYON	0	ERNS
WILMINGTON	2011979369		100 WEST WATER ST		ERNS
LOS ANGELES	8721873		HYPERION WAST WATER PLANT		ERNS
LOS ANGELES	A100344594		1630 N MAIN ST., BLDG. NO. 10	90012	AST
MONTECITO HEIGHTS	S101296867	ROSS SWISS DAIRIES	1739 ALBION ST	90031	LUST SAN MATEO
LOS ANGELES	S101297115	TUNEUP MASTERS SHOP #67	2131 MAIN	90012	HIST CORTESE
LOS ANGELES	S101584278	COMMERCIAL INDUSTRIAL	352 AVENUE 21	90031	FID,SWEEPS UST
LOS ANGELES	S101661395	METRO RAIL PASADENA BLUE LINE	BETWEEN AVENUE 33 & FRENCH AVE	90065	ENVIROSTOR
MONTECITO HEIGHTS	S102433578	MOBIL #11-H41 (FORMER)	774 BROADWAY N	90012	LUST SAN MATEO
MONTECITO HEIGHTS	S102439208	TRANSIT MIXED CONCRETE COMPANY	625 LAMAR ST	90031	LUST SAN MATEO
LOS ANGELES	S108741337	LA DEPT OF WATER AND POWER BUENA V	PARK ROW DR	90012	HAZNET

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

Number of Days to Update: Provides confirmation that EDR is reporting records that have been updated within 90 days from the date the government agency made the information available to the public.

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

NPL: National Priority List

National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 05/08/2012
Date Data Arrived at EDR: 05/10/2012
Date Made Active in Reports: 05/15/2012
Number of Days to Update: 5

Source: EPA
Telephone: N/A
Last EDR Contact: 05/10/2012
Next Scheduled EDR Contact: 07/23/2012
Data Release Frequency: Quarterly

NPL Site Boundaries

Sources:

EPA's Environmental Photographic Interpretation Center (EPIC)
Telephone: 202-564-7333

EPA Region 1
Telephone 617-918-1143

EPA Region 6
Telephone: 214-655-6659

EPA Region 3
Telephone 215-814-5418

EPA Region 7
Telephone: 913-551-7247

EPA Region 4
Telephone 404-562-8033

EPA Region 8
Telephone: 303-312-6774

EPA Region 5
Telephone 312-886-6686

EPA Region 9
Telephone: 415-947-4246

EPA Region 10
Telephone 206-553-8665

Proposed NPL: Proposed National Priority List Sites

A site that has been proposed for listing on the National Priorities List through the issuance of a proposed rule in the Federal Register. EPA then accepts public comments on the site, responds to the comments, and places on the NPL those sites that continue to meet the requirements for listing.

Date of Government Version: 03/30/2012
Date Data Arrived at EDR: 04/05/2012
Date Made Active in Reports: 05/15/2012
Number of Days to Update: 40

Source: EPA
Telephone: N/A
Last EDR Contact: 04/05/2012
Next Scheduled EDR Contact: 07/23/2012
Data Release Frequency: Quarterly

NPL LIENS: Federal Superfund Liens

Federal Superfund Liens. Under the authority granted the USEPA by CERCLA of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner received notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

Date of Government Version: 10/15/1991
Date Data Arrived at EDR: 02/02/1994
Date Made Active in Reports: 03/30/1994
Number of Days to Update: 56

Source: EPA
Telephone: 202-564-4267
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Federal Delisted NPL site list

DELISTED NPL: National Priority List Deletions

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 03/30/2012
Date Data Arrived at EDR: 04/05/2012
Date Made Active in Reports: 05/15/2012
Number of Days to Update: 40

Source: EPA
Telephone: N/A
Last EDR Contact: 04/05/2012
Next Scheduled EDR Contact: 07/23/2012
Data Release Frequency: Quarterly

Federal CERCLIS list

CERCLIS: Comprehensive Environmental Response, Compensation, and Liability Information System

CERCLIS contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). CERCLIS contains sites which are either proposed to or on the National Priorities List (NPL) and sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 12/27/2011
Date Data Arrived at EDR: 02/27/2012
Date Made Active in Reports: 03/12/2012
Number of Days to Update: 14

Source: EPA
Telephone: 703-412-9810
Last EDR Contact: 05/29/2012
Next Scheduled EDR Contact: 09/10/2012
Data Release Frequency: Quarterly

FEDERAL FACILITY: Federal Facility Site Information listing

A listing of National Priority List (NPL) and Base Realignment and Closure (BRAC) sites found in the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) Database where EPA Federal Facilities Restoration and Reuse Office is involved in cleanup activities.

Date of Government Version: 12/10/2010
Date Data Arrived at EDR: 01/11/2011
Date Made Active in Reports: 02/16/2011
Number of Days to Update: 36

Source: Environmental Protection Agency
Telephone: 703-603-8704
Last EDR Contact: 04/12/2012
Next Scheduled EDR Contact: 07/23/2012
Data Release Frequency: Varies

Federal CERCLIS NFRAP site List

CERCLIS-NFRAP: CERCLIS No Further Remedial Action Planned

Archived sites are sites that have been removed and archived from the inventory of CERCLIS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list this site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. This decision does not necessarily mean that there is no hazard associated with a given site; it only means that, based upon available information, the location is not judged to be a potential NPL site.

Date of Government Version: 12/28/2011
Date Data Arrived at EDR: 02/27/2012
Date Made Active in Reports: 03/12/2012
Number of Days to Update: 14

Source: EPA
Telephone: 703-412-9810
Last EDR Contact: 05/29/2012
Next Scheduled EDR Contact: 09/10/2012
Data Release Frequency: Quarterly

Federal RCRA CORRACTS facilities list

CORRACTS: Corrective Action Report

CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 08/19/2011
Date Data Arrived at EDR: 08/31/2011
Date Made Active in Reports: 01/10/2012
Number of Days to Update: 132

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 05/15/2012
Next Scheduled EDR Contact: 08/27/2012
Data Release Frequency: Quarterly

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF: RCRA - Treatment, Storage and Disposal

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

Date of Government Version: 03/15/2012
Date Data Arrived at EDR: 04/04/2012
Date Made Active in Reports: 05/15/2012
Number of Days to Update: 41

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 04/04/2012
Next Scheduled EDR Contact: 07/16/2012
Data Release Frequency: Quarterly

Federal RCRA generators list

RCRA-LQG: RCRA - Large Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month.

Date of Government Version: 03/15/2012
Date Data Arrived at EDR: 04/04/2012
Date Made Active in Reports: 05/15/2012
Number of Days to Update: 41

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 04/04/2012
Next Scheduled EDR Contact: 07/16/2012
Data Release Frequency: Quarterly

RCRA-SQG: RCRA - Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

Date of Government Version: 03/15/2012
Date Data Arrived at EDR: 04/04/2012
Date Made Active in Reports: 05/15/2012
Number of Days to Update: 41

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 04/04/2012
Next Scheduled EDR Contact: 07/16/2012
Data Release Frequency: Quarterly

RCRA-CESQG: RCRA - Conditionally Exempt Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month.

Date of Government Version: 03/15/2012
Date Data Arrived at EDR: 04/04/2012
Date Made Active in Reports: 05/15/2012
Number of Days to Update: 41

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 04/04/2012
Next Scheduled EDR Contact: 07/16/2012
Data Release Frequency: Varies

Federal institutional controls / engineering controls registries

US ENG CONTROLS: Engineering Controls Sites List

A listing of sites with engineering controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.

Date of Government Version: 12/30/2011
Date Data Arrived at EDR: 12/30/2011
Date Made Active in Reports: 01/10/2012
Number of Days to Update: 11

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 06/11/2012
Next Scheduled EDR Contact: 09/24/2012
Data Release Frequency: Varies

US INST CONTROL: Sites with Institutional Controls

A listing of sites with institutional controls in place. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls.

Date of Government Version: 12/30/2011
Date Data Arrived at EDR: 12/30/2011
Date Made Active in Reports: 01/10/2012
Number of Days to Update: 11

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 06/11/2012
Next Scheduled EDR Contact: 09/24/2012
Data Release Frequency: Varies

Federal ERNS list

ERNS: Emergency Response Notification System

Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 04/02/2012
Date Data Arrived at EDR: 04/03/2012
Date Made Active in Reports: 06/14/2012
Number of Days to Update: 72

Source: National Response Center, United States Coast Guard
Telephone: 202-267-2180
Last EDR Contact: 04/03/2012
Next Scheduled EDR Contact: 07/16/2012
Data Release Frequency: Annually

State- and tribal - equivalent NPL

RESPONSE: State Response Sites

Identifies confirmed release sites where DTSC is involved in remediation, either in a lead or oversight capacity. These confirmed release sites are generally high-priority and high potential risk.

Date of Government Version: 05/07/2012
Date Data Arrived at EDR: 05/08/2012
Date Made Active in Reports: 05/23/2012
Number of Days to Update: 15

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 06/14/2012
Next Scheduled EDR Contact: 08/20/2012
Data Release Frequency: Quarterly

State- and tribal - equivalent CERCLIS

ENVIROSTOR: EnviroStor Database

The Department of Toxic Substances Control's (DTSC's) Site Mitigation and Brownfields Reuse Program's (SMBRP's) EnviroStor database identifes sites that have known contamination or sites for which there may be reasons to investigate further. The database includes the following site types: Federal Superfund sites (National Priorities List (NPL)); State Response, including Military Facilities and State Superfund; Voluntary Cleanup; and School sites. EnviroStor provides similar information to the information that was available in CalSites, and provides additional site information, including, but not limited to, identification of formerly-contaminated properties that have been released for reuse, properties where environmental deed restrictions have been recorded to prevent inappropriate land uses, and risk characterization information that is used to assess potential impacts to public health and the environment at contaminated sites.

Date of Government Version: 05/07/2012
Date Data Arrived at EDR: 05/08/2012
Date Made Active in Reports: 05/23/2012
Number of Days to Update: 15

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 06/14/2012
Next Scheduled EDR Contact: 08/20/2012
Data Release Frequency: Quarterly

State and tribal landfill and/or solid waste disposal site lists

SWF/LF (SWIS): Solid Waste Information System

Active, Closed and Inactive Landfills. SWF/LF records typically contain an inve ntory of solid waste disposal facilities or landfills. These may be active or i nactive facilities or open dumps that failed to meet RCRA Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 02/20/2012
Date Data Arrived at EDR: 02/20/2012
Date Made Active in Reports: 03/29/2012
Number of Days to Update: 38

Source: Department of Resources Recycling and Recovery
Telephone: 916-341-6320
Last EDR Contact: 05/22/2012
Next Scheduled EDR Contact: 09/03/2012
Data Release Frequency: Quarterly

State and tribal leaking storage tank lists

LUST: Geotracker's Leaking Underground Fuel Tank Report

Leaking Underground Storage Tank Incident Reports. LUST records contain an inventory of reported leaking underground storage tank incidents. Not all states maintain these records, and the information stored varies by state. For more information on a particular leaking underground storage tank sites, please contact the appropriate regulatory agency.

Date of Government Version: 05/09/2012
Date Data Arrived at EDR: 05/10/2012
Date Made Active in Reports: 05/25/2012
Number of Days to Update: 15

Source: State Water Resources Control Board
Telephone: see region list
Last EDR Contact: 06/14/2012
Next Scheduled EDR Contact: 10/01/2012
Data Release Frequency: Quarterly

LUST REG 2: Fuel Leak List

Leaking Underground Storage Tank locations. Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, Sonoma counties.

Date of Government Version: 09/30/2004
Date Data Arrived at EDR: 10/20/2004
Date Made Active in Reports: 11/19/2004
Number of Days to Update: 30

Source: California Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-622-2433
Last EDR Contact: 09/19/2011
Next Scheduled EDR Contact: 01/02/2012
Data Release Frequency: Quarterly

LUST REG 6V: Leaking Underground Storage Tank Case Listing

Leaking Underground Storage Tank locations. Inyo, Kern, Los Angeles, Mono, San Bernardino counties.

Date of Government Version: 06/07/2005
Date Data Arrived at EDR: 06/07/2005
Date Made Active in Reports: 06/29/2005
Number of Days to Update: 22

Source: California Regional Water Quality Control Board Victorville Branch Office (6)
Telephone: 760-241-7365
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

LUST REG 1: Active Toxic Site Investigation

Del Norte, Humboldt, Lake, Mendocino, Modoc, Siskiyou, Sonoma, Trinity counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/01/2001
Date Data Arrived at EDR: 02/28/2001
Date Made Active in Reports: 03/29/2001
Number of Days to Update: 29

Source: California Regional Water Quality Control Board North Coast (1)
Telephone: 707-570-3769
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

LUST REG 8: Leaking Underground Storage Tanks
California Regional Water Quality Control Board Santa Ana Region (8). For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/14/2005
Date Data Arrived at EDR: 02/15/2005
Date Made Active in Reports: 03/28/2005
Number of Days to Update: 41

Source: California Regional Water Quality Control Board Santa Ana Region (8)
Telephone: 909-782-4496
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: Varies

LUST REG 7: Leaking Underground Storage Tank Case Listing
Leaking Underground Storage Tank locations. Imperial, Riverside, San Diego, Santa Barbara counties.

Date of Government Version: 02/26/2004
Date Data Arrived at EDR: 02/26/2004
Date Made Active in Reports: 03/24/2004
Number of Days to Update: 27

Source: California Regional Water Quality Control Board Colorado River Basin Region (7)
Telephone: 760-776-8943
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

LUST REG 5: Leaking Underground Storage Tank Database
Leaking Underground Storage Tank locations. Alameda, Alpine, Amador, Butte, Colusa, Contra Costa, Calveras, El Dorado, Fresno, Glenn, Kern, Kings, Lake, Lassen, Madera, Mariposa, Merced, Modoc, Napa, Nevada, Placer, Plumas, Sacramento, San Joaquin, Shasta, Solano, Stanislaus, Sutter, Tehama, Tulare, Tuolumne, Yolo, Yuba counties.

Date of Government Version: 07/01/2008
Date Data Arrived at EDR: 07/22/2008
Date Made Active in Reports: 07/31/2008
Number of Days to Update: 9

Source: California Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-464-4834
Last EDR Contact: 07/01/2011
Next Scheduled EDR Contact: 10/17/2011
Data Release Frequency: Quarterly

LUST REG 4: Underground Storage Tank Leak List
Los Angeles, Ventura counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/07/2004
Date Data Arrived at EDR: 09/07/2004
Date Made Active in Reports: 10/12/2004
Number of Days to Update: 35

Source: California Regional Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6710
Last EDR Contact: 09/06/2011
Next Scheduled EDR Contact: 12/19/2011
Data Release Frequency: No Update Planned

LUST REG 6L: Leaking Underground Storage Tank Case Listing
For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/09/2003
Date Data Arrived at EDR: 09/10/2003
Date Made Active in Reports: 10/07/2003
Number of Days to Update: 27

Source: California Regional Water Quality Control Board Lahontan Region (6)
Telephone: 530-542-5572
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

LUST REG 3: Leaking Underground Storage Tank Database
Leaking Underground Storage Tank locations. Monterey, San Benito, San Luis Obispo, Santa Barbara, Santa Cruz counties.

Date of Government Version: 05/19/2003
Date Data Arrived at EDR: 05/19/2003
Date Made Active in Reports: 06/02/2003
Number of Days to Update: 14

Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-542-4786
Last EDR Contact: 07/18/2011
Next Scheduled EDR Contact: 10/31/2011
Data Release Frequency: No Update Planned

LUST REG 9: Leaking Underground Storage Tank Report
Orange, Riverside, San Diego counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 03/01/2001
Date Data Arrived at EDR: 04/23/2001
Date Made Active in Reports: 05/21/2001
Number of Days to Update: 28

Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-637-5595
Last EDR Contact: 09/26/2011
Next Scheduled EDR Contact: 01/09/2012
Data Release Frequency: No Update Planned

SLIC: Statewide SLIC Cases

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 05/09/2012
Date Data Arrived at EDR: 05/10/2012
Date Made Active in Reports: 05/25/2012
Number of Days to Update: 15

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 06/14/2012
Next Scheduled EDR Contact: 10/01/2012
Data Release Frequency: Varies

SLIC REG 1: Active Toxic Site Investigations

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/03/2003
Date Data Arrived at EDR: 04/07/2003
Date Made Active in Reports: 04/25/2003
Number of Days to Update: 18

Source: California Regional Water Quality Control Board, North Coast Region (1)
Telephone: 707-576-2220
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

SLIC REG 2: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/30/2004
Date Data Arrived at EDR: 10/20/2004
Date Made Active in Reports: 11/19/2004
Number of Days to Update: 30

Source: Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-286-0457
Last EDR Contact: 09/19/2011
Next Scheduled EDR Contact: 01/02/2012
Data Release Frequency: Quarterly

SLIC REG 3: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 05/18/2006
Date Data Arrived at EDR: 05/18/2006
Date Made Active in Reports: 06/15/2006
Number of Days to Update: 28

Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-549-3147
Last EDR Contact: 07/18/2011
Next Scheduled EDR Contact: 10/31/2011
Data Release Frequency: Semi-Annually

SLIC REG 4: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 11/17/2004
Date Data Arrived at EDR: 11/18/2004
Date Made Active in Reports: 01/04/2005
Number of Days to Update: 47

Source: Region Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6600
Last EDR Contact: 07/01/2011
Next Scheduled EDR Contact: 10/17/2011
Data Release Frequency: Varies

SLIC REG 5: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/01/2005
Date Data Arrived at EDR: 04/05/2005
Date Made Active in Reports: 04/21/2005
Number of Days to Update: 16

Source: Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-464-3291
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: Semi-Annually

SLIC REG 6V: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 05/24/2005
Date Data Arrived at EDR: 05/25/2005
Date Made Active in Reports: 06/16/2005
Number of Days to Update: 22

Source: Regional Water Quality Control Board, Victorville Branch
Telephone: 619-241-6583
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: Semi-Annually

SLIC REG 6L: SLIC Sites
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/07/2004
Date Data Arrived at EDR: 09/07/2004
Date Made Active in Reports: 10/12/2004
Number of Days to Update: 35

Source: California Regional Water Quality Control Board, Lahontan Region
Telephone: 530-542-5574
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

SLIC REG 7: SLIC List
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 11/24/2004
Date Data Arrived at EDR: 11/29/2004
Date Made Active in Reports: 01/04/2005
Number of Days to Update: 36

Source: California Regional Quality Control Board, Colorado River Basin Region
Telephone: 760-346-7491
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

SLIC REG 8: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/03/2008
Date Data Arrived at EDR: 04/03/2008
Date Made Active in Reports: 04/14/2008
Number of Days to Update: 11

Source: California Region Water Quality Control Board Santa Ana Region (8)
Telephone: 951-782-3298
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: Semi-Annually

SLIC REG 9: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/10/2007
Date Data Arrived at EDR: 09/11/2007
Date Made Active in Reports: 09/28/2007
Number of Days to Update: 17

Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-467-2980
Last EDR Contact: 08/08/2011
Next Scheduled EDR Contact: 11/21/2011
Data Release Frequency: Annually

INDIAN LUST R8: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Colorado, Montana, North Dakota, South Dakota, Utah and Wyoming.

Date of Government Version: 08/18/2011
Date Data Arrived at EDR: 08/19/2011
Date Made Active in Reports: 09/13/2011
Number of Days to Update: 25

Source: EPA Region 8
Telephone: 303-312-6271
Last EDR Contact: 04/30/2012
Next Scheduled EDR Contact: 08/13/2012
Data Release Frequency: Quarterly

INDIAN LUST R7: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Iowa, Kansas, and Nebraska

Date of Government Version: 02/07/2012
Date Data Arrived at EDR: 02/17/2012
Date Made Active in Reports: 05/15/2012
Number of Days to Update: 88

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 04/30/2012
Next Scheduled EDR Contact: 08/13/2012
Data Release Frequency: Varies

INDIAN LUST R6: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in New Mexico and Oklahoma.

Date of Government Version: 09/12/2011
Date Data Arrived at EDR: 09/13/2011
Date Made Active in Reports: 11/11/2011
Number of Days to Update: 59

Source: EPA Region 6
Telephone: 214-665-6597
Last EDR Contact: 04/23/2012
Next Scheduled EDR Contact: 08/13/2012
Data Release Frequency: Varies

INDIAN LUST R1: Leaking Underground Storage Tanks on Indian Land
A listing of leaking underground storage tank locations on Indian Land.

Date of Government Version: 10/01/2011
Date Data Arrived at EDR: 11/01/2011
Date Made Active in Reports: 11/11/2011
Number of Days to Update: 10

Source: EPA Region 1
Telephone: 617-918-1313
Last EDR Contact: 05/01/2012
Next Scheduled EDR Contact: 08/13/2012
Data Release Frequency: Varies

INDIAN LUST R10: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

Date of Government Version: 02/01/2012
Date Data Arrived at EDR: 02/02/2012
Date Made Active in Reports: 05/15/2012
Number of Days to Update: 103

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 04/30/2012
Next Scheduled EDR Contact: 08/13/2012
Data Release Frequency: Quarterly

INDIAN LUST R9: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Arizona, California, New Mexico and Nevada

Date of Government Version: 02/14/2012
Date Data Arrived at EDR: 02/17/2012
Date Made Active in Reports: 05/15/2012
Number of Days to Update: 88

Source: Environmental Protection Agency
Telephone: 415-972-3372
Last EDR Contact: 04/30/2012
Next Scheduled EDR Contact: 08/13/2012
Data Release Frequency: Quarterly

INDIAN LUST R4: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Florida, Mississippi and North Carolina.

Date of Government Version: 12/14/2011
Date Data Arrived at EDR: 12/15/2011
Date Made Active in Reports: 01/10/2012
Number of Days to Update: 26

Source: EPA Region 4
Telephone: 404-562-8677
Last EDR Contact: 04/30/2012
Next Scheduled EDR Contact: 08/13/2012
Data Release Frequency: Semi-Annually

State and tribal registered storage tank lists

UST: Active UST Facilities
Active UST facilities gathered from the local regulatory agencies

Date of Government Version: 05/09/2012
Date Data Arrived at EDR: 05/10/2012
Date Made Active in Reports: 05/24/2012
Number of Days to Update: 14
Source: SWRCB
Telephone: 916-341-5851
Last EDR Contact: 06/14/2012
Next Scheduled EDR Contact: 10/01/2012
Data Release Frequency: Semi-Annually

AST: Aboveground Petroleum Storage Tank Facilities
Registered Aboveground Storage Tanks.

Date of Government Version: 08/01/2009
Date Data Arrived at EDR: 09/10/2009
Date Made Active in Reports: 10/01/2009
Number of Days to Update: 21
Source: State Water Resources Control Board
Telephone: 916-327-5092
Last EDR Contact: 01/23/2012
Next Scheduled EDR Contact: 04/23/2012
Data Release Frequency: Quarterly

INDIAN UST R4: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 4 (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee and Tribal Nations)

Date of Government Version: 12/14/2011
Date Data Arrived at EDR: 12/15/2011
Date Made Active in Reports: 01/10/2012
Number of Days to Update: 26
Source: EPA Region 4
Telephone: 404-562-9424
Last EDR Contact: 04/30/2012
Next Scheduled EDR Contact: 08/13/2012
Data Release Frequency: Semi-Annually

INDIAN UST R1: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 1 (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont and ten Tribal Nations).

Date of Government Version: 10/01/2011
Date Data Arrived at EDR: 11/01/2011
Date Made Active in Reports: 11/11/2011
Number of Days to Update: 10
Source: EPA, Region 1
Telephone: 617-918-1313
Last EDR Contact: 05/01/2012
Next Scheduled EDR Contact: 08/13/2012
Data Release Frequency: Varies

INDIAN UST R10: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 10 (Alaska, Idaho, Oregon, Washington, and Tribal Nations).

Date of Government Version: 02/01/2012
Date Data Arrived at EDR: 02/02/2012
Date Made Active in Reports: 05/15/2012
Number of Days to Update: 103
Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 04/30/2012
Next Scheduled EDR Contact: 08/13/2012
Data Release Frequency: Quarterly

INDIAN UST R7: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 7 (Iowa, Kansas, Missouri, Nebraska, and 9 Tribal Nations).

Date of Government Version: 02/07/2012
Date Data Arrived at EDR: 02/17/2012
Date Made Active in Reports: 05/15/2012
Number of Days to Update: 88
Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 04/30/2012
Next Scheduled EDR Contact: 08/13/2012
Data Release Frequency: Varies

INDIAN UST R6: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 6 (Louisiana, Arkansas, Oklahoma, New Mexico, Texas and 65 Tribes).

Date of Government Version: 05/10/2011
Date Data Arrived at EDR: 05/11/2011
Date Made Active in Reports: 06/14/2011
Number of Days to Update: 34

Source: EPA Region 6
Telephone: 214-665-7591
Last EDR Contact: 04/23/2012
Next Scheduled EDR Contact: 08/13/2012
Data Release Frequency: Semi-Annually

INDIAN UST R5: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 5 (Michigan, Minnesota and Wisconsin and Tribal Nations).

Date of Government Version: 02/28/2012
Date Data Arrived at EDR: 02/29/2012
Date Made Active in Reports: 05/15/2012
Number of Days to Update: 76

Source: EPA Region 5
Telephone: 312-886-6136
Last EDR Contact: 04/30/2012
Next Scheduled EDR Contact: 08/13/2012
Data Release Frequency: Varies

INDIAN UST R9: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 9 (Arizona, California, Hawaii, Nevada, the Pacific Islands, and Tribal Nations).

Date of Government Version: 11/28/2011
Date Data Arrived at EDR: 11/29/2011
Date Made Active in Reports: 01/10/2012
Number of Days to Update: 42

Source: EPA Region 9
Telephone: 415-972-3368
Last EDR Contact: 04/30/2012
Next Scheduled EDR Contact: 08/13/2012
Data Release Frequency: Quarterly

INDIAN UST R8: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 8 (Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming and 27 Tribal Nations).

Date of Government Version: 08/18/2011
Date Data Arrived at EDR: 08/19/2011
Date Made Active in Reports: 09/13/2011
Number of Days to Update: 25

Source: EPA Region 8
Telephone: 303-312-6137
Last EDR Contact: 04/30/2012
Next Scheduled EDR Contact: 08/13/2012
Data Release Frequency: Quarterly

FEMA UST: Underground Storage Tank Listing

A listing of all FEMA owned underground storage tanks.

Date of Government Version: 01/01/2010
Date Data Arrived at EDR: 02/16/2010
Date Made Active in Reports: 04/12/2010
Number of Days to Update: 55

Source: FEMA
Telephone: 202-646-5797
Last EDR Contact: 04/10/2012
Next Scheduled EDR Contact: 07/30/2012
Data Release Frequency: Varies

State and tribal voluntary cleanup sites

INDIAN VCP R7: Voluntary Cleanup Priority Lisitng

A listing of voluntary cleanup priority sites located on Indian Land located in Region 7.

Date of Government Version: 03/20/2008
Date Data Arrived at EDR: 04/22/2008
Date Made Active in Reports: 05/19/2008
Number of Days to Update: 27

Source: EPA, Region 7
Telephone: 913-551-7365
Last EDR Contact: 04/20/2009
Next Scheduled EDR Contact: 07/20/2009
Data Release Frequency: Varies

INDIAN VCP R1: Voluntary Cleanup Priority Listing
A listing of voluntary cleanup priority sites located on Indian Land located in Region 1.

Date of Government Version: 02/17/2012
Date Data Arrived at EDR: 04/03/2012
Date Made Active in Reports: 05/15/2012
Number of Days to Update: 42

Source: EPA, Region 1
Telephone: 617-918-1102
Last EDR Contact: 04/03/2012
Next Scheduled EDR Contact: 07/16/2012
Data Release Frequency: Varies

VCP: Voluntary Cleanup Program Properties
Contains low threat level properties with either confirmed or unconfirmed releases and the project proponents have request that DTSC oversee investigation and/or cleanup activities and have agreed to provide coverage for DTSC's costs.

Date of Government Version: 05/07/2012
Date Data Arrived at EDR: 05/08/2012
Date Made Active in Reports: 05/23/2012
Number of Days to Update: 15

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 06/14/2012
Next Scheduled EDR Contact: 08/20/2012
Data Release Frequency: Quarterly

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS: A Listing of Brownfields Sites
Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties takes development pressures off of undeveloped, open land, and both improves and protects the environment. Assessment, Cleanup and Redevelopment Exchange System (ACRES) stores information reported by EPA Brownfields grant recipients on brownfields properties assessed or cleaned up with grant funding as well as information on Targeted Brownfields Assessments performed by EPA Regions. A listing of ACRES Brownfield sites is obtained from Cleanups in My Community. Cleanups in My Community provides information on Brownfields properties for which information is reported back to EPA, as well as areas served by Brownfields grant programs.

Date of Government Version: 06/27/2011
Date Data Arrived at EDR: 06/27/2011
Date Made Active in Reports: 09/13/2011
Number of Days to Update: 78

Source: Environmental Protection Agency
Telephone: 202-566-2777
Last EDR Contact: 04/03/2012
Next Scheduled EDR Contact: 07/09/2012
Data Release Frequency: Semi-Annually

Local Lists of Landfill / Solid Waste Disposal Sites

DEBRIS REGION 9: Torres Martinez Reservation Illegal Dump Site Locations
A listing of illegal dump sites location on the Torres Martinez Indian Reservation located in eastern Riverside County and northern Imperial County, California.

Date of Government Version: 01/12/2009
Date Data Arrived at EDR: 05/07/2009
Date Made Active in Reports: 09/21/2009
Number of Days to Update: 137

Source: EPA, Region 9
Telephone: 415-947-4219
Last EDR Contact: 03/26/2012
Next Scheduled EDR Contact: 07/09/2012
Data Release Frequency: No Update Planned

ODI: Open Dump Inventory
An open dump is defined as a disposal facility that does not comply with one or more of the Part 257 or Part 258 Subtitle D Criteria.

Date of Government Version: 06/30/1985
Date Data Arrived at EDR: 08/09/2004
Date Made Active in Reports: 09/17/2004
Number of Days to Update: 39

Source: Environmental Protection Agency
Telephone: 800-424-9346
Last EDR Contact: 06/09/2004
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

WMUDS/SWAT: Waste Management Unit Database

Waste Management Unit Database System. WMUDS is used by the State Water Resources Control Board staff and the Regional Water Quality Control Boards for program tracking and inventory of waste management units. WMUDS is composed of the following databases: Facility Information, Scheduled Inspections Information, Waste Management Unit Information, SWAT Program Information, SWAT Report Summary Information, SWAT Report Summary Data, Chapter 15 (formerly Subchapter 15) Information, Chapter 15 Monitoring Parameters, TPCA Program Information, RCRA Program Information, Closure Information, and Interested Parties Information.

Date of Government Version: 04/01/2000
Date Data Arrived at EDR: 04/10/2000
Date Made Active in Reports: 05/10/2000
Number of Days to Update: 30

Source: State Water Resources Control Board
Telephone: 916-227-4448
Last EDR Contact: 05/15/2012
Next Scheduled EDR Contact: 08/27/2012
Data Release Frequency: No Update Planned

SWRCY: Recycler Database

A listing of recycling facilities in California.

Date of Government Version: 03/12/2012
Date Data Arrived at EDR: 03/21/2012
Date Made Active in Reports: 05/08/2012
Number of Days to Update: 48

Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 06/14/2012
Next Scheduled EDR Contact: 10/01/2012
Data Release Frequency: Quarterly

HAULERS: Registered Waste Tire Haulers Listing

A listing of registered waste tire haulers.

Date of Government Version: 05/10/2012
Date Data Arrived at EDR: 05/10/2012
Date Made Active in Reports: 05/25/2012
Number of Days to Update: 15

Source: Integrated Waste Management Board
Telephone: 916-341-6422
Last EDR Contact: 06/11/2012
Next Scheduled EDR Contact: 09/03/2012
Data Release Frequency: Varies

INDIAN ODI: Report on the Status of Open Dumps on Indian Lands

Location of open dumps on Indian land.

Date of Government Version: 12/31/1998
Date Data Arrived at EDR: 12/03/2007
Date Made Active in Reports: 01/24/2008
Number of Days to Update: 52

Source: Environmental Protection Agency
Telephone: 703-308-8245
Last EDR Contact: 05/07/2012
Next Scheduled EDR Contact: 08/20/2012
Data Release Frequency: Varies

Local Lists of Hazardous waste / Contaminated Sites

US CDL: Clandestine Drug Labs

A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 02/02/2012
Date Data Arrived at EDR: 03/13/2012
Date Made Active in Reports: 06/14/2012
Number of Days to Update: 93

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 06/04/2012
Next Scheduled EDR Contact: 09/17/2012
Data Release Frequency: Quarterly

HIST CAL-SITES: Calsites Database

The Calsites database contains potential or confirmed hazardous substance release properties. In 1996, California EPA reevaluated and significantly reduced the number of sites in the Calsites database. No longer updated by the state agency. It has been replaced by ENVIROSTOR.

Date of Government Version: 08/08/2005
Date Data Arrived at EDR: 08/03/2006
Date Made Active in Reports: 08/24/2006
Number of Days to Update: 21

Source: Department of Toxic Substance Control
Telephone: 916-323-3400
Last EDR Contact: 02/23/2009
Next Scheduled EDR Contact: 05/25/2009
Data Release Frequency: No Update Planned

SCH: School Property Evaluation Program

This category contains proposed and existing school sites that are being evaluated by DTSC for possible hazardous materials contamination. In some cases, these properties may be listed in the CalSites category depending on the level of threat to public health and safety or the environment they pose.

Date of Government Version: 05/07/2012
Date Data Arrived at EDR: 05/08/2012
Date Made Active in Reports: 05/23/2012
Number of Days to Update: 15

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 06/14/2012
Next Scheduled EDR Contact: 08/20/2012
Data Release Frequency: Quarterly

TOXIC PITS: Toxic Pits Cleanup Act Sites

Toxic PITS Cleanup Act Sites. TOXIC PITS identifies sites suspected of containing hazardous substances where cleanup has not yet been completed.

Date of Government Version: 07/01/1995
Date Data Arrived at EDR: 08/30/1995
Date Made Active in Reports: 09/26/1995
Number of Days to Update: 27

Source: State Water Resources Control Board
Telephone: 916-227-4364
Last EDR Contact: 01/26/2009
Next Scheduled EDR Contact: 04/27/2009
Data Release Frequency: No Update Planned

CDL: Clandestine Drug Labs

A listing of drug lab locations. Listing of a location in this database does not indicate that any illegal drug lab materials were or were not present there, and does not constitute a determination that the location either requires or does not require additional cleanup work.

Date of Government Version: 12/31/2011
Date Data Arrived at EDR: 02/14/2012
Date Made Active in Reports: 02/21/2012
Number of Days to Update: 7

Source: Department of Toxic Substances Control
Telephone: 916-255-6504
Last EDR Contact: 04/02/2012
Next Scheduled EDR Contact: 07/16/2012
Data Release Frequency: Varies

US HIST CDL: National Clandestine Laboratory Register

A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 09/01/2007
Date Data Arrived at EDR: 11/19/2008
Date Made Active in Reports: 03/30/2009
Number of Days to Update: 131

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 03/23/2009
Next Scheduled EDR Contact: 06/22/2009
Data Release Frequency: No Update Planned

Local Lists of Registered Storage Tanks

CA FID UST: Facility Inventory Database

The Facility Inventory Database (FID) contains a historical listing of active and inactive underground storage tank locations from the State Water Resource Control Board. Refer to local/county source for current data.

Date of Government Version: 10/31/1994
Date Data Arrived at EDR: 09/05/1995
Date Made Active in Reports: 09/29/1995
Number of Days to Update: 24

Source: California Environmental Protection Agency
Telephone: 916-341-5851
Last EDR Contact: 12/28/1998
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

UST MENDOCINO: Mendocino County UST Database
A listing of underground storage tank locations in Mendocino County.

Date of Government Version: 09/23/2009
Date Data Arrived at EDR: 09/23/2009
Date Made Active in Reports: 10/01/2009
Number of Days to Update: 8
Source: Department of Public Health
Telephone: 707-463-4466
Last EDR Contact: 06/04/2012
Next Scheduled EDR Contact: 09/17/2012
Data Release Frequency: Annually

HIST UST: Hazardous Substance Storage Container Database
The Hazardous Substance Storage Container Database is a historical listing of UST sites. Refer to local/county source for current data.

Date of Government Version: 10/15/1990
Date Data Arrived at EDR: 01/25/1991
Date Made Active in Reports: 02/12/1991
Number of Days to Update: 18
Source: State Water Resources Control Board
Telephone: 916-341-5851
Last EDR Contact: 07/26/2001
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

SWEEPS UST: SWEEPS UST Listing
Statewide Environmental Evaluation and Planning System. This underground storage tank listing was updated and maintained by a company contacted by the SWRCB in the early 1990's. The listing is no longer updated or maintained. The local agency is the contact for more information on a site on the SWEEPS list.

Date of Government Version: 06/01/1994
Date Data Arrived at EDR: 07/07/2005
Date Made Active in Reports: 08/11/2005
Number of Days to Update: 35
Source: State Water Resources Control Board
Telephone: N/A
Last EDR Contact: 06/03/2005
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

Local Land Records

LIENS 2: CERCLA Lien Information
A Federal CERCLA ('Superfund') lien can exist by operation of law at any site or property at which EPA has spent Superfund monies. These monies are spent to investigate and address releases and threatened releases of contamination. CERCLIS provides information as to the identity of these sites and properties.

Date of Government Version: 02/16/2012
Date Data Arrived at EDR: 03/26/2012
Date Made Active in Reports: 06/14/2012
Number of Days to Update: 80
Source: Environmental Protection Agency
Telephone: 202-564-6023
Last EDR Contact: 04/30/2012
Next Scheduled EDR Contact: 08/13/2012
Data Release Frequency: Varies

LUCIS: Land Use Control Information System
LUCIS contains records of land use control information pertaining to the former Navy Base Realignment and Closure properties.

Date of Government Version: 12/09/2005
Date Data Arrived at EDR: 12/11/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 31
Source: Department of the Navy
Telephone: 843-820-7326
Last EDR Contact: 05/21/2012
Next Scheduled EDR Contact: 09/03/2012
Data Release Frequency: Varies

LIENS: Environmental Liens Listing
A listing of property locations with environmental liens for California where DTSC is a lien holder.

Date of Government Version: 03/12/2012
Date Data Arrived at EDR: 03/13/2012
Date Made Active in Reports: 04/02/2012
Number of Days to Update: 20
Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 06/11/2012
Next Scheduled EDR Contact: 09/24/2012
Data Release Frequency: Varies

DEED: Deed Restriction Listing

Site Mitigation and Brownfields Reuse Program Facility Sites with Deed Restrictions & Hazardous Waste Management Program Facility Sites with Deed / Land Use Restriction. The DTSC Site Mitigation and Brownfields Reuse Program (SMBRP) list includes sites cleaned up under the program's oversight and generally does not include current or former hazardous waste facilities that required a hazardous waste facility permit. The list represents deed restrictions that are active. Some sites have multiple deed restrictions. The DTSC Hazardous Waste Management Program (HWMP) has developed a list of current or former hazardous waste facilities that have a recorded land use restriction at the local county recorder's office. The land use restrictions on this list were required by the DTSC HWMP as a result of the presence of hazardous substances that remain on site after the facility (or part of the facility) has been closed or cleaned up. The types of land use restriction include deed notice, deed restriction, or a land use restriction that binds current and future owners.

Date of Government Version: 03/12/2012
Date Data Arrived at EDR: 03/13/2012
Date Made Active in Reports: 04/02/2012
Number of Days to Update: 20

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 06/12/2012
Next Scheduled EDR Contact: 09/24/2012
Data Release Frequency: Semi-Annually

Records of Emergency Release Reports

HMIRS: Hazardous Materials Information Reporting System

Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 04/01/2012
Date Data Arrived at EDR: 04/03/2012
Date Made Active in Reports: 06/14/2012
Number of Days to Update: 72

Source: U.S. Department of Transportation
Telephone: 202-366-4555
Last EDR Contact: 04/03/2012
Next Scheduled EDR Contact: 07/16/2012
Data Release Frequency: Annually

CHMIRS: California Hazardous Material Incident Report System

California Hazardous Material Incident Reporting System. CHMIRS contains information on reported hazardous material incidents (accidental releases or spills).

Date of Government Version: 03/28/2012
Date Data Arrived at EDR: 05/01/2012
Date Made Active in Reports: 05/25/2012
Number of Days to Update: 24

Source: Office of Emergency Services
Telephone: 916-845-8400
Last EDR Contact: 05/01/2012
Next Scheduled EDR Contact: 08/13/2012
Data Release Frequency: Varies

LDS: Land Disposal Sites Listing

The Land Disposal program regulates of waste discharge to land for treatment, storage and disposal in waste management units.

Date of Government Version: 05/09/2012
Date Data Arrived at EDR: 05/10/2012
Date Made Active in Reports: 05/25/2012
Number of Days to Update: 15

Source: State Water Qualilty Control Board
Telephone: 866-480-1028
Last EDR Contact: 06/14/2012
Next Scheduled EDR Contact: 10/01/2012
Data Release Frequency: Quarterly

MCS: Military Cleanup Sites Listing

The State Water Resources Control Board and nine Regional Water Quality Control Boards partner with the Department of Defense (DoD) through the Defense and State Memorandum of Agreement (DSMOA) to oversee the investigation and remediation of water quality issues at military facilities.

Date of Government Version: 05/09/2012
Date Data Arrived at EDR: 05/10/2012
Date Made Active in Reports: 05/25/2012
Number of Days to Update: 15

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 06/14/2012
Next Scheduled EDR Contact: 10/01/2012
Data Release Frequency: Quarterly

Other Ascertainable Records

RCRA-NonGen: RCRA - Non Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

Date of Government Version: 03/15/2012
Date Data Arrived at EDR: 04/04/2012
Date Made Active in Reports: 05/15/2012
Number of Days to Update: 41

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 04/04/2012
Next Scheduled EDR Contact: 07/16/2012
Data Release Frequency: Varies

DOT OPS: Incident and Accident Data

Department of Transporation, Office of Pipeline Safety Incident and Accident data.

Date of Government Version: 07/29/2011
Date Data Arrived at EDR: 08/09/2011
Date Made Active in Reports: 11/11/2011
Number of Days to Update: 94

Source: Department of Transporation, Office of Pipeline Safety
Telephone: 202-366-4595
Last EDR Contact: 05/08/2012
Next Scheduled EDR Contact: 08/20/2012
Data Release Frequency: Varies

DOD: Department of Defense Sites

This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 11/10/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 62

Source: USGS
Telephone: 888-275-8747
Last EDR Contact: 04/16/2012
Next Scheduled EDR Contact: 07/30/2012
Data Release Frequency: Semi-Annually

FUDS: Formerly Used Defense Sites

The listing includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions.

Date of Government Version: 12/31/2009
Date Data Arrived at EDR: 08/12/2010
Date Made Active in Reports: 12/02/2010
Number of Days to Update: 112

Source: U.S. Army Corps of Engineers
Telephone: 202-528-4285
Last EDR Contact: 06/11/2012
Next Scheduled EDR Contact: 09/24/2012
Data Release Frequency: Varies

CONSENT: Superfund (CERCLA) Consent Decrees

Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: 12/01/2011
Date Data Arrived at EDR: 01/25/2012
Date Made Active in Reports: 03/01/2012
Number of Days to Update: 36

Source: Department of Justice, Consent Decree Library
Telephone: Varies
Last EDR Contact: 04/02/2012
Next Scheduled EDR Contact: 07/16/2012
Data Release Frequency: Varies

ROD: Records Of Decision

Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 02/27/2012
Date Data Arrived at EDR: 03/14/2012
Date Made Active in Reports: 06/14/2012
Number of Days to Update: 92

Source: EPA
Telephone: 703-416-0223
Last EDR Contact: 06/13/2012
Next Scheduled EDR Contact: 09/24/2012
Data Release Frequency: Annually

UMTRA: Uranium Mill Tailings Sites

Uranium ore was mined by private companies for federal government use in national defense programs. When the mills shut down, large piles of the sand-like material (mill tailings) remain after uranium has been extracted from the ore. Levels of human exposure to radioactive materials from the piles are low; however, in some cases tailings were used as construction materials before the potential health hazards of the tailings were recognized.

Date of Government Version: 09/14/2010
Date Data Arrived at EDR: 10/07/2011
Date Made Active in Reports: 03/01/2012
Number of Days to Update: 146

Source: Department of Energy
Telephone: 505-845-0011
Last EDR Contact: 05/29/2012
Next Scheduled EDR Contact: 09/10/2012
Data Release Frequency: Varies

MINES: Mines Master Index File

Contains all mine identification numbers issued for mines active or opened since 1971. The data also includes violation information.

Date of Government Version: 08/18/2011
Date Data Arrived at EDR: 09/08/2011
Date Made Active in Reports: 09/29/2011
Number of Days to Update: 21

Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959
Last EDR Contact: 06/05/2012
Next Scheduled EDR Contact: 09/17/2012
Data Release Frequency: Semi-Annually

TRIS: Toxic Chemical Release Inventory System

Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12/31/2009
Date Data Arrived at EDR: 09/01/2011
Date Made Active in Reports: 01/10/2012
Number of Days to Update: 131

Source: EPA
Telephone: 202-566-0250
Last EDR Contact: 05/29/2012
Next Scheduled EDR Contact: 09/10/2012
Data Release Frequency: Annually

TSCA: Toxic Substances Control Act

Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/2006
Date Data Arrived at EDR: 09/29/2010
Date Made Active in Reports: 12/02/2010
Number of Days to Update: 64

Source: EPA
Telephone: 202-260-5521
Last EDR Contact: 03/28/2012
Next Scheduled EDR Contact: 07/09/2012
Data Release Frequency: Every 4 Years

FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25

Source: EPA/Office of Prevention, Pesticides and Toxic Substances
Telephone: 202-566-1667
Last EDR Contact: 05/23/2012
Next Scheduled EDR Contact: 09/10/2012
Data Release Frequency: Quarterly

FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

A listing of FIFRA/TSCA Tracking System (FTTS) inspections and enforcements.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25

Source: EPA
Telephone: 202-566-1667
Last EDR Contact: 05/23/2012
Next Scheduled EDR Contact: 09/10/2012
Data Release Frequency: Quarterly

HIST FTTS: FIFRA/TSCA Tracking System Administrative Case Listing

A complete administrative case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2007
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

HIST FTTS INSP: FIFRA/TSCA Tracking System Inspection & Enforcement Case Listing

A complete inspection and enforcement case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2008
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

SSTS: Section 7 Tracking Systems

Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

Date of Government Version: 12/31/2009
Date Data Arrived at EDR: 12/10/2010
Date Made Active in Reports: 02/25/2011
Number of Days to Update: 77

Source: EPA
Telephone: 202-564-4203
Last EDR Contact: 04/30/2012
Next Scheduled EDR Contact: 08/13/2012
Data Release Frequency: Annually

ICIS: Integrated Compliance Information System

The Integrated Compliance Information System (ICIS) supports the information needs of the national enforcement and compliance program as well as the unique needs of the National Pollutant Discharge Elimination System (NPDES) program.

Date of Government Version: 07/20/2011
Date Data Arrived at EDR: 11/10/2011
Date Made Active in Reports: 01/10/2012
Number of Days to Update: 61

Source: Environmental Protection Agency
Telephone: 202-564-5088
Last EDR Contact: 03/26/2012
Next Scheduled EDR Contact: 07/09/2012
Data Release Frequency: Quarterly

PADS: PCB Activity Database System

PCB Activity Database. PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 11/01/2010
Date Data Arrived at EDR: 11/10/2010
Date Made Active in Reports: 02/16/2011
Number of Days to Update: 98

Source: EPA
Telephone: 202-566-0500
Last EDR Contact: 04/17/2012
Next Scheduled EDR Contact: 07/30/2012
Data Release Frequency: Annually

MLTS: Material Licensing Tracking System

MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 06/21/2011
Date Data Arrived at EDR: 07/15/2011
Date Made Active in Reports: 09/13/2011
Number of Days to Update: 60

Source: Nuclear Regulatory Commission
Telephone: 301-415-7169
Last EDR Contact: 06/11/2012
Next Scheduled EDR Contact: 09/24/2012
Data Release Frequency: Quarterly

RADINFO: Radiation Information Database

The Radiation Information Database (RADINFO) contains information about facilities that are regulated by U.S. Environmental Protection Agency (EPA) regulations for radiation and radioactivity.

Date of Government Version: 01/10/2012
Date Data Arrived at EDR: 01/12/2012
Date Made Active in Reports: 03/01/2012
Number of Days to Update: 49

Source: Environmental Protection Agency
Telephone: 202-343-9775
Last EDR Contact: 04/10/2012
Next Scheduled EDR Contact: 07/23/2012
Data Release Frequency: Quarterly

FINDS: Facility Index System/Facility Registry System

Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 10/23/2011
Date Data Arrived at EDR: 12/13/2011
Date Made Active in Reports: 03/01/2012
Number of Days to Update: 79

Source: EPA
Telephone: (415) 947-8000
Last EDR Contact: 06/12/2012
Next Scheduled EDR Contact: 09/24/2012
Data Release Frequency: Quarterly

RAATS: RCRA Administrative Action Tracking System

RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/1995
Date Data Arrived at EDR: 07/03/1995
Date Made Active in Reports: 08/07/1995
Number of Days to Update: 35

Source: EPA
Telephone: 202-564-4104
Last EDR Contact: 06/02/2008
Next Scheduled EDR Contact: 09/01/2008
Data Release Frequency: No Update Planned

BRS: Biennial Reporting System

The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/31/2009
Date Data Arrived at EDR: 03/01/2011
Date Made Active in Reports: 05/02/2011
Number of Days to Update: 62

Source: EPA/NTIS
Telephone: 800-424-9346
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: 09/10/2012
Data Release Frequency: Biennially

CA BOND EXP. PLAN: Bond Expenditure Plan
Department of Health Services developed a site-specific expenditure plan as the basis for an appropriation of Hazardous Substance Cleanup Bond Act funds. It is not updated.

Date of Government Version: 01/01/1989
Date Data Arrived at EDR: 07/27/1994
Date Made Active in Reports: 08/02/1994
Number of Days to Update: 6
Source: Department of Health Services
Telephone: 916-255-2118
Last EDR Contact: 05/31/1994
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

NPDES: NPDES Permits Listing
A listing of NPDES permits, including stormwater.

Date of Government Version: 02/20/2012
Date Data Arrived at EDR: 02/20/2012
Date Made Active in Reports: 03/29/2012
Number of Days to Update: 38
Source: State Water Resources Control Board
Telephone: 916-445-9379
Last EDR Contact: 05/22/2012
Next Scheduled EDR Contact: 09/03/2012
Data Release Frequency: Quarterly

UIC: UIC Listing
A listing of underground control injection wells.

Date of Government Version: 12/09/2011
Date Data Arrived at EDR: 02/29/2012
Date Made Active in Reports: 04/04/2012
Number of Days to Update: 35
Source: Deaprtment of Conservation
Telephone: 916-445-2408
Last EDR Contact: 06/13/2012
Next Scheduled EDR Contact: 10/01/2012
Data Release Frequency: Varies

WDS: Waste Discharge System
Sites which have been issued waste discharge requirements.

Date of Government Version: 06/19/2007
Date Data Arrived at EDR: 06/20/2007
Date Made Active in Reports: 06/29/2007
Number of Days to Update: 9
Source: State Water Resources Control Board
Telephone: 916-341-5227
Last EDR Contact: 05/23/2012
Next Scheduled EDR Contact: 09/10/2012
Data Release Frequency: Quarterly

CORTESE: "Cortese" Hazardous Waste & Substances Sites List
The sites for the list are designated by the State Water Resource Control Board (LUST), the Integrated Waste Board (SWF/LS), and the Department of Toxic Substances Control (Cal-Sites).

Date of Government Version: 04/02/2012
Date Data Arrived at EDR: 04/03/2012
Date Made Active in Reports: 06/11/2012
Number of Days to Update: 69
Source: CAL EPA/Office of Emergency Information
Telephone: 916-323-3400
Last EDR Contact: 04/03/2012
Next Scheduled EDR Contact: 07/16/2012
Data Release Frequency: Quarterly

HIST CORTESE: Hazardous Waste & Substance Site List
The sites for the list are designated by the State Water Resource Control Board [LUST], the Integrated Waste Board [SWF/LS], and the Department of Toxic Substances Control [CALSITES]. This listing is no longer updated by the state agency.

Date of Government Version: 04/01/2001
Date Data Arrived at EDR: 01/22/2009
Date Made Active in Reports: 04/08/2009
Number of Days to Update: 76
Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 01/22/2009
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

NOTIFY 65: Proposition 65 Records
Listings of all Proposition 65 incidents reported to counties by the State Water Resources Control Board and the Regional Water Quality Control Board. This database is no longer updated by the reporting agency.

Date of Government Version: 10/21/1993
Date Data Arrived at EDR: 11/01/1993
Date Made Active in Reports: 11/19/1993
Number of Days to Update: 18

Source: State Water Resources Control Board
Telephone: 916-445-3846
Last EDR Contact: 03/26/2012
Next Scheduled EDR Contact: 07/09/2012
Data Release Frequency: No Update Planned

DRYCLEANERS: Cleaner Facilities

A list of drycleaner related facilities that have EPA ID numbers. These are facilities with certain SIC codes: power laundries, family and commercial; garment pressing and cleaner's agents; linen supply; coin-operated laundries and cleaning; drycleaning plants, except rugs; carpet and upholster cleaning; industrial launderers; laundry and garment services.

Date of Government Version: 01/19/2012
Date Data Arrived at EDR: 01/19/2012
Date Made Active in Reports: 02/21/2012
Number of Days to Update: 33

Source: Department of Toxic Substance Control
Telephone: 916-327-4498
Last EDR Contact: 06/11/2012
Next Scheduled EDR Contact: 09/24/2012
Data Release Frequency: Annually

WIP: Well Investigation Program Case List

Well Investigation Program case in the San Gabriel and San Fernando Valley area.

Date of Government Version: 07/03/2009
Date Data Arrived at EDR: 07/21/2009
Date Made Active in Reports: 08/03/2009
Number of Days to Update: 13

Source: Los Angeles Water Quality Control Board
Telephone: 213-576-6726
Last EDR Contact: 04/02/2012
Next Scheduled EDR Contact: 07/16/2012
Data Release Frequency: Varies

ENF: Enforcement Action Listing

A listing of Water Board Enforcement Actions. Formal is everything except Oral/Verbal Communication, Notice of Violation, Expedited Payment Letter, and Staff Enforcement Letter.

Date of Government Version: 08/15/2011
Date Data Arrived at EDR: 08/23/2011
Date Made Active in Reports: 10/03/2011
Number of Days to Update: 41

Source: State Water Resoruces Control Board
Telephone: 916-445-9379
Last EDR Contact: 06/11/2012
Next Scheduled EDR Contact: 08/13/2012
Data Release Frequency: Varies

HAZNET: Facility and Manifest Data

Facility and Manifest Data. The data is extracted from the copies of hazardous waste manifests received each year by the DTSC. The annual volume of manifests is typically 700,000 - 1,000,000 annually, representing approximately 350,000 - 500,000 shipments. Data are from the manifests submitted without correction, and therefore many contain some invalid values for data elements such as generator ID, TSD ID, waste category, and disposal method.

Date of Government Version: 12/31/2010
Date Data Arrived at EDR: 07/19/2011
Date Made Active in Reports: 08/16/2011
Number of Days to Update: 28

Source: California Environmental Protection Agency
Telephone: 916-255-1136
Last EDR Contact: 04/17/2012
Next Scheduled EDR Contact: 07/30/2012
Data Release Frequency: Annually

EMI: Emissions Inventory Data

Toxics and criteria pollutant emissions data collected by the ARB and local air pollution agencies.

Date of Government Version: 12/31/2008
Date Data Arrived at EDR: 09/29/2010
Date Made Active in Reports: 10/18/2010
Number of Days to Update: 19

Source: California Air Resources Board
Telephone: 916-322-2990
Last EDR Contact: 03/30/2012
Next Scheduled EDR Contact: 07/09/2012
Data Release Frequency: Varies

INDIAN RESERV: Indian Reservations

This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 12/08/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 34

Source: USGS
Telephone: 202-208-3710
Last EDR Contact: 04/16/2012
Next Scheduled EDR Contact: 07/30/2012
Data Release Frequency: Semi-Annually

SCRD DRYCLEANERS: State Coalition for Remediation of Drycleaners Listing

The State Coalition for Remediation of Drycleaners was established in 1998, with support from the U.S. EPA Office of Superfund Remediation and Technology Innovation. It is comprised of representatives of states with established drycleaner remediation programs. Currently the member states are Alabama, Connecticut, Florida, Illinois, Kansas, Minnesota, Missouri, North Carolina, Oregon, South Carolina, Tennessee, Texas, and Wisconsin.

Date of Government Version: 03/07/2011
Date Data Arrived at EDR: 03/09/2011
Date Made Active in Reports: 05/02/2011
Number of Days to Update: 54

Source: Environmental Protection Agency
Telephone: 615-532-8599
Last EDR Contact: 04/23/2012
Next Scheduled EDR Contact: 08/06/2012
Data Release Frequency: Varies

FEDLAND: Federal and Indian Lands

Federally and Indian administrated lands of the United States. Lands included are administrated by: Army Corps of Engineers, Bureau of Reclamation, National Wild and Scenic River, National Wildlife Refuge, Public Domain Land, Wilderness, Wilderness Study Area, Wildlife Management Area, Bureau of Indian Affairs, Bureau of Land Management, Department of Justice, Forest Service, Fish and Wildlife Service, National Park Service.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 02/06/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 339

Source: U.S. Geological Survey
Telephone: 888-275-8747
Last EDR Contact: 04/16/2012
Next Scheduled EDR Contact: 07/30/2012
Data Release Frequency: N/A

PCB TRANSFORMER: PCB Transformer Registration Database

The database of PCB transformer registrations that includes all PCB registration submittals.

Date of Government Version: 02/01/2011
Date Data Arrived at EDR: 10/19/2011
Date Made Active in Reports: 01/10/2012
Number of Days to Update: 83

Source: Environmental Protection Agency
Telephone: 202-566-0517
Last EDR Contact: 05/04/2012
Next Scheduled EDR Contact: 08/13/2012
Data Release Frequency: Varies

COAL ASH EPA: Coal Combustion Residues Surface Impoundments List

A listing of coal combustion residues surface impoundments with high hazard potential ratings.

Date of Government Version: 08/17/2010
Date Data Arrived at EDR: 01/03/2011
Date Made Active in Reports: 03/21/2011
Number of Days to Update: 77

Source: Environmental Protection Agency
Telephone: N/A
Last EDR Contact: 06/12/2012
Next Scheduled EDR Contact: 09/24/2012
Data Release Frequency: Varies

EPA WATCH LIST: EPA WATCH LIST

EPA maintains a "Watch List" to facilitate dialogue between EPA, state and local environmental agencies on enforcement matters relating to facilities with alleged violations identified as either significant or high priority. Being on the Watch List does not mean that the facility has actually violated the law only that an investigation by EPA or a state or local environmental agency has led those organizations to allege that an unproven violation has in fact occurred. Being on the Watch List does not represent a higher level of concern regarding the alleged violations that were detected, but instead indicates cases requiring additional dialogue between EPA, state and local agencies - primarily because of the length of time the alleged violation has gone unaddressed or unresolved.

Date of Government Version: 03/31/2012
Date Data Arrived at EDR: 05/17/2012
Date Made Active in Reports: 06/14/2012
Number of Days to Update: 28

Source: Environmental Protection Agency
Telephone: 617-520-3000
Last EDR Contact: 05/15/2012
Next Scheduled EDR Contact: 08/27/2012
Data Release Frequency: Quarterly

2020 CORRECTIVE ACTION: 2020 Corrective Action Program List
This RCRA cleanup baseline includes facilities expected to need corrective action.

Date of Government Version: 11/11/2011
Date Data Arrived at EDR: 05/18/2012
Date Made Active in Reports: 05/25/2012
Number of Days to Update: 7
Source: Environmental Protection Agency
Telephone: 703-308-4044
Last EDR Contact: 05/18/2012
Next Scheduled EDR Contact: 08/27/2012
Data Release Frequency: Varies

COAL ASH DOE: Sleam-Electric Plan Operation Data
A listing of power plants that store ash in surface ponds.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 08/07/2009
Date Made Active in Reports: 10/22/2009
Number of Days to Update: 76
Source: Department of Energy
Telephone: 202-586-8719
Last EDR Contact: 04/16/2012
Next Scheduled EDR Contact: 07/30/2012
Data Release Frequency: Varies

HWT: Registered Hazardous Waste Transporter Database
A listing of hazardous waste transporters. In California, unless specifically exempted, it is unlawful for any person to transport hazardous wastes unless the person holds a valid registration issued by DTSC. A hazardous waste transporter registration is valid for one year and is assigned a unique registration number.

Date of Government Version: 04/11/2012
Date Data Arrived at EDR: 04/12/2012
Date Made Active in Reports: 05/08/2012
Number of Days to Update: 26
Source: Department of Toxic Substances Control
Telephone: 916-440-7145
Last EDR Contact: 04/12/2012
Next Scheduled EDR Contact: 07/30/2012
Data Release Frequency: Quarterly

PROC: Certified Processors Database
A listing of certified processors.

Date of Government Version: 03/12/2012
Date Data Arrived at EDR: 03/21/2012
Date Made Active in Reports: 05/08/2012
Number of Days to Update: 48
Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 06/14/2012
Next Scheduled EDR Contact: 10/01/2012
Data Release Frequency: Quarterly

MWMP: Medical Waste Management Program Listing
The Medical Waste Management Program (MWMP) ensures the proper handling and disposal of medical waste by permitting and inspecting medical waste Offsite Treatment Facilities (PDF) and Transfer Stations (PDF) throughout the state. MWMP also oversees all Medical Waste Transporters.

Date of Government Version: 02/24/2012
Date Data Arrived at EDR: 03/13/2012
Date Made Active in Reports: 04/02/2012
Number of Days to Update: 20
Source: Department of Public Health
Telephone: 916-558-1784
Last EDR Contact: 06/11/2012
Next Scheduled EDR Contact: 09/24/2012
Data Release Frequency: Varies

FINANCIAL ASSURANCE 1: Financial Assurance Information Listing
Financial Assurance information

Date of Government Version: 03/01/2007
Date Data Arrived at EDR: 06/01/2007
Date Made Active in Reports: 06/29/2007
Number of Days to Update: 28
Source: Department of Toxic Substances Control
Telephone: 916-255-3628
Last EDR Contact: 05/04/2012
Next Scheduled EDR Contact: 08/13/2012
Data Release Frequency: Varies

FINANCIAL ASSURANCE 2: Financial Assurance Information Listing
A listing of financial assurance information for solid waste facilities. Financial assurance is intended to ensure that resources are available to pay for the cost of closure, post-closure care, and corrective measures if the owner or operator of a regulated facility is unable or unwilling to pay.

Date of Government Version: 02/22/2012
Date Data Arrived at EDR: 02/24/2012
Date Made Active in Reports: 04/04/2012
Number of Days to Update: 40

Source: California Integrated Waste Management Board
Telephone: 916-341-6066
Last EDR Contact: 05/21/2012
Next Scheduled EDR Contact: 09/03/2012
Data Release Frequency: Varies

HWP: EnviroStor Permitted Facilities Listing
Detailed information on permitted hazardous waste facilities and corrective action ("cleanups") tracked in EnviroStor.

Date of Government Version: 08/09/2010
Date Data Arrived at EDR: 08/11/2010
Date Made Active in Reports: 08/20/2010
Number of Days to Update: 9

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: 09/10/2012
Data Release Frequency: Quarterly

EDR PROPRIETARY RECORDS

EDR Proprietary Records

Manufactured Gas Plants: EDR Proprietary Manufactured Gas Plants
The EDR Proprietary Manufactured Gas Plant Database includes records of coal gas plants (manufactured gas plants) compiled by EDR's researchers. Manufactured gas sites were used in the United States from the 1800's to 1950's to produce a gas that could be distributed and used as fuel. These plants used whale oil, rosin, coal, or a mixture of coal, oil, and water that also produced a significant amount of waste. Many of the byproducts of the gas production, such as coal tar (oily waste containing volatile and non-volatile chemicals), sludges, oils and other compounds are potentially hazardous to human health and the environment. The byproduct from this process was frequently disposed of directly at the plant site and can remain or spread slowly, serving as a continuous source of soil and groundwater contamination.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

EDR Historical Auto Stations: EDR Proprietary Historic Gas Stations
EDR has searched selected national collections of business directories and has collected listings of potential gas station/filling station/service station sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include gas station/filling station/service station establishments. The categories reviewed included, but were not limited to gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, etc.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR Historical Cleaners: EDR Proprietary Historic Dry Cleaners
EDR has searched selected national collections of business directories and has collected listings of potential dry cleaner sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include dry cleaning establishments. The categories reviewed included, but were not limited to dry cleaners, cleaners, laundry, laundromat, cleaning/laundry, wash & dry etc.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

COUNTY RECORDS

ALAMEDA COUNTY:

Contaminated Sites

A listing of contaminated sites overseen by the Toxic Release Program (oil and groundwater contamination from chemical releases and spills) and the Leaking Underground Storage Tank Program (soil and ground water contamination from leaking petroleum USTs).

Date of Government Version: 04/03/2012
Date Data Arrived at EDR: 04/04/2012
Date Made Active in Reports: 05/08/2012
Number of Days to Update: 34

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 04/02/2012
Next Scheduled EDR Contact: 07/16/2012
Data Release Frequency: Semi-Annually

Underground Tanks

Underground storage tank sites located in Alameda county.

Date of Government Version: 04/03/2012
Date Data Arrived at EDR: 04/04/2012
Date Made Active in Reports: 05/08/2012
Number of Days to Update: 34

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 04/02/2012
Next Scheduled EDR Contact: 07/16/2012
Data Release Frequency: Semi-Annually

CONTRA COSTA COUNTY:

Site List

List includes sites from the underground tank, hazardous waste generator and business plan/2185 programs.

Date of Government Version: 03/26/2012
Date Data Arrived at EDR: 03/28/2012
Date Made Active in Reports: 05/08/2012
Number of Days to Update: 41

Source: Contra Costa Health Services Department
Telephone: 925-646-2286
Last EDR Contact: 05/07/2012
Next Scheduled EDR Contact: 08/20/2012
Data Release Frequency: Semi-Annually

KERN COUNTY:

Underground Storage Tank Sites & Tank Listing

Kern County Sites and Tanks Listing.

Date of Government Version: 08/31/2010
Date Data Arrived at EDR: 09/01/2010
Date Made Active in Reports: 09/30/2010
Number of Days to Update: 29

Source: Kern County Environment Health Services Department
Telephone: 661-862-8700
Last EDR Contact: 06/15/2012
Next Scheduled EDR Contact: 08/27/2012
Data Release Frequency: Quarterly

LOS ANGELES COUNTY:

San Gabriel Valley Areas of Concern

San Gabriel Valley areas where VOC contamination is at or above the MCL as designated by region 9 EPA office.

Date of Government Version: 03/30/2009
Date Data Arrived at EDR: 03/31/2009
Date Made Active in Reports: 10/23/2009
Number of Days to Update: 206

Source: EPA Region 9
Telephone: 415-972-3178
Last EDR Contact: 03/26/2012
Next Scheduled EDR Contact: 07/09/2012
Data Release Frequency: No Update Planned

HMS: Street Number List
Industrial Waste and Underground Storage Tank Sites.

Date of Government Version: 09/29/2011
Date Data Arrived at EDR: 12/15/2011
Date Made Active in Reports: 01/19/2012
Number of Days to Update: 35
Source: Department of Public Works
Telephone: 626-458-3517
Last EDR Contact: 04/10/2012
Next Scheduled EDR Contact: 07/30/2012
Data Release Frequency: Semi-Annually

List of Solid Waste Facilities
Solid Waste Facilities in Los Angeles County.

Date of Government Version: 04/23/2012
Date Data Arrived at EDR: 04/24/2012
Date Made Active in Reports: 05/25/2012
Number of Days to Update: 31
Source: La County Department of Public Works
Telephone: 818-458-5185
Last EDR Contact: 04/24/2012
Next Scheduled EDR Contact: 08/06/2012
Data Release Frequency: Varies

City of Los Angeles Landfills
Landfills owned and maintained by the City of Los Angeles.

Date of Government Version: 03/05/2009
Date Data Arrived at EDR: 03/10/2009
Date Made Active in Reports: 04/08/2009
Number of Days to Update: 29
Source: Engineering & Construction Division
Telephone: 213-473-7869
Last EDR Contact: 05/21/2012
Next Scheduled EDR Contact: 09/03/2012
Data Release Frequency: Varies

Site Mitigation List
Industrial sites that have had some sort of spill or complaint.

Date of Government Version: 12/29/2011
Date Data Arrived at EDR: 02/02/2012
Date Made Active in Reports: 02/21/2012
Number of Days to Update: 19
Source: Community Health Services
Telephone: 323-890-7806
Last EDR Contact: 04/16/2012
Next Scheduled EDR Contact: 08/06/2012
Data Release Frequency: Annually

City of El Segundo Underground Storage Tank
Underground storage tank sites located in El Segundo city.

Date of Government Version: 04/26/2012
Date Data Arrived at EDR: 05/01/2012
Date Made Active in Reports: 05/24/2012
Number of Days to Update: 23
Source: City of El Segundo Fire Department
Telephone: 310-524-2236
Last EDR Contact: 04/17/2012
Next Scheduled EDR Contact: 08/06/2012
Data Release Frequency: Semi-Annually

City of Long Beach Underground Storage Tank
Underground storage tank sites located in the city of Long Beach.

Date of Government Version: 03/28/2003
Date Data Arrived at EDR: 10/23/2003
Date Made Active in Reports: 11/26/2003
Number of Days to Update: 34
Source: City of Long Beach Fire Department
Telephone: 562-570-2563
Last EDR Contact: 04/30/2012
Next Scheduled EDR Contact: 08/13/2012
Data Release Frequency: Annually

City of Torrance Underground Storage Tank
Underground storage tank sites located in the city of Torrance.

Date of Government Version: 03/16/2012
Date Data Arrived at EDR: 04/16/2012
Date Made Active in Reports: 05/08/2012
Number of Days to Update: 22
Source: City of Torrance Fire Department
Telephone: 310-618-2973
Last EDR Contact: 04/10/2012
Next Scheduled EDR Contact: 07/30/2012
Data Release Frequency: Semi-Annually

MARIN COUNTY:

Underground Storage Tank Sites
Currently permitted USTs in Marin County.

Date of Government Version: 01/13/2012
Date Data Arrived at EDR: 01/24/2012
Date Made Active in Reports: 02/22/2012
Number of Days to Update: 29

Source: Public Works Department Waste Management
Telephone: 415-499-6647
Last EDR Contact: 05/08/2012
Next Scheduled EDR Contact: 07/23/2012
Data Release Frequency: Semi-Annually

NAPA COUNTY:

Sites With Reported Contamination
A listing of leaking underground storage tank sites located in Napa county.

Date of Government Version: 12/05/2011
Date Data Arrived at EDR: 12/06/2011
Date Made Active in Reports: 02/07/2012
Number of Days to Update: 63

Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 06/04/2012
Next Scheduled EDR Contact: 09/17/2012
Data Release Frequency: No Update Planned

Closed and Operating Underground Storage Tank Sites
Underground storage tank sites located in Napa county.

Date of Government Version: 01/15/2008
Date Data Arrived at EDR: 01/16/2008
Date Made Active in Reports: 02/08/2008
Number of Days to Update: 23

Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 12/05/2012
Next Scheduled EDR Contact: 09/17/2012
Data Release Frequency: No Update Planned

ORANGE COUNTY:

List of Industrial Site Cleanups
Petroleum and non-petroleum spills.

Date of Government Version: 05/01/2012
Date Data Arrived at EDR: 05/17/2012
Date Made Active in Reports: 06/11/2012
Number of Days to Update: 25

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 05/15/2012
Next Scheduled EDR Contact: 08/27/2012
Data Release Frequency: Annually

List of Underground Storage Tank Cleanups
Orange County Underground Storage Tank Cleanups (LUST).

Date of Government Version: 02/01/2012
Date Data Arrived at EDR: 02/17/2012
Date Made Active in Reports: 02/21/2012
Number of Days to Update: 4

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 05/15/2012
Next Scheduled EDR Contact: 08/27/2012
Data Release Frequency: Quarterly

List of Underground Storage Tank Facilities
Orange County Underground Storage Tank Facilities (UST).

Date of Government Version: 05/01/2012
Date Data Arrived at EDR: 05/17/2012
Date Made Active in Reports: 05/24/2012
Number of Days to Update: 7

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 05/15/2012
Next Scheduled EDR Contact: 08/27/2012
Data Release Frequency: Quarterly

PLACER COUNTY:

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Master List of Facilities
List includes aboveground tanks, underground tanks and cleanup sites.

Date of Government Version: 03/19/2012
Date Data Arrived at EDR: 03/19/2012
Date Made Active in Reports: 04/04/2012
Number of Days to Update: 16

Source: Placer County Health and Human Services
Telephone: 530-889-7312
Last EDR Contact: 06/11/2012
Next Scheduled EDR Contact: 09/24/2012
Data Release Frequency: Semi-Annually

RIVERSIDE COUNTY:

Listing of Underground Tank Cleanup Sites
Riverside County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 04/23/2012
Date Data Arrived at EDR: 04/24/2012
Date Made Active in Reports: 05/25/2012
Number of Days to Update: 31

Source: Department of Environmental Health
Telephone: 951-358-5055
Last EDR Contact: 12/21/2011
Next Scheduled EDR Contact: 04/09/2012
Data Release Frequency: Quarterly

Underground Storage Tank Tank List
Underground storage tank sites located in Riverside county.

Date of Government Version: 04/23/2012
Date Data Arrived at EDR: 04/24/2012
Date Made Active in Reports: 05/24/2012
Number of Days to Update: 30

Source: Department of Environmental Health
Telephone: 951-358-5055
Last EDR Contact: 12/21/2011
Next Scheduled EDR Contact: 04/26/2012
Data Release Frequency: Quarterly

SACRAMENTO COUNTY:

Toxic Site Clean-Up List
List of sites where unauthorized releases of potentially hazardous materials have occurred.

Date of Government Version: 02/07/2012
Date Data Arrived at EDR: 04/16/2012
Date Made Active in Reports: 05/08/2012
Number of Days to Update: 22

Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 04/09/2012
Next Scheduled EDR Contact: 07/23/2012
Data Release Frequency: Quarterly

Master Hazardous Materials Facility List
Any business that has hazardous materials on site - hazardous material storage sites, underground storage tanks, waste generators.

Date of Government Version: 02/02/2012
Date Data Arrived at EDR: 04/17/2012
Date Made Active in Reports: 05/08/2012
Number of Days to Update: 21

Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 04/09/2012
Next Scheduled EDR Contact: 07/23/2012
Data Release Frequency: Quarterly

SAN BERNARDINO COUNTY:

Hazardous Material Permits
This listing includes underground storage tanks, medical waste handlers/generators, hazardous materials handlers, hazardous waste generators, and waste oil generators/handlers.

Date of Government Version: 03/01/2012
Date Data Arrived at EDR: 03/01/2012
Date Made Active in Reports: 03/27/2012
Number of Days to Update: 26

Source: San Bernardino County Fire Department Hazardous Materials Division
Telephone: 909-387-3041
Last EDR Contact: 05/15/2012
Next Scheduled EDR Contact: 08/27/2012
Data Release Frequency: Quarterly

SAN DIEGO COUNTY:

Hazardous Materials Management Division Database

The database includes: HE58 - This report contains the business name, site address, business phone number, establishment 'H' permit number, type of permit, and the business status. HE17 - In addition to providing the same information provided in the HE58 listing, HE17 provides inspection dates, violations received by the establishment, hazardous waste generated, the quantity, method of storage, treatment/disposal of waste and the hauler, and information on underground storage tanks. Unauthorized Release List - Includes a summary of environmental contamination cases in San Diego County (underground tank cases, non-tank cases, groundwater contamination, and soil contamination are included.)

Date of Government Version: 09/09/2010
Date Data Arrived at EDR: 09/15/2010
Date Made Active in Reports: 09/29/2010
Number of Days to Update: 14

Source: Hazardous Materials Management Division
Telephone: 619-338-2268
Last EDR Contact: 06/15/2012
Next Scheduled EDR Contact: 09/24/2012
Data Release Frequency: Quarterly

Solid Waste Facilities

San Diego County Solid Waste Facilities.

Date of Government Version: 10/31/2011
Date Data Arrived at EDR: 11/04/2011
Date Made Active in Reports: 12/13/2011
Number of Days to Update: 39

Source: Department of Health Services
Telephone: 619-338-2209
Last EDR Contact: 04/30/2012
Next Scheduled EDR Contact: 08/13/2012
Data Release Frequency: Varies

Environmental Case Listing

The listing contains all underground tank release cases and projects pertaining to properties contaminated with hazardous substances that are actively under review by the Site Assessment and Mitigation Program.

Date of Government Version: 03/23/2010
Date Data Arrived at EDR: 06/15/2010
Date Made Active in Reports: 07/09/2010
Number of Days to Update: 24

Source: San Diego County Department of Environmental Health
Telephone: 619-338-2371
Last EDR Contact: 06/11/2012
Next Scheduled EDR Contact: 09/24/2012
Data Release Frequency: No Update Planned

SAN FRANCISCO COUNTY:

Local Oversite Facilities

A listing of leaking underground storage tank sites located in San Francisco county.

Date of Government Version: 09/19/2008
Date Data Arrived at EDR: 09/19/2008
Date Made Active in Reports: 09/29/2008
Number of Days to Update: 10

Source: Department Of Public Health San Francisco County
Telephone: 415-252-3920
Last EDR Contact: 05/15/2012
Next Scheduled EDR Contact: 08/27/2012
Data Release Frequency: Quarterly

Underground Storage Tank Information

Underground storage tank sites located in San Francisco county.

Date of Government Version: 11/29/2010
Date Data Arrived at EDR: 03/10/2011
Date Made Active in Reports: 03/15/2011
Number of Days to Update: 5

Source: Department of Public Health
Telephone: 415-252-3920
Last EDR Contact: 05/15/2012
Next Scheduled EDR Contact: 08/27/2012
Data Release Frequency: Quarterly

SAN JOAQUIN COUNTY:

San Joaquin Co. UST
A listing of underground storage tank locations in San Joaquin county.

Date of Government Version: 03/29/2012
Date Data Arrived at EDR: 03/30/2012
Date Made Active in Reports: 05/08/2012
Number of Days to Update: 39
Source: Environmental Health Department
Telephone: N/A
Last EDR Contact: 03/26/2012
Next Scheduled EDR Contact: 07/09/2012
Data Release Frequency: Semi-Annually

SAN MATEO COUNTY:

Business Inventory
List includes Hazardous Materials Business Plan, hazardous waste generators, and underground storage tanks.

Date of Government Version: 04/09/2012
Date Data Arrived at EDR: 04/09/2012
Date Made Active in Reports: 05/08/2012
Number of Days to Update: 29
Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 06/17/2012
Next Scheduled EDR Contact: 10/01/2012
Data Release Frequency: Annually

Fuel Leak List
A listing of leaking underground storage tank sites located in San Mateo county.

Date of Government Version: 03/26/2012
Date Data Arrived at EDR: 03/26/2012
Date Made Active in Reports: 05/08/2012
Number of Days to Update: 43
Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 06/18/2012
Next Scheduled EDR Contact: 10/01/2012
Data Release Frequency: Semi-Annually

SANTA CLARA COUNTY:

HIST LUST - Fuel Leak Site Activity Report
A listing of open and closed leaking underground storage tanks. This listing is no longer updated by the county. Leaking underground storage tanks are now handled by the Department of Environmental Health.

Date of Government Version: 03/29/2005
Date Data Arrived at EDR: 03/30/2005
Date Made Active in Reports: 04/21/2005
Number of Days to Update: 22
Source: Santa Clara Valley Water District
Telephone: 408-265-2600
Last EDR Contact: 03/23/2009
Next Scheduled EDR Contact: 06/22/2009
Data Release Frequency: No Update Planned

LOP Listing
A listing of leaking underground storage tanks located in Santa Clara county.

Date of Government Version: 03/05/2012
Date Data Arrived at EDR: 03/07/2012
Date Made Active in Reports: 03/27/2012
Number of Days to Update: 20
Source: Department of Environmental Health
Telephone: 408-918-3417
Last EDR Contact: 06/04/2012
Next Scheduled EDR Contact: 09/17/2012
Data Release Frequency: Annually

Hazardous Material Facilities
Hazardous material facilities, including underground storage tank sites.

Date of Government Version: 05/15/2012
Date Data Arrived at EDR: 05/15/2012
Date Made Active in Reports: 05/25/2012
Number of Days to Update: 10
Source: City of San Jose Fire Department
Telephone: 408-535-7694
Last EDR Contact: 05/15/2012
Next Scheduled EDR Contact: 08/27/2012
Data Release Frequency: Annually

SOLANO COUNTY:

Leaking Underground Storage Tanks
A listing of leaking underground storage tank sites located in Solano county.

Date of Government Version: 03/19/2012
Date Data Arrived at EDR: 03/21/2012
Date Made Active in Reports: 05/08/2012
Number of Days to Update: 48

Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 06/15/2012
Next Scheduled EDR Contact: 10/01/2012
Data Release Frequency: Quarterly

Underground Storage Tanks
Underground storage tank sites located in Solano county.

Date of Government Version: 03/19/2012
Date Data Arrived at EDR: 03/22/2012
Date Made Active in Reports: 05/08/2012
Number of Days to Update: 47

Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 06/15/2012
Next Scheduled EDR Contact: 10/01/2012
Data Release Frequency: Quarterly

SONOMA COUNTY:

Leaking Underground Storage Tank Sites
A listing of leaking underground storage tank sites located in Sonoma county.

Date of Government Version: 04/05/2011
Date Data Arrived at EDR: 04/06/2011
Date Made Active in Reports: 05/12/2011
Number of Days to Update: 36

Source: Department of Health Services
Telephone: 707-565-6565
Last EDR Contact: 04/02/2012
Next Scheduled EDR Contact: 07/16/2012
Data Release Frequency: Quarterly

SUTTER COUNTY:

Underground Storage Tanks
Underground storage tank sites located in Sutter county.

Date of Government Version: 03/12/2012
Date Data Arrived at EDR: 03/13/2012
Date Made Active in Reports: 04/03/2012
Number of Days to Update: 21

Source: Sutter County Department of Agriculture
Telephone: 530-822-7500
Last EDR Contact: 06/11/2012
Next Scheduled EDR Contact: 09/24/2012
Data Release Frequency: Semi-Annually

VENTURA COUNTY:

Business Plan, Hazardous Waste Producers, and Operating Underground Tanks
The BWT list indicates by site address whether the Environmental Health Division has Business Plan (B), Waste Producer (W), and/or Underground Tank (T) information.

Date of Government Version: 02/03/2012
Date Data Arrived at EDR: 02/22/2012
Date Made Active in Reports: 03/29/2012
Number of Days to Update: 36

Source: Ventura County Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 05/21/2012
Next Scheduled EDR Contact: 09/03/2012
Data Release Frequency: Quarterly

Inventory of Illegal Abandoned and Inactive Sites
Ventura County Inventory of Closed, Illegal Abandoned, and Inactive Sites.

Date of Government Version: 12/01/2011
Date Data Arrived at EDR: 12/01/2011
Date Made Active in Reports: 01/19/2012
Number of Days to Update: 49

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 04/09/2012
Next Scheduled EDR Contact: 07/23/2012
Data Release Frequency: Annually

Listing of Underground Tank Cleanup Sites

Ventura County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 05/29/2008
Date Data Arrived at EDR: 06/24/2008
Date Made Active in Reports: 07/31/2008
Number of Days to Update: 37

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 05/21/2012
Next Scheduled EDR Contact: 09/03/2012
Data Release Frequency: Quarterly

Medical Waste Program List

To protect public health and safety and the environment from potential exposure to disease causing agents, the Environmental Health Division Medical Waste Program regulates the generation, handling, storage, treatment and disposal of medical waste throughout the County.

Date of Government Version: 03/30/2012
Date Data Arrived at EDR: 05/04/2012
Date Made Active in Reports: 05/25/2012
Number of Days to Update: 21

Source: Ventura County Resource Management Agency
Telephone: 805-654-2813
Last EDR Contact: 04/30/2012
Next Scheduled EDR Contact: 08/13/2012
Data Release Frequency: Quarterly

Underground Tank Closed Sites List

Ventura County Operating Underground Storage Tank Sites (UST)/Underground Tank Closed Sites List.

Date of Government Version: 02/27/2012
Date Data Arrived at EDR: 03/21/2012
Date Made Active in Reports: 05/08/2012
Number of Days to Update: 48

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 06/14/2012
Next Scheduled EDR Contact: 10/01/2012
Data Release Frequency: Quarterly

YOLO COUNTY:

Underground Storage Tank Comprehensive Facility Report

Underground storage tank sites located in Yolo county.

Date of Government Version: 03/26/2012
Date Data Arrived at EDR: 03/30/2012
Date Made Active in Reports: 05/08/2012
Number of Days to Update: 39

Source: Yolo County Department of Health
Telephone: 530-666-8646
Last EDR Contact: 03/26/2012
Next Scheduled EDR Contact: 07/09/2012
Data Release Frequency: Annually

OTHER DATABASE(S)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

CT MANIFEST: Hazardous Waste Manifest Data

Facility and manifest data. Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a tsd facility.

Date of Government Version: 05/21/2012
Date Data Arrived at EDR: 05/22/2012
Date Made Active in Reports: 05/31/2012
Number of Days to Update: 9

Source: Department of Energy & Environmental Protection
Telephone: 860-424-3375
Last EDR Contact: 05/22/2012
Next Scheduled EDR Contact: 09/03/2012
Data Release Frequency: Annually

NJ MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2010
Date Data Arrived at EDR: 07/20/2011
Date Made Active in Reports: 08/11/2011
Number of Days to Update: 22

Source: Department of Environmental Protection
Telephone: N/A
Last EDR Contact: 04/17/2012
Next Scheduled EDR Contact: 07/30/2012
Data Release Frequency: Annually

NY MANIFEST: Facility and Manifest Data
Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a TSD facility.

Date of Government Version: 05/01/2012
Date Data Arrived at EDR: 05/09/2012
Date Made Active in Reports: 06/14/2012
Number of Days to Update: 36

Source: Department of Environmental Conservation
Telephone: 518-402-8651
Last EDR Contact: 05/09/2012
Next Scheduled EDR Contact: 08/20/2012
Data Release Frequency: Annually

PA MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2010
Date Data Arrived at EDR: 04/27/2012
Date Made Active in Reports: 06/05/2012
Number of Days to Update: 39

Source: Department of Environmental Protection
Telephone: 717-783-8990
Last EDR Contact: 04/23/2012
Next Scheduled EDR Contact: 08/06/2012
Data Release Frequency: Annually

RI MANIFEST: Manifest information
Hazardous waste manifest information

Date of Government Version: 12/31/2010
Date Data Arrived at EDR: 06/24/2011
Date Made Active in Reports: 06/30/2011
Number of Days to Update: 6

Source: Department of Environmental Management
Telephone: 401-222-2797
Last EDR Contact: 02/27/2012
Next Scheduled EDR Contact: 06/11/2012
Data Release Frequency: Annually

WI MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2010
Date Data Arrived at EDR: 08/19/2011
Date Made Active in Reports: 09/15/2011
Number of Days to Update: 27

Source: Department of Natural Resources
Telephone: N/A
Last EDR Contact: 06/18/2012
Next Scheduled EDR Contact: 10/01/2012
Data Release Frequency: Annually

Oil/Gas Pipelines: This data was obtained by EDR from the USGS in 1994. It is referred to by USGS as GeoData Digital Line Graphs from 1:100,000-Scale Maps. It was extracted from the transportation category including some oil, but primarily gas pipelines.

Electric Power Transmission Line Data
Source: Rextag Strategies Corp.
Telephone: (281) 769-2247
U.S. Electric Transmission and Power Plants Systems Digital GIS Data

Sensitive Receptors: There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

AHA Hospitals:
Source: American Hospital Association, Inc.
Telephone: 312-280-5991
The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

Medical Centers: Provider of Services Listing
Source: Centers for Medicare & Medicaid Services
Telephone: 410-786-3000
A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

Nursing Homes
Source: National Institutes of Health
Telephone: 301-594-6248
Information on Medicare and Medicaid certified nursing homes in the United States.

Public Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

Private Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on private school locations in the United States.

Daycare Centers: Licensed Facilities
Source: Department of Social Services
Telephone: 916-657-4041

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 2003 & 2011 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002 and 2005 from the U.S. Fish and Wildlife Service.

Scanned Digital USGS 7.5' Topographic Map (DRG)
Source: United States Geologic Survey
A digital raster graphic (DRG) is a scanned image of a U.S. Geological Survey topographic map. The map images are made by scanning published paper maps on high-resolution scanners. The raster image is georeferenced and fit to the Universal Transverse Mercator (UTM) projection.

STREET AND ADDRESS INFORMATION

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GEOCHECK ®- PHYSICAL SETTING SOURCE ADDENDUM

TARGET PROPERTY ADDRESS

WATER WHEEL
1745 NORTH SPRING STREET
LOS ANGELES, CA 90012

TARGET PROPERTY COORDINATES

Latitude (North):	34.0702 - 34° 4' 12.72''
Longitude (West):	118.2257 - 118° 13' 32.52''
Universal Tranverse Mercator:	Zone 11
UTM X (Meters):	386896.7
UTM Y (Meters):	3770422.8
Elevation:	307 ft. above sea level

USGS TOPOGRAPHIC MAP

Target Property Map:	34118-A2 LOS ANGELES, CA
Most Recent Revision:	1994

EDR's GeoCheck Physical Setting Source Addendum is provided to assist the environmental professional in forming an opinion about the impact of potential contaminant migration.

Assessment of the impact of contaminant migration generally has two principal investigative components:

1. Groundwater flow direction, and
2. Groundwater flow velocity.

Groundwater flow direction may be impacted by surface topography, hydrology, hydrogeology, characteristics of the soil, and nearby wells. Groundwater flow velocity is generally impacted by the nature of the geologic strata.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW DIRECTION INFORMATION

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, such as surface topographic information, hydrologic information, hydrogeologic data collected on nearby properties, and regional groundwater flow information (from deep aquifers).

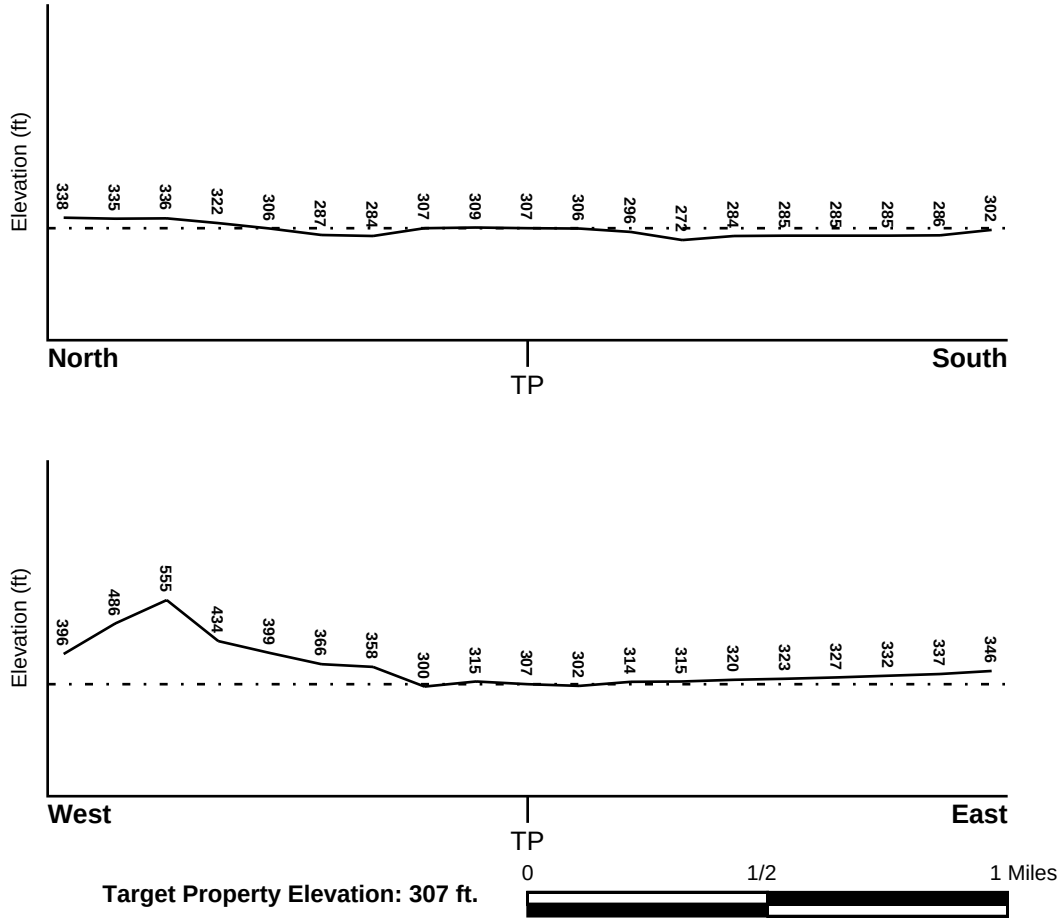
TOPOGRAPHIC INFORMATION

Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

TARGET PROPERTY TOPOGRAPHY

General Topographic Gradient: General SW

SURROUNDING TOPOGRAPHY: ELEVATION PROFILES



Source: Topography has been determined from the USGS 7.5' Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

HYDROLOGIC INFORMATION

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

FEMA FLOOD ZONE

Target Property County	FEMA Flood Electronic Data
LOS ANGELES, CA	YES - refer to the Overview Map and Detail Map

Flood Plain Panel at Target Property: 06037C - FEMA DFIRM Flood data

Additional Panels in search area: Not Reported

NATIONAL WETLAND INVENTORY

NWI Quad at Target Property	NWI Electronic Data Coverage
LOS ANGELES	YES - refer to the Overview Map and Detail Map

HYDROGEOLOGIC INFORMATION

Hydrogeologic information obtained by installation of wells on a specific site can often be an indicator of groundwater flow direction in the immediate area. Such hydrogeologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Site-Specific Hydrogeological Data*:

Search Radius:	1.25 miles
Location Relative to TP:	1/2 - 1 Mile SSW
Site Name:	Van Der Horst Corporation Of America
Site EPA ID Number:	CAD020159166
Surficial Aquifer Flow Dir.:	VARIABLE. A FLOW TO THE S AND SE HAS BEEN IDENTIFIED DURING FORMER INVESTIGATIONS. MORE RECENT INVESTIGATIONS IDENTIFIED A FLOW TO THE E.
Measured Depth to Water:	28 feet to 38 feet.
Hydraulic Connection:	Aquifer interconnections exist within 2 miles of the site.
Sole Source Aquifer:	No information about a sole source aquifer is available
Data Quality:	Information based on site-specific subsurface investigations is documented in the CERCLIS investigation report(s)

AQUIFLOW®

Search Radius: 1.000 Mile.

EDR has developed the AQUIFLOW Information System to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted by environmental professionals to regulatory authorities at select sites and has extracted the date of the report, groundwater flow direction as determined hydrogeologically, and the depth to water table.

MAP ID	LOCATION FROM TP	GENERAL DIRECTION GROUNDWATER FLOW
1	1/2 - 1 Mile NE	Not Reported

* ©1996 Site--specific hydrogeological data gathered by CERCLIS Alerts, Inc., Bainbridge Island, WA. All rights reserved. All of the information and opinions presented are those of the cited EPA report(s), which were completed under a Comprehensive Environmental Response Compensation and Liability Information System (CERCLIS) investigation.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

MAP ID	LOCATION FROM TP	GENERAL DIRECTION GROUNDWATER FLOW
2	1/2 - 1 Mile ESE	Not Reported
3	1/2 - 1 Mile SE	Not Reported

For additional site information, refer to Physical Setting Source Map Findings.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW VELOCITY INFORMATION

Groundwater flow velocity information for a particular site is best determined by a qualified environmental professional using site specific geologic and soil strata data. If such data are not reasonably ascertainable, it may be necessary to rely on other sources of information, including geologic age identification, rock stratigraphic unit and soil characteristics data collected on nearby properties and regional soil information. In general, contaminant plumes move more quickly through sandy-gravelly types of soils than silty-clayey types of soils.

GEOLOGIC INFORMATION IN GENERAL AREA OF TARGET PROPERTY

Geologic information can be used by the environmental professional in forming an opinion about the relative speed at which contaminant migration may be occurring.

ROCK STRATIGRAPHIC UNIT

Era:	Cenozoic
System:	Quaternary
Series:	Quaternary
Code:	Q *(decoded above as Era, System & Series)*

GEOLOGIC AGE IDENTIFICATION

Category: Stratifed Sequence

Geologic Age and Rock Stratigraphic Unit Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - a digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps. The following information is based on Soil Conservation Service STATSGO data.

Soil Component Name: URBAN LAND

Soil Surface Texture: variable

Hydrologic Group: Not reported

Soil Drainage Class: Not reported

Hydric Status: Soil does not meet the requirements for a hydric soil.

Corrosion Potential - Uncoated Steel: Not Reported

Depth to Bedrock Min: > 10 inches

Depth to Bedrock Max: > 10 inches

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
	Boundary			Classification			
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil	Permeability Rate (in/hr)	Soil Reaction (pH)
1	0 inches	6 inches	variable	Not reported	Not reported	Max: 0.00 Min: 0.00	Max: 0.00 Min: 0.00

OTHER SOIL TYPES IN AREA

Based on Soil Conservation Service STATSGO data, the following additional subordinant soil types may appear within the general area of target property.

Soil Surface Textures:
sandy loam
gravelly - sandy loam
silt loam
clay
fine sand
gravelly - sand
sand
fine sandy loam

Surficial Soil Types:
sandy loam
gravelly - sandy loam
silt loam
clay
fine sand
gravelly - sand
sand
fine sandy loam

Shallow Soil Types:
fine sandy loam
gravelly - loam
sandy clay
sandy clay loam
clay
silty clay
sand

Deeper Soil Types:
gravelly - sandy loam
sandy loam
very gravelly - sandy loam
stratified
very fine sandy loam
weathered bedrock
sand
gravelly - fine sandy loam
silty clay loam
clay loam

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

LOCAL / REGIONAL WATER AGENCY RECORDS

EDR Local/Regional Water Agency records provide water well information to assist the environmental professional in assessing sources that may impact ground water flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

WELL SEARCH DISTANCE INFORMATION

DATABASE	SEARCH DISTANCE (miles)
Federal USGS	1.000
Federal FRDS PWS	Nearest PWS within 1 mile
State Database	1.000

FEDERAL USGS WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
No Wells Found		

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
No PWS System Found		

Note: PWS System location is not always the same as well location.

STATE DATABASE WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
No Wells Found		

OTHER STATE DATABASE INFORMATION

STATE OIL/GAS WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
A1	CAOG80000034745	1/8 - 1/4 Mile WNW
A2	CAOG80000034770	1/8 - 1/4 Mile WNW
B3	CAOG80000034474	1/2 - 1 Mile WSW
B4	CAOG80000034508	1/2 - 1 Mile WSW
B5	CAOG80000034415	1/2 - 1 Mile WSW
B6	CAOG80000034518	1/2 - 1 Mile WSW
B7	CAOG80000034500	1/2 - 1 Mile WSW
B8	CAOG80000034541	1/2 - 1 Mile West
B9	CAOG80000034400	1/2 - 1 Mile WSW
B10	CAOG80000034435	1/2 - 1 Mile WSW
B11	CAOG80000034390	1/2 - 1 Mile WSW
B12	CAOG80000034361	1/2 - 1 Mile WSW
C13	CAOG80000034559	1/2 - 1 Mile West
B14	CAOG80000034492	1/2 - 1 Mile WSW

STATE OIL/GAS WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
B15	CAOG80000034468	1/2 - 1 Mile WSW
C16	CAOG80000034530	1/2 - 1 Mile West
B17	CAOG80000034484	1/2 - 1 Mile WSW
B18	CAOG80000034434	1/2 - 1 Mile WSW
B19	CAOG80000034373	1/2 - 1 Mile WSW
B20	CAOG80000034414	1/2 - 1 Mile WSW
D21	CAOG80000034313	1/2 - 1 Mile WSW
B22	CAOG80000034505	1/2 - 1 Mile WSW
B23	CAOG80000034472	1/2 - 1 Mile WSW
B24	CAOG80000034453	1/2 - 1 Mile WSW
C25	CAOG80000034493	1/2 - 1 Mile WSW
C26	CAOG80000034470	1/2 - 1 Mile WSW
C27	CAOG80000034516	1/2 - 1 Mile West
D28	CAOG80000034358	1/2 - 1 Mile WSW
29	CAOG80000034119	1/2 - 1 Mile WSW
C30	CAOG80000034531	1/2 - 1 Mile West
D31	CAOG80000034410	1/2 - 1 Mile WSW
C32	CAOG80000034515	1/2 - 1 Mile West
D33	CAOG80000034437	1/2 - 1 Mile WSW
C34	CAOG80000034522	1/2 - 1 Mile West
C35	CAOG80000034510	1/2 - 1 Mile West
E36	CAOG80000034475	1/2 - 1 Mile WSW
C37	CAOG80000034504	1/2 - 1 Mile West
E38	CAOG80000034438	1/2 - 1 Mile WSW
D39	CAOG80000034309	1/2 - 1 Mile WSW
D40	CAOG80000034395	1/2 - 1 Mile WSW
D41	CAOG80000034263	1/2 - 1 Mile WSW
E42	CAOG80000034428	1/2 - 1 Mile WSW
D43	CAOG80000034339	1/2 - 1 Mile WSW
E44	CAOG80000034439	1/2 - 1 Mile WSW
E45	CAOG80000034533	1/2 - 1 Mile West
E46	CAOG80000034513	1/2 - 1 Mile West
E47	CAOG80000034452	1/2 - 1 Mile WSW
D48	CAOG80000034286	1/2 - 1 Mile WSW
E49	CAOG80000034489	1/2 - 1 Mile WSW
D50	CAOG80000034203	1/2 - 1 Mile WSW
D51	CAOG80000034328	1/2 - 1 Mile WSW
E52	CAOG80000034406	1/2 - 1 Mile WSW
D53	CAOG80000034239	1/2 - 1 Mile WSW
E54	CAOG80000034477	1/2 - 1 Mile WSW
E55	CAOG80000034363	1/2 - 1 Mile WSW
E56	CAOG80000034430	1/2 - 1 Mile WSW
E57	CAOG80000034367	1/2 - 1 Mile WSW
E58	CAOG80000034319	1/2 - 1 Mile WSW
E59	CAOG80000034495	1/2 - 1 Mile West
E60	CAOG80000034478	1/2 - 1 Mile WSW
F61	CAOG80000034269	1/2 - 1 Mile WSW
E62	CAOG80000034341	1/2 - 1 Mile WSW
F63	CAOG80000034310	1/2 - 1 Mile WSW
E64	CAOG80000034378	1/2 - 1 Mile WSW
E65	CAOG80000034501	1/2 - 1 Mile West
E66	CAOG80000034442	1/2 - 1 Mile WSW
E67	CAOG80000034483	1/2 - 1 Mile WSW
E68	CAOG80000034377	1/2 - 1 Mile WSW
F69	CAOG80000034353	1/2 - 1 Mile WSW
F70	CAOG80000034326	1/2 - 1 Mile WSW

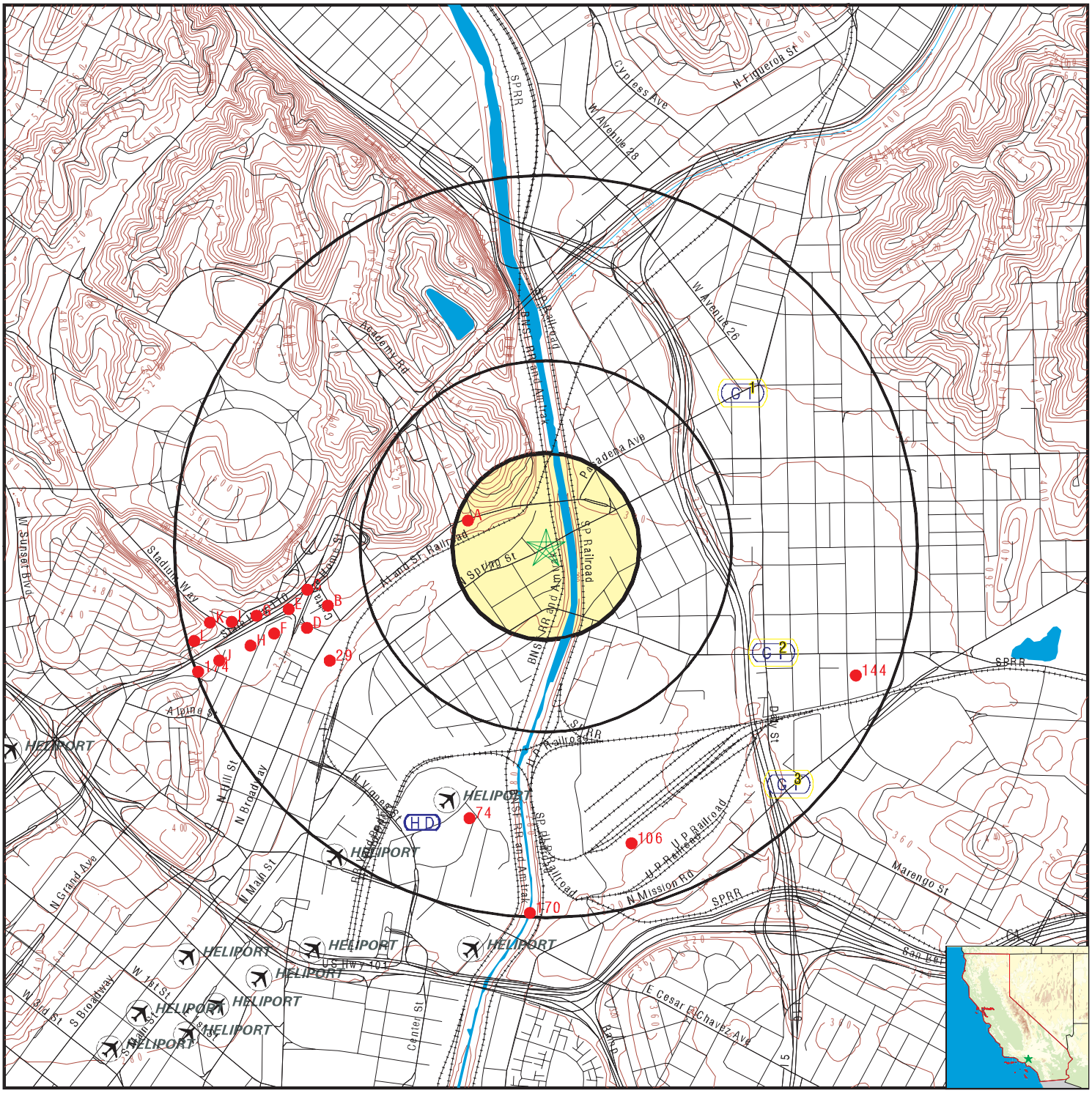
STATE OIL/GAS WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
E71	CAOG80000034450	1/2 - 1 Mile WSW
F72	CAOG80000034306	1/2 - 1 Mile WSW
F73	CAOG80000034279	1/2 - 1 Mile WSW
74	CAOG80000033389	1/2 - 1 Mile SSW
G75	CAOG80000034427	1/2 - 1 Mile WSW
G76	CAOG80000034491	1/2 - 1 Mile West
F77	CAOG80000034298	1/2 - 1 Mile WSW
G78	CAOG80000034462	1/2 - 1 Mile WSW
G79	CAOG80000034396	1/2 - 1 Mile WSW
G80	CAOG80000034443	1/2 - 1 Mile WSW
F81	CAOG80000034259	1/2 - 1 Mile WSW
G82	CAOG80000034424	1/2 - 1 Mile WSW
G83	CAOG80000034398	1/2 - 1 Mile WSW
F84	CAOG80000034245	1/2 - 1 Mile WSW
G85	CAOG80000034464	1/2 - 1 Mile WSW
F86	CAOG80000034342	1/2 - 1 Mile WSW
F87	CAOG80000034234	1/2 - 1 Mile WSW
G88	CAOG80000034370	1/2 - 1 Mile WSW
G89	CAOG80000034469	1/2 - 1 Mile WSW
F90	CAOG80000034214	1/2 - 1 Mile WSW
G91	CAOG80000034423	1/2 - 1 Mile WSW
F92	CAOG80000034248	1/2 - 1 Mile WSW
G93	CAOG80000034399	1/2 - 1 Mile WSW
H94	CAOG80000034167	1/2 - 1 Mile WSW
G95	CAOG80000034337	1/2 - 1 Mile WSW
G96	CAOG80000034308	1/2 - 1 Mile WSW
G97	CAOG80000034392	1/2 - 1 Mile WSW
G98	CAOG80000034433	1/2 - 1 Mile WSW
G99	CAOG80000034350	1/2 - 1 Mile WSW
H100	CAOG80000034210	1/2 - 1 Mile WSW
H101	CAOG80000034242	1/2 - 1 Mile WSW
G102	CAOG80000034312	1/2 - 1 Mile WSW
H103	CAOG80000034224	1/2 - 1 Mile WSW
G104	CAOG80000034382	1/2 - 1 Mile WSW
G105	CAOG80000034459	1/2 - 1 Mile WSW
106	CAOG80000033305	1/2 - 1 Mile SSE
G107	CAOG80000034325	1/2 - 1 Mile WSW
H108	CAOG80000034256	1/2 - 1 Mile WSW
H109	CAOG80000034150	1/2 - 1 Mile WSW
H110	CAOG80000034303	1/2 - 1 Mile WSW
G111	CAOG80000034436	1/2 - 1 Mile WSW
H112	CAOG80000034232	1/2 - 1 Mile WSW
I113	CAOG80000034343	1/2 - 1 Mile WSW
H114	CAOG80000034191	1/2 - 1 Mile WSW
I115	CAOG80000034393	1/2 - 1 Mile WSW
I116	CAOG80000034314	1/2 - 1 Mile WSW
H117	CAOG80000034179	1/2 - 1 Mile WSW
I118	CAOG80000034397	1/2 - 1 Mile WSW
I119	CAOG80000034487	1/2 - 1 Mile West
I120	CAOG80000034449	1/2 - 1 Mile WSW
I121	CAOG80000034276	1/2 - 1 Mile WSW
I122	CAOG80000034388	1/2 - 1 Mile WSW
H123	CAOG80000034243	1/2 - 1 Mile WSW
I124	CAOG80000034421	1/2 - 1 Mile WSW
H125	CAOG80000034146	1/2 - 1 Mile WSW
I126	CAOG80000034441	1/2 - 1 Mile WSW

STATE OIL/GAS WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
I127	CAOG80000034354	1/2 - 1 Mile WSW
I128	CAOG80000034260	1/2 - 1 Mile WSW
I129	CAOG80000034417	1/2 - 1 Mile WSW
I130	CAOG80000034220	1/2 - 1 Mile WSW
I131	CAOG80000034331	1/2 - 1 Mile WSW
H132	CAOG80000034101	1/2 - 1 Mile WSW
I133	CAOG80000034448	1/2 - 1 Mile West
I134	CAOG80000034362	1/2 - 1 Mile WSW
I135	CAOG80000034412	1/2 - 1 Mile WSW
I136	CAOG80000034257	1/2 - 1 Mile WSW
I137	CAOG80000034446	1/2 - 1 Mile West
I138	CAOG80000034455	1/2 - 1 Mile West
I139	CAOG80000034281	1/2 - 1 Mile WSW
I140	CAOG80000034425	1/2 - 1 Mile WSW
I141	CAOG80000034193	1/2 - 1 Mile WSW
J142	CAOG80000034136	1/2 - 1 Mile WSW
K143	CAOG80000034431	1/2 - 1 Mile WSW
144	CAOG80000034005	1/2 - 1 Mile ESE
I145	CAOG80000034320	1/2 - 1 Mile WSW
K146	CAOG80000034440	1/2 - 1 Mile West
J147	CAOG80000034212	1/2 - 1 Mile WSW
K148	CAOG80000034444	1/2 - 1 Mile West
J149	CAOG80000034064	1/2 - 1 Mile WSW
J150	CAOG80000034143	1/2 - 1 Mile WSW
K151	CAOG80000034404	1/2 - 1 Mile WSW
J152	CAOG80000034038	1/2 - 1 Mile WSW
J153	CAOG80000034173	1/2 - 1 Mile WSW
J154	CAOG80000034103	1/2 - 1 Mile WSW
K155	CAOG80000034289	1/2 - 1 Mile WSW
K156	CAOG80000034380	1/2 - 1 Mile WSW
J157	CAOG80000034080	1/2 - 1 Mile WSW
K158	CAOG80000034240	1/2 - 1 Mile WSW
K159	CAOG80000034247	1/2 - 1 Mile WSW
J160	CAOG80000034062	1/2 - 1 Mile WSW
L161	CAOG80000034235	1/2 - 1 Mile WSW
J162	CAOG80000034132	1/2 - 1 Mile WSW
L163	CAOG80000034187	1/2 - 1 Mile WSW
L164	CAOG80000034251	1/2 - 1 Mile WSW
L165	CAOG80000034222	1/2 - 1 Mile WSW
L166	CAOG80000034250	1/2 - 1 Mile WSW
L167	CAOG80000034190	1/2 - 1 Mile WSW
L168	CAOG80000034153	1/2 - 1 Mile WSW
L169	CAOG80000034262	1/2 - 1 Mile WSW
170	CAOG80000033277	1/2 - 1 Mile South
L171	CAOG80000034196	1/2 - 1 Mile WSW
L172	CAOG80000034379	1/2 - 1 Mile WSW
L173	CAOG80000034170	1/2 - 1 Mile WSW
174	CAOG80000034037	1/2 - 1 Mile WSW
L175	CAOG80000034292	1/2 - 1 Mile WSW

PHYSICAL SETTING SOURCE MAP - 3348112.2s



- County Boundary
- Major Roads
- Contour Lines
- Earthquake Fault Lines
- Airports
- Earthquake epicenter, Richter 5 or greater
- Water Wells
- Public Water Supply Wells
- Cluster of Multiple Icons

- Groundwater Flow Direction
- (GI) Indeterminate Groundwater Flow at Location
- (GV) Groundwater Flow Varies at Location
- (HD) Closest Hydrogeological Data
- Oil, gas or related wells

SITE NAME: Water Wheel	CLIENT: GeoSyntec Consultants
ADDRESS: 1745 North Spring Street Los Angeles CA 90012	CONTACT: J. S. Rowlands
LAT/LONG: 34.0702 / 118.2257	INQUIRY #: 3348112.2s DATE: June 19, 2012 6:48 pm

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GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID Direction Distance Elevation			Database	EDR ID Number
1 **NE** **1/2 - 1 Mile** **Higher**	Site ID: Groundwater Flow: Shallow Water Depth: Deep Water Depth: Average Water Depth: Date:	900570061 Not Reported 8.37 12 Not Reported 08/07/1996	**AQUIFLOW**	**55212**
2 **ESE** **1/2 - 1 Mile** **Higher**	Site ID: Groundwater Flow: Shallow Water Depth: Deep Water Depth: Average Water Depth: Date:	900310225 Not Reported Not Reported Not Reported 35 07/11/1991	**AQUIFLOW**	**69668**
3 **SE** **1/2 - 1 Mile** **Higher**	Site ID: Groundwater Flow: Shallow Water Depth: Deep Water Depth: Average Water Depth: Date:	900330089 Not Reported 38’8" 39’5" Not Reported 05/06/1992	**AQUIFLOW**	**38065**

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance

Database EDR ID Number

A1
WNW
1/8 - 1/4 Mile

OIL_GAS **CAOG80000034745**

Districtnu:	1	Apinumber:	03716588
Activewell:	N	Well type:	OG
Wellsymbol:	DH	Confidenti:	Not Reported
Operatorna:	Ventura Oil Co.		
Wellnumber:	1	Leasename:	Freight Depot
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Any Field		
Areaname:	Any Area		
Section :	22	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.070958		
Longitude8:	-118.229388		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	08760	Cacountyco:	037
Fieldcode:	000	Areacode:	00
Td:	0		
Site id:	CAOG80000034745		

A2
WNW
1/8 - 1/4 Mile

OIL_GAS **CAOG80000034770**

Districtnu:	1	Apinumber:	03700510
Activewell:	N	Well type:	OG
Wellsymbol:	DH	Confidenti:	Not Reported
Operatorna:	Chevron U.S.A. Inc.		
Wellnumber:	1	Leasename:	So. Pacific Core Hole
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Any Field		
Areaname:	Any Area		
Section :	22	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.071464		
Longitude8:	-118.229335		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	C5640	Cacountyco:	037
Fieldcode:	000	Areacode:	00
Td:	0		
Site id:	CAOG80000034770		

B3
WSW
1/2 - 1 Mile

OIL_GAS **CAOG80000034474**

Districtnu:	1	Apinumber:	03725915
Activewell:	N	Well type:	OG
Wellsymbol:	AP	Confidenti:	Not Reported
Operatorna:	Mericos Oil Co.		
Wellnumber:	1	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	22	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.067985		
Longitude8:	-118.235319		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	09615	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034474		

B4
WSW **OIL_GAS** **CAOG80000034508**
1/2 - 1 Mile

Districtnu:	1	Apinumber:	03718976
Activewell:	N	Well type:	OG
Wellsymbol:	AB	Confidenti:	Not Reported
Operatorna:	Kenneth & Katherine Manley		
Wellnumber:	1	Leasename:	Ed Wong
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	22	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.068388		
Longitude8:	-118.235571		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	M1400	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034508		

B5
WSW **OIL_GAS** **CAOG80000034415**
1/2 - 1 Mile

Districtnu:	1	Apinumber:	03723856
Activewell:	N	Well type:	OG
Wellsymbol:	AB	Confidenti:	Not Reported
Operatorna:	B. F. Breig		
Wellnumber:	3	Leasename:	Breig
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	22	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.067538		
Longitude8:	-118.235295		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	00560	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034415		

B6
WSW **OIL_GAS** **CAOG80000034518**
1/2 - 1 Mile

Districtnu:	1	Apinumber:	03718977
Activewell:	N	Well type:	OG
Wellsymbol:	AB	Confidenti:	Not Reported
Operatorna:	Kenneth & Katherine Manley		
Wellnumber:	3	Leasename:	Ed Wong
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	22	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.068489		
Longitude8:	-118.235675		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	M1400	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034518		

B7
WSW **OIL_GAS** **CAOG80000034500**
1/2 - 1 Mile

Districtnu:	1	Apinumber:	03723882
Activewell:	N	Well type:	OG
Wellsymbol:	AB	Confidenti:	Not Reported
Operatorna:	Kenneth & Katherine Manley		
Wellnumber:	2	Leasename:	Ed Wong
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	22	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.068265		
Longitude8:	-118.235723		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	M1400	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034500		

B8
West
1/2 - 1 Mile

OIL_GAS **CAOG80000034541**

Districtnu:	1	Apinumber:	03725916
Activewell:	N	Well type:	OG
Wellsymbol:	AP	Confidenti:	Not Reported
Operatorna:	Mericos Oil Co.		
Wellnumber:	2	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	22	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.068871		
Longitude8:	-118.23596		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	09615	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034541		

B9
WSW
1/2 - 1 Mile

OIL_GAS **CAOG80000034400**

Districtnu:	1	Apinumber:	03719093
Activewell:	N	Well type:	OG
Wellsymbol:	AB	Confidenti:	Not Reported
Operatorna:	C. C. Harris Oil Co.		
Wellnumber:	4	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	22	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.067453		
Longitude8:	-118.23563		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	01061	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034400		

B10
WSW **OIL_GAS** **CAOG80000034435**
1/2 - 1 Mile

Districtnu:	1	Apinumber:	03725571
Activewell:	N	Well type:	OG
Wellsymbol:	AP	Confidenti:	Not Reported
Operatorna:	Consolidated Crude Corp.		
Wellnumber:	2	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	22	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.067638		
Longitude8:	-118.235745		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	01816	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034435		

B11
WSW **OIL_GAS** **CAOG80000034390**
1/2 - 1 Mile

Districtnu:	1	Apinumber:	03719092
Activewell:	N	Well type:	OG
Wellsymbol:	AB	Confidenti:	Not Reported
Operatorna:	C. C. Harris Oil Co.		
Wellnumber:	3	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	22	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.067376		
Longitude8:	-118.235745		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	01061	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034390		

B12
WSW
1/2 - 1 Mile

OIL_GAS **CAOG80000034361**

Districtnu:	1	Apinumber:	03719091
Activewell:	N	Well type:	OG
Wellsymbol:	AB	Confidenti:	Not Reported
Operatorna:	C. C. Harris Oil Co.		
Wellnumber:	1	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	22	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.067169		
Longitude8:	-118.235695		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	01061	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034361		

C13
West
1/2 - 1 Mile

OIL_GAS **CAOG80000034559**

Districtnu:	1	Apinumber:	03725946
Activewell:	N	Well type:	OG
Wellsymbol:	AP	Confidenti:	Not Reported
Operatorna:	Nate Bray (G. N.)		
Wellnumber:	2	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	22	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.069033		
Longitude8:	-118.236326		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	06167	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034559		

B14
WSW
1/2 - 1 Mile

OIL_GAS **CAOG80000034492**

Districtnu:	1	Apinumber:	03719087
Activewell:	N	Well type:	OG
Wellsymbol:	AB	Confidenti:	Not Reported
Operatorna:	Nate Bray (G. N.)		
Wellnumber:	12	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	22	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.068175		
Longitude8:	-118.236142		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	06167	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034492		

B15
WSW
1/2 - 1 Mile

OIL_GAS **CAOG80000034468**

Districtnu:	1	Apinumber:	03719095
Activewell:	N	Well type:	OG
Wellsymbol:	AB	Confidenti:	Not Reported
Operatorna:	C. C. Harris Oil Co.		
Wellnumber:	6	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	22	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.067917		
Longitude8:	-118.236102		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	01061	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034468		

C16
West
1/2 - 1 Mile

OIL_GAS **CAOG80000034530**

Districtnu:	1	Apinumber:	03725945
Activewell:	N	Well type:	OG
Wellsymbol:	AP	Confidenti:	Not Reported
Operatorna:	Nate Bray (G. N.)		
Wellnumber:	1	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	22	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.068788		
Longitude8:	-118.236379		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	06167	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034530		

B17
WSW
1/2 - 1 Mile

OIL_GAS **CAOG80000034484**

Districtnu:	1	Apinumber:	03719096
Activewell:	N	Well type:	OG
Wellsymbol:	AB	Confidenti:	Not Reported
Operatorna:	C. C. Harris Oil Co.		
Wellnumber:	7	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	22	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.068058		
Longitude8:	-118.236224		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	01061	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034484		

B18
WSW **OIL_GAS** **CAOG80000034434**
1/2 - 1 Mile

Districtnu:	1	Apinumber:	03726136
Activewell:	N	Well type:	OG
Wellsymbol:	AP	Confidenti:	Not Reported
Operatorna:	Union Consolidated Crude Oil Co.		
Wellnumber:	9	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	22	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.067634		
Longitude8:	-118.236088		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	08640	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034434		

B19
WSW **OIL_GAS** **CAOG80000034373**
1/2 - 1 Mile

Districtnu:	1	Apinumber:	03725464
Activewell:	N	Well type:	OG
Wellsymbol:	AP	Confidenti:	Not Reported
Operatorna:	C. C. Harris Oil Co.		
Wellnumber:	2	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	22	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.067258		
Longitude8:	-118.235968		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	01061	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034373		

B20
WSW **OIL_GAS** **CAOG80000034414**
1/2 - 1 Mile

Districtnu:	1	Apinumber:	03719094
Activewell:	N	Well type:	OG
Wellsymbol:	AB	Confidenti:	Not Reported
Operatorna:	C. C. Harris Oil Co.		
Wellnumber:	5	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	22	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.067536		
Longitude8:	-118.236142		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	01061	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034414		

D21
WSW **OIL_GAS** **CAOG80000034313**
1/2 - 1 Mile

Districtnu:	1	Apinumber:	03725568
Activewell:	N	Well type:	OG
Wellsymbol:	AP	Confidenti:	Not Reported
Operatorna:	Consolidated Crude Corp.		
Wellnumber:	1	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	22	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.06697		
Longitude8:	-118.236044		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	01816	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034313		

B22
WSW **OIL_GAS** **CAOG80000034505**
1/2 - 1 Mile

Districtnu:	1	Apinumber:	03719088
Activewell:	N	Well type:	OG
Wellsymbol:	AB	Confidenti:	Not Reported
Operatorna:	Nate Bray (G. N.)		
Wellnumber:	13	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	22	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.068364		
Longitude8:	-118.236596		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	06167	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034505		

B23
WSW **OIL_GAS** **CAOG80000034472**
1/2 - 1 Mile

Districtnu:	1	Apinumber:	03719089
Activewell:	N	Well type:	OG
Wellsymbol:	AB	Confidenti:	Not Reported
Operatorna:	Nate Bray (G. N.)		
Wellnumber:	14	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	22	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.06797		
Longitude8:	-118.236552		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	06167	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034472		

B24
WSW **OIL_GAS** **CAOG80000034453**
1/2 - 1 Mile

Districtnu:	1	Apinumber:	03719102
Activewell:	N	Well type:	OG
Wellsymbol:	AB	Confidenti:	Not Reported
Operatorna:	C. C. Harris Oil Co.		
Wellnumber:	13	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	22	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.067792		
Longitude8:	-118.236642		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	01061	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034453		

C25
WSW **OIL_GAS** **CAOG80000034493**
1/2 - 1 Mile

Districtnu:	1	Apinumber:	03719105
Activewell:	N	Well type:	OG
Wellsymbol:	AB	Confidenti:	Not Reported
Operatorna:	C. C. Harris Oil Co.		
Wellnumber:	16	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	22	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.068181		
Longitude8:	-118.23677		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	01061	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034493		

C26
WSW
1/2 - 1 Mile

OIL_GAS **CAOG80000034470**

Districtnu:	1	Apinumber:	03719103
Activewell:	N	Well type:	OG
Wellsymbol:	AB	Confidenti:	Not Reported
Operatorna:	C. C. Harris Oil Co.		
Wellnumber:	14	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	22	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.067952		
Longitude8:	-118.236712		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	01061	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034470		

C27
West
1/2 - 1 Mile

OIL_GAS **CAOG80000034516**

Districtnu:	1	Apinumber:	03719104
Activewell:	N	Well type:	OG
Wellsymbol:	AB	Confidenti:	Not Reported
Operatorna:	C. C. Harris Oil Co.		
Wellnumber:	15	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	22	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.068481		
Longitude8:	-118.236914		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	01061	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034516		

D28
WSW **OIL_GAS** **CAOG80000034358**
1/2 - 1 Mile

Districtnu:	1	Apinumber:	03719195
Activewell:	N	Well type:	OG
Wellsymbol:	AB	Confidenti:	Not Reported
Operatorna:	E. A. Doran Oil Co.		
Wellnumber:	4	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	22	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.067158		
Longitude8:	-118.236557		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	02333	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034358		

29
WSW **OIL_GAS** **CAOG80000034119**
1/2 - 1 Mile

Districtnu:	1	Apinumber:	03716580
Activewell:	N	Well type:	OG
Wellsymbol:	AB	Confidenti:	Not Reported
Operatorna:	Paul F. McKenzie		
Wellnumber:	T-2	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	22	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.065734		
Longitude8:	-118.235848		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	06695	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034119		

C30
West
1/2 - 1 Mile

OIL_GAS **CAOG80000034531**

Districtnu:	1	Apinumber:	03719112
Activewell:	N	Well type:	OG
Wellsymbol:	AB	Confidenti:	Not Reported
Operatorna:	C. C. Harris Oil Co.		
Wellnumber:	24	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	22	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.068798		
Longitude8:	-118.237105		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	01061	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034531		

D31
WSW
1/2 - 1 Mile

OIL_GAS **CAOG80000034410**

Districtnu:	1	Apinumber:	03719101
Activewell:	N	Well type:	OG
Wellsymbol:	AB	Confidenti:	Not Reported
Operatorna:	C. C. Harris Oil Co.		
Wellnumber:	12	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	22	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.067496		
Longitude8:	-118.236769		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	01061	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034410		

C32
West
1/2 - 1 Mile

OIL_GAS **CAOG80000034515**

Districtnu:	1	Apinumber:	03719110
Activewell:	N	Well type:	OG
Wellsymbol:	AB	Confidenti:	Not Reported
Operatorna:	C. C. Harris Oil Co.		
Wellnumber:	22	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	22	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.06846		
Longitude8:	-118.237087		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	01061	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034515		

D33
WSW
1/2 - 1 Mile

OIL_GAS **CAOG80000034437**

Districtnu:	1	Apinumber:	03719108
Activewell:	N	Well type:	OG
Wellsymbol:	AB	Confidenti:	Not Reported
Operatorna:	C. C. Harris Oil Co.		
Wellnumber:	19	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	22	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.067644		
Longitude8:	-118.236868		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	01061	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034437		

C34
West
1/2 - 1 Mile

OIL_GAS **CAOG80000034522**

Districtnu:	1	Apinumber:	03719111
Activewell:	N	Well type:	OG
Wellsymbol:	AB	Confidenti:	Not Reported
Operatorna:	C. C. Harris Oil Co.		
Wellnumber:	23	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	22	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.068671		
Longitude8:	-118.237148		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	01061	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034522		

C35
West
1/2 - 1 Mile

OIL_GAS **CAOG80000034510**

Districtnu:	1	Apinumber:	03719086
Activewell:	N	Well type:	OG
Wellsymbol:	AB	Confidenti:	Not Reported
Operatorna:	Nate Bray (G. N.)		
Wellnumber:	11	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	22	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.068417		
Longitude8:	-118.237228		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	06167	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034510		

E36
WSW
1/2 - 1 Mile

OIL_GAS **CAOG80000034475**

Districtnu:	1	Apinumber:	03719109
Activewell:	N	Well type:	OG
Wellsymbol:	AB	Confidenti:	Not Reported
Operatorna:	C. C. Harris Oil Co.		
Wellnumber:	21	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	22	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.06799		
Longitude8:	-118.237163		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	01061	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034475		

C37
West
1/2 - 1 Mile

OIL_GAS **CAOG80000034504**

Districtnu:	1	Apinumber:	03719159
Activewell:	N	Well type:	OG
Wellsymbol:	AB	Confidenti:	Not Reported
Operatorna:	C. C. Harris Oil Co.		
Wellnumber:	121	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	22	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.068328		
Longitude8:	-118.237323		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	01061	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034504		

E38
WSW **OIL_GAS** **CAOG80000034438**
1/2 - 1 Mile

Districtnu:	1	Apinumber:	03725573
Activewell:	N	Well type:	OG
Wellsymbol:	AP	Confidenti:	Not Reported
Operatorna:	Consolidated Crude Corp.		
Wellnumber:	3	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	22	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.067647		
Longitude8:	-118.237175		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	01816	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034438		

D39
WSW **OIL_GAS** **CAOG80000034309**
1/2 - 1 Mile

Districtnu:	1	Apinumber:	03719097
Activewell:	N	Well type:	OG
Wellsymbol:	AB	Confidenti:	Not Reported
Operatorna:	C. C. Harris Oil Co.		
Wellnumber:	8	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	22	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.06692		
Longitude8:	-118.236941		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	01061	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034309		

D40
WSW **OIL_GAS** **CAOG80000034395**
1/2 - 1 Mile

Districtnu:	1	Apinumber:	03719100
Activewell:	N	Well type:	OG
Wellsymbol:	AB	Confidenti:	Not Reported
Operatorna:	C. C. Harris Oil Co.		
Wellnumber:	11	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	22	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.067419		
Longitude8:	-118.237157		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	01061	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034395		

D41
WSW **OIL_GAS** **CAOG80000034263**
1/2 - 1 Mile

Districtnu:	1	Apinumber:	03723854
Activewell:	N	Well type:	OG
Wellsymbol:	AB	Confidenti:	Not Reported
Operatorna:	Victor Bavario		
Wellnumber:	1	Leasename:	Scott
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	22	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.066719		
Longitude8:	-118.236908		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	08793	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034263		

E42
WSW
1/2 - 1 Mile

OIL_GAS **CAOG80000034428**

Districtnu:	1	Apinumber:	03725575
Activewell:	N	Well type:	OG
Wellsymbol:	AP	Confidenti:	Not Reported
Operatorna:	Consolidated Crude Corp.		
Wellnumber:	6	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	22	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.06761		
Longitude8:	-118.23728		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	01816	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034428		

D43
WSW
1/2 - 1 Mile

OIL_GAS **CAOG80000034339**

Districtnu:	1	Apinumber:	03719099
Activewell:	N	Well type:	OG
Wellsymbol:	AB	Confidenti:	Not Reported
Operatorna:	C. C. Harris Oil Co.		
Wellnumber:	10	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	22	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.067067		
Longitude8:	-118.237159		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	01061	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034339		

E44
WSW
1/2 - 1 Mile

OIL_GAS **CAOG80000034439**

Districtnu:	1	Apinumber:	03725570
Activewell:	N	Well type:	OG
Wellsymbol:	AP	Confidenti:	Not Reported
Operatorna:	Consolidated Crude Corp.		
Wellnumber:	4	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	22	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.067649		
Longitude8:	-118.237399		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	01816	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034439		

E45
West
1/2 - 1 Mile

OIL_GAS **CAOG80000034533**

Districtnu:	1	Apinumber:	03725947
Activewell:	N	Well type:	OG
Wellsymbol:	AP	Confidenti:	Not Reported
Operatorna:	Nettleton & Kellerman		
Wellnumber:	1	Leasename:	Curtis
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	22	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.068805		
Longitude8:	-118.237708		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	06221	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034533		

E46
West
1/2 - 1 Mile

OIL_GAS **CAOG80000034513**

Districtnu:	1	Apinumber:	03725948
Activewell:	N	Well type:	OG
Wellsymbol:	AP	Confidenti:	Not Reported
Operatorna:	Nettleton & Kellerman		
Wellnumber:	2	Leasename:	Curtis
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	22	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.06845		
Longitude8:	-118.237664		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	06221	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034513		

E47
WSW
1/2 - 1 Mile

OIL_GAS **CAOG80000034452**

Districtnu:	1	Apinumber:	03719114
Activewell:	N	Well type:	OG
Wellsymbol:	AB	Confidenti:	Not Reported
Operatorna:	C. C. Harris Oil Co.		
Wellnumber:	26	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	22	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.06779		
Longitude8:	-118.237505		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	01061	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034452		

D48
WSW **OIL_GAS** **CAOG80000034286**
1/2 - 1 Mile

Districtnu:	1	Apinumber:	03719098
Activewell:	N	Well type:	OG
Wellsymbol:	AB	Confidenti:	Not Reported
Operatorna:	C. C. Harris Oil Co.		
Wellnumber:	9	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	22	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.066818		
Longitude8:	-118.237156		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	01061	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034286		

E49
WSW **OIL_GAS** **CAOG80000034489**
1/2 - 1 Mile

Districtnu:	1	Apinumber:	03719119
Activewell:	N	Well type:	OG
Wellsymbol:	AB	Confidenti:	Not Reported
Operatorna:	C. C. Harris Oil Co.		
Wellnumber:	31	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	22	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.068107		
Longitude8:	-118.237628		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	01061	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034489		

D50
WSW **OIL_GAS** **CAOG80000034203**
1/2 - 1 Mile

Districtnu:	1	Apinumber:	03719197
Activewell:	N	Well type:	OG
Wellsymbol:	AB	Confidenti:	Not Reported
Operatorna:	E. A. Doran Oil Co.		
Wellnumber:	5-1	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	22	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.066367		
Longitude8:	-118.236993		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	02333	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034203		

D51
WSW **OIL_GAS** **CAOG80000034328**
1/2 - 1 Mile

Districtnu:	1	Apinumber:	03719194
Activewell:	N	Well type:	OG
Wellsymbol:	AB	Confidenti:	Not Reported
Operatorna:	E. A. Doran Oil Co.		
Wellnumber:	3	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	22	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.067037		
Longitude8:	-118.237316		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	02333	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034328		

E52
WSW
1/2 - 1 Mile

OIL_GAS **CAOG80000034406**

Districtnu:	1	Apinumber:	03725569
Activewell:	N	Well type:	OG
Wellsymbol:	AP	Confidenti:	Not Reported
Operatorna:	Consolidated Crude Corp.		
Wellnumber:	5	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	22	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.067484		
Longitude8:	-118.2375		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	01816	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034406		

D53
WSW
1/2 - 1 Mile

OIL_GAS **CAOG80000034239**

Districtnu:	1	Apinumber:	03719085
Activewell:	N	Well type:	OG
Wellsymbol:	AB	Confidenti:	Not Reported
Operatorna:	Nate Bray (G. N.)		
Wellnumber:	10	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	22	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.06656		
Longitude8:	-118.237142		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	06167	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034239		

E54
WSW
1/2 - 1 Mile

OIL_GAS **CAOG80000034477**

Districtnu:	1	Apinumber:	03719118
Activewell:	N	Well type:	OG
Wellsymbol:	AB	Confidenti:	Not Reported
Operatorna:	C. C. Harris Oil Co.		
Wellnumber:	30	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	22	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.068005		
Longitude8:	-118.237744		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	01061	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034477		

E55
WSW
1/2 - 1 Mile

OIL_GAS **CAOG80000034363**

Districtnu:	1	Apinumber:	03719191
Activewell:	N	Well type:	OG
Wellsymbol:	AB	Confidenti:	Not Reported
Operatorna:	E. A. Doran Oil Co.		
Wellnumber:	1	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	22	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.067181		
Longitude8:	-118.23753		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	02333	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034363		

E56
WSW
1/2 - 1 Mile

OIL_GAS **CAOG80000034430**

Districtnu:	1	Apinumber:	03719117
Activewell:	N	Well type:	OG
Wellsymbol:	AB	Confidenti:	Not Reported
Operatorna:	C. C. Harris Oil Co.		
Wellnumber:	29	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	22	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.067624		
Longitude8:	-118.237793		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	01061	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034430		

E57
WSW
1/2 - 1 Mile

OIL_GAS **CAOG80000034367**

Districtnu:	1	Apinumber:	03725616
Activewell:	N	Well type:	OG
Wellsymbol:	AP	Confidenti:	Not Reported
Operatorna:	E. A. Doran Oil Co.		
Wellnumber:	4	Leasename:	Botiller
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	22	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.067213		
Longitude8:	-118.237665		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	02333	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034367		

E58
WSW **OIL_GAS** **CAOG80000034319**
1/2 - 1 Mile

Districtnu:	1	Apinumber:	03725617
Activewell:	N	Well type:	OG
Wellsymbol:	AP	Confidenti:	Not Reported
Operatorna:	E. A. Doran Oil Co.		
Wellnumber:	1	Leasename:	Botiller
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	22	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.066978		
Longitude8:	-118.237592		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	02333	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034319		

E59
West **OIL_GAS** **CAOG80000034495**
1/2 - 1 Mile

Districtnu:	1	Apinumber:	03719124
Activewell:	N	Well type:	OG
Wellsymbol:	AB	Confidenti:	Not Reported
Operatorna:	C. C. Harris Oil Co.		
Wellnumber:	36	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	22	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.068195		
Longitude8:	-118.237988		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	01061	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034495		

E60
WSW **OIL_GAS** **CAOG80000034478**
1/2 - 1 Mile

Districtnu:	1	Apinumber:	03719090
Activewell:	N	Well type:	OG
Wellsymbol:	AB	Confidenti:	Not Reported
Operatorna:	Nate Bray (G. N.)		
Wellnumber:	15	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	22	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.068011		
Longitude8:	-118.237982		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	06167	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034478		

F61
WSW **OIL_GAS** **CAOG80000034269**
1/2 - 1 Mile

Districtnu:	1	Apinumber:	03719193
Activewell:	N	Well type:	OG
Wellsymbol:	AB	Confidenti:	Not Reported
Operatorna:	E. A. Doran Oil Co.		
Wellnumber:	2	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	22	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.066757		
Longitude8:	-118.237737		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	02333	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034269		

E62
WSW
1/2 - 1 Mile

OIL_GAS **CAOG80000034341**

Districtnu:	1	Apinumber:	03719113
Activewell:	N	Well type:	OG
Wellsymbol:	AB	Confidenti:	Not Reported
Operatorna:	C. C. Harris Oil Co.		
Wellnumber:	25	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	22	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.067078		
Longitude8:	-118.237866		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	01061	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034341		

F63
WSW
1/2 - 1 Mile

OIL_GAS **CAOG80000034310**

Districtnu:	1	Apinumber:	03719106
Activewell:	N	Well type:	OG
Wellsymbol:	AB	Confidenti:	Not Reported
Operatorna:	C. C. Harris Oil Co.		
Wellnumber:	17	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	22	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.066922		
Longitude8:	-118.237825		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	01061	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034310		

E64
WSW
1/2 - 1 Mile

OIL_GAS **CAOG80000034378**

Districtnu:	1	Apinumber:	03719115
Activewell:	N	Well type:	OG
Wellsymbol:	AB	Confidenti:	Not Reported
Operatorna:	C. C. Harris Oil Co.		
Wellnumber:	27	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	22	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.067281		
Longitude8:	-118.237974		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	01061	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034378		

E65
West
1/2 - 1 Mile

OIL_GAS **CAOG80000034501**

Districtnu:	1	Apinumber:	03725949
Activewell:	N	Well type:	OG
Wellsymbol:	AP	Confidenti:	Not Reported
Operatorna:	Bill Nye Oil Co.		
Wellnumber:	5	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	22	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.068281		
Longitude8:	-118.23827		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	09533	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034501		

E66
WSW
1/2 - 1 Mile

OIL_GAS **CAOG80000034442**

Districtnu:	1	Apinumber:	03725574
Activewell:	N	Well type:	OG
Wellsymbol:	AP	Confidenti:	Not Reported
Operatorna:	Consolidated Crude Corp.		
Wellnumber:	7	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	22	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.067671		
Longitude8:	-118.238202		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	01816	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034442		

E67
WSW
1/2 - 1 Mile

OIL_GAS **CAOG80000034483**

Districtnu:	1	Apinumber:	03719166
Activewell:	N	Well type:	OG
Wellsymbol:	AB	Confidenti:	Not Reported
Operatorna:	State of California		
Wellnumber:	GAS WELL	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	22	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.06805		
Longitude8:	-118.238334		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	08074	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034483		

E68
WSW **OIL_GAS** **CAOG80000034377**
1/2 - 1 Mile

Districtnu:	1	Apinumber:	03719152
Activewell:	N	Well type:	OG
Wellsymbol:	AB	Confidenti:	Not Reported
Operatorna:	C. C. Harris Oil Co.		
Wellnumber:	82	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	21	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.06728		
Longitude8:	-118.238214		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	01061	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034377		

F69
WSW **OIL_GAS** **CAOG80000034353**
1/2 - 1 Mile

Districtnu:	1	Apinumber:	03719116
Activewell:	N	Well type:	OG
Wellsymbol:	AB	Confidenti:	Not Reported
Operatorna:	C. C. Harris Oil Co.		
Wellnumber:	28	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	22	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.067124		
Longitude8:	-118.238179		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	01061	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034353		

F70
WSW
1/2 - 1 Mile

OIL_GAS **CAOG80000034326**

Districtnu:	1	Apinumber:	03719182
Activewell:	N	Well type:	OG
Wellsymbol:	AB	Confidenti:	Not Reported
Operatorna:	E. A. Doran Oil Co.		
Wellnumber:	19	Leasename:	Botiller
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	22	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.067031		
Longitude8:	-118.238216		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	02333	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034326		

E71
WSW
1/2 - 1 Mile

OIL_GAS **CAOG80000034450**

Districtnu:	1	Apinumber:	03725647
Activewell:	N	Well type:	OG
Wellsymbol:	AP	Confidenti:	Not Reported
Operatorna:	Geo. Geigrich		
Wellnumber:	2	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	22	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.067762		
Longitude8:	-118.238484		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	09571	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034450		

F72
WSW
1/2 - 1 Mile

OIL_GAS **CAOG80000034306**

Districtnu:	1	Apinumber:	03719183
Activewell:	N	Well type:	OG
Wellsymbol:	AB	Confidenti:	Not Reported
Operatorna:	E. A. Doran Oil Co.		
Wellnumber:	30	Leasename:	Botiller
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	22	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.066899		
Longitude8:	-118.238243		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	02333	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034306		

F73
WSW
1/2 - 1 Mile

OIL_GAS **CAOG80000034279**

Districtnu:	1	Apinumber:	03723867
Activewell:	N	Well type:	OG
Wellsymbol:	AB	Confidenti:	Not Reported
Operatorna:	Lee Westlake		
Wellnumber:	2	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	22	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.066791		
Longitude8:	-118.238249		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	05268	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034279		

74
SSW
1/2 - 1 Mile

OIL_GAS **CAOG80000033389**

Districtnu:	1	Apinumber:	03720503
Activewell:	N	Well type:	OG
Wellsymbol:	DH	Confidenti:	Not Reported
Operatorna:	Chevron U.S.A. Inc.		
Wellnumber:	1	Leasename:	Miller Corehole
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Any Field		
Areaname:	Any Area		
Section :	27	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.059577		
Longitude8:	-118.229287		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	C5640	Cacountyco:	037
Fieldcode:	000	Areacode:	00
Td:	0		
Site id:	CAOG80000033389		

G75
WSW
1/2 - 1 Mile

OIL_GAS **CAOG80000034427**

Districtnu:	1	Apinumber:	03719129
Activewell:	N	Well type:	OG
Wellsymbol:	AB	Confidenti:	Not Reported
Operatorna:	C. C. Harris Oil Co.		
Wellnumber:	42	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	22	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.067608		
Longitude8:	-118.238651		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	01061	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034427		

G76
West
1/2 - 1 Mile

OIL_GAS **CAOG80000034491**

Districtnu:	1	Apinumber:	03725646
Activewell:	N	Well type:	OG
Wellsymbol:	AP	Confidenti:	Not Reported
Operatorna:	Geo. Geigrich		
Wellnumber:	1	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	22	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.068166		
Longitude8:	-118.238833		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	09571	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034491		

F77
WSW
1/2 - 1 Mile

OIL_GAS **CAOG80000034298**

Districtnu:	1	Apinumber:	03723866
Activewell:	N	Well type:	OG
Wellsymbol:	AB	Confidenti:	Not Reported
Operatorna:	Lee Westlake		
Wellnumber:	1	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Any Field		
Areaname:	Any Area		
Section :	22	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.066864		
Longitude8:	-118.238566		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	05268	Cacountyco:	037
Fieldcode:	000	Areacode:	00
Td:	0		
Site id:	CAOG80000034298		

G78
WSW **OIL_GAS** **CAOG80000034462**
1/2 - 1 Mile

Districtnu:	1	Apinumber:	03725572
Activewell:	N	Well type:	OG
Wellsymbol:	AP	Confidenti:	Not Reported
Operatorna:	Consolidated Crude Corp.		
Wellnumber:	10	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	22	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.067852		
Longitude8:	-118.238903		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	01816	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034462		

G79
WSW **OIL_GAS** **CAOG80000034396**
1/2 - 1 Mile

Districtnu:	1	Apinumber:	03719127
Activewell:	N	Well type:	OG
Wellsymbol:	AB	Confidenti:	Not Reported
Operatorna:	C. C. Harris Oil Co.		
Wellnumber:	40	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	22	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.067444		
Longitude8:	-118.238835		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	01061	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034396		

G80
WSW **OIL_GAS** **CAOG80000034443**
1/2 - 1 Mile

Districtnu:	1	Apinumber:	03719120
Activewell:	N	Well type:	OG
Wellsymbol:	AB	Confidenti:	Not Reported
Operatorna:	C. C. Harris Oil Co.		
Wellnumber:	32	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	22	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.067681		
Longitude8:	-118.238935		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	01061	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034443		

F81
WSW **OIL_GAS** **CAOG80000034259**
1/2 - 1 Mile

Districtnu:	1	Apinumber:	03719176
Activewell:	N	Well type:	OG
Wellsymbol:	AB	Confidenti:	Not Reported
Operatorna:	Thomas F. Joyce		
Wellnumber:	1	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	22	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.066708		
Longitude8:	-118.238641		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	08427	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034259		

G82
WSW **OIL_GAS** **CAOG80000034424**
1/2 - 1 Mile

Districtnu:	1	Apinumber:	03719121
Activewell:	N	Well type:	OG
Wellsymbol:	AB	Confidenti:	Not Reported
Operatorna:	C. C. Harris Oil Co.		
Wellnumber:	33	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	21	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.067577		
Longitude8:	-118.238964		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	01061	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034424		

G83
WSW **OIL_GAS** **CAOG80000034398**
1/2 - 1 Mile

Districtnu:	1	Apinumber:	03719128
Activewell:	N	Well type:	OG
Wellsymbol:	AB	Confidenti:	Not Reported
Operatorna:	C. C. Harris Oil Co.		
Wellnumber:	41	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	22	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.067449		
Longitude8:	-118.238966		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	01061	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034398		

F84
WSW **OIL_GAS** **CAOG80000034245**
1/2 - 1 Mile

Districtnu:	1	Apinumber:	03719178
Activewell:	N	Well type:	OG
Wellsymbol:	AB	Confidenti:	Not Reported
Operatorna:	Thomas F. Joyce		
Wellnumber:	3	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	22	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.066615		
Longitude8:	-118.238694		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	08427	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034245		

G85
WSW **OIL_GAS** **CAOG80000034464**
1/2 - 1 Mile

Districtnu:	1	Apinumber:	03719123
Activewell:	N	Well type:	OG
Wellsymbol:	AB	Confidenti:	Not Reported
Operatorna:	C. C. Harris Oil Co.		
Wellnumber:	35	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	22	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.067887		
Longitude8:	-118.239157		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	01061	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034464		

F86
WSW
1/2 - 1 Mile

OIL_GAS **CAOG80000034342**

Districtnu:	1	Apinumber:	03719126
Activewell:	N	Well type:	OG
Wellsymbol:	AB	Confidenti:	Not Reported
Operatorna:	C. C. Harris Oil Co.		
Wellnumber:	39	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	22	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.06708		
Longitude8:	-118.238947		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	01061	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034342		

F87
WSW
1/2 - 1 Mile

OIL_GAS **CAOG80000034234**

Districtnu:	1	Apinumber:	03719179
Activewell:	N	Well type:	OG
Wellsymbol:	AB	Confidenti:	Not Reported
Operatorna:	Thomas F. Joyce		
Wellnumber:	4	Leasename:	Joyce
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	22	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.066518		
Longitude8:	-118.238747		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	08427	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034234		

G88
WSW **OIL_GAS** **CAOG80000034370**
1/2 - 1 Mile

Districtnu:	1	Apinumber:	03719134
Activewell:	N	Well type:	OG
Wellsymbol:	AB	Confidenti:	Not Reported
Operatorna:	C. C. Harris Oil Co.		
Wellnumber:	49	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	22	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.06724		
Longitude8:	-118.23903		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	01061	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034370		

G89
WSW **OIL_GAS** **CAOG80000034469**
1/2 - 1 Mile

Districtnu:	1	Apinumber:	03726054
Activewell:	N	Well type:	OG
Wellsymbol:	AP	Confidenti:	Not Reported
Operatorna:	Rommell Oil Co.		
Wellnumber:	1	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	22	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.067944		
Longitude8:	-118.239291		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	09641	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034469		

F90
WSW
1/2 - 1 Mile

OIL_GAS **CAOG80000034214**

Districtnu:	1	Apinumber:	03719180
Activewell:	N	Well type:	OG
Wellsymbol:	AB	Confidenti:	Not Reported
Operatorna:	Thomas F. Joyce		
Wellnumber:	5	Leasename:	Joyce
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	22	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.066407		
Longitude8:	-118.238795		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	08427	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034214		

G91
WSW
1/2 - 1 Mile

OIL_GAS **CAOG80000034423**

Districtnu:	1	Apinumber:	03725477
Activewell:	N	Well type:	OG
Wellsymbol:	AP	Confidenti:	Not Reported
Operatorna:	C. C. Harris Oil Co.		
Wellnumber:	58	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	22	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.067568		
Longitude8:	-118.239218		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	01061	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034423		

F92
WSW **OIL_GAS** **CAOG80000034248**
1/2 - 1 Mile

Districtnu:	1	Apinumber:	03719177
Activewell:	N	Well type:	OG
Wellsymbol:	AB	Confidenti:	Not Reported
Operatorna:	Thomas F. Joyce		
Wellnumber:	2	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	22	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.066639		
Longitude8:	-118.239071		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	08427	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034248		

G93
WSW **OIL_GAS** **CAOG80000034399**
1/2 - 1 Mile

Districtnu:	1	Apinumber:	03723884
Activewell:	N	Well type:	OG
Wellsymbol:	AB	Confidenti:	Not Reported
Operatorna:	Kenneth & Katherine Manley		
Wellnumber:	2	Leasename:	Lapp
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	22	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.06745		
Longitude8:	-118.239363		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	M1400	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034399		

H94
WSW **OIL_GAS** **CAOG80000034167**
1/2 - 1 Mile

Districtnu:	1	Apinumber:	03719186
Activewell:	N	Well type:	OG
Wellsymbol:	AB	Confidenti:	Not Reported
Operatorna:	E. A. Doran Oil Co.		
Wellnumber:	1	Leasename:	Murrieta
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	21	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.066096		
Longitude8:	-118.238881		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	02333	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034167		

G95
WSW **OIL_GAS** **CAOG80000034337**
1/2 - 1 Mile

Districtnu:	1	Apinumber:	03725440
Activewell:	N	Well type:	OG
Wellsymbol:	AP	Confidenti:	Not Reported
Operatorna:	C. C. Harris Oil Co.		
Wellnumber:	43	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	22	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.067063		
Longitude8:	-118.239273		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	01061	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034337		

G96
WSW **OIL_GAS** **CAOG80000034308**
1/2 - 1 Mile

Districtnu:	1	Apinumber:	03719125
Activewell:	N	Well type:	OG
Wellsymbol:	AB	Confidenti:	Not Reported
Operatorna:	C. C. Harris Oil Co.		
Wellnumber:	38	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	22	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.066918		
Longitude8:	-118.239273		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	01061	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034308		

G97
WSW **OIL_GAS** **CAOG80000034392**
1/2 - 1 Mile

Districtnu:	1	Apinumber:	03719140
Activewell:	N	Well type:	OG
Wellsymbol:	AB	Confidenti:	Not Reported
Operatorna:	C. C. Harris Oil Co.		
Wellnumber:	55	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	21	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.067393		
Longitude8:	-118.239512		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	01061	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034392		

G98
WSW **OIL_GAS** **CAOG80000034433**
1/2 - 1 Mile

Districtnu:	1	Apinumber:	03725478
Activewell:	N	Well type:	OG
Wellsymbol:	AP	Confidenti:	Not Reported
Operatorna:	C. C. Harris Oil Co.		
Wellnumber:	57	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	21	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.06763		
Longitude8:	-118.239622		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	01061	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034433		

G99
WSW **OIL_GAS** **CAOG80000034350**
1/2 - 1 Mile

Districtnu:	1	Apinumber:	03725480
Activewell:	N	Well type:	OG
Wellsymbol:	AP	Confidenti:	Not Reported
Operatorna:	C. C. Harris Oil Co.		
Wellnumber:	60	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	21	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.06711		
Longitude8:	-118.239482		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	01061	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034350		

H100
WSW
1/2 - 1 Mile

OIL_GAS **CAOG80000034210**

Districtnu:	1	Apinumber:	03723871
Activewell:	N	Well type:	OG
Wellsymbol:	AB	Confidenti:	Not Reported
Operatorna:	H. Rogalske		
Wellnumber:	1	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	22	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.066399		
Longitude8:	-118.23923		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	03708	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034210		

H101
WSW
1/2 - 1 Mile

OIL_GAS **CAOG80000034242**

Districtnu:	1	Apinumber:	03725741
Activewell:	N	Well type:	OG
Wellsymbol:	AP	Confidenti:	Not Reported
Operatorna:	Joe Gellen		
Wellnumber:	1	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	22	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.066566		
Longitude8:	-118.239367		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	09593	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034242		

G102
WSW
1/2 - 1 Mile

OIL_GAS **CAOG80000034312**

Districtnu:	1	Apinumber:	03719133
Activewell:	N	Well type:	OG
Wellsymbol:	AB	Confidenti:	Not Reported
Operatorna:	C. C. Harris Oil Co.		
Wellnumber:	48	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	21	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.066956		
Longitude8:	-118.239547		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	01061	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034312		

H103
WSW
1/2 - 1 Mile

OIL_GAS **CAOG80000034224**

Districtnu:	1	Apinumber:	03723872
Activewell:	N	Well type:	OG
Wellsymbol:	AB	Confidenti:	Not Reported
Operatorna:	H. Rogalske		
Wellnumber:	2	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	21	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.066454		
Longitude8:	-118.239427		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	03708	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034224		

G104
WSW
1/2 - 1 Mile

OIL_GAS **CAOG80000034382**

Districtnu:	1	Apinumber:	03725479
Activewell:	N	Well type:	OG
Wellsymbol:	AP	Confidenti:	Not Reported
Operatorna:	C. C. Harris Oil Co.		
Wellnumber:	59	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	21	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.067303		
Longitude8:	-118.239751		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	01061	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034382		

G105
WSW
1/2 - 1 Mile

OIL_GAS **CAOG80000034459**

Districtnu:	1	Apinumber:	03725950
Activewell:	N	Well type:	OG
Wellsymbol:	AP	Confidenti:	Not Reported
Operatorna:	Bill Nye Oil Co.		
Wellnumber:	5	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	21	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.067844		
Longitude8:	-118.239899		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	09533	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034459		

106
SSE **OIL_GAS** **CAOG80000033305**
1/2 - 1 Mile

Districtnu:	1	Apinumber:	03705144
Activewell:	N	Well type:	OG
Wellsymbol:	DH	Confidenti:	Not Reported
Operatorna:	Atlantic Oil Company		
Wellnumber:	1	Leasename:	Atlantic-Sunray L.A. Shops
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Any Field		
Areaname:	Any Area		
Section :	26	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.058595		
Longitude8:	-118.221681		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	A4400	Cacountyco:	037
Fieldcode:	000	Areacode:	00
Td:	0		
Site id:	CAOG80000033305		

G107
WSW **OIL_GAS** **CAOG80000034325**
1/2 - 1 Mile

Districtnu:	1	Apinumber:	03719139
Activewell:	N	Well type:	OG
Wellsymbol:	AB	Confidenti:	Not Reported
Operatorna:	C. C. Harris Oil Co.		
Wellnumber:	54	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	21	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.06703		
Longitude8:	-118.239731		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	01061	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034325		

H108
WSW **OIL_GAS** **CAOG80000034256**
1/2 - 1 Mile

Districtnu:	1	Apinumber:	03719137
Activewell:	N	Well type:	OG
Wellsymbol:	AB	Confidenti:	Not Reported
Operatorna:	C. C. Harris Oil Co.		
Wellnumber:	52	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	21	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.066695		
Longitude8:	-118.23964		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	01061	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034256		

H109
WSW **OIL_GAS** **CAOG80000034150**
1/2 - 1 Mile

Districtnu:	1	Apinumber:	03719024
Activewell:	N	Well type:	OG
Wellsymbol:	AB	Confidenti:	Not Reported
Operatorna:	First Chinese Bapt. Church		
Wellnumber:	3	Leasename:	A. F. Hodges
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	21	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	350.122		
Locationde:	Not Reported		
Latitude83:	34.065960699		
Longitude8:	-118.23935025		
Gissourcec:	gps		
Comments:	42207148.ssf		
Operatorco:	F1050	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034150		

H110
WSW
1/2 - 1 Mile

OIL_GAS **CAOG80000034303**

Districtnu:	1	Apinumber:	03719138
Activewell:	N	Well type:	OG
Wellsymbol:	AB	Confidenti:	Not Reported
Operatorna:	C. C. Harris Oil Co.		
Wellnumber:	53	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	21	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.066888		
Longitude8:	-118.23973		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	01061	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034303		

G111
WSW
1/2 - 1 Mile

OIL_GAS **CAOG80000034436**

Districtnu:	1	Apinumber:	03726015
Activewell:	N	Well type:	OG
Wellsymbol:	AP	Confidenti:	Not Reported
Operatorna:	Parker Oil Col		
Wellnumber:	2	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	21	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.067644		
Longitude8:	-118.240016		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	06661	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034436		

H112
WSW
1/2 - 1 Mile

OIL_GAS **CAOG80000034232**

Districtnu:	1	Apinumber:	03719130
Activewell:	N	Well type:	OG
Wellsymbol:	AB	Confidenti:	Not Reported
Operatorna:	C. C. Harris Oil Co.		
Wellnumber:	45	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	21	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.066505		
Longitude8:	-118.239676		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	01061	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034232		

I113
WSW
1/2 - 1 Mile

OIL_GAS **CAOG80000034343**

Districtnu:	1	Apinumber:	03719132
Activewell:	N	Well type:	OG
Wellsymbol:	AB	Confidenti:	Not Reported
Operatorna:	C. C. Harris Oil Co.		
Wellnumber:	47	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	21	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.067084		
Longitude8:	-118.2399		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	01061	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034343		

H114
WSW
1/2 - 1 Mile

OIL_GAS **CAOG80000034191**

Districtnu:	1	Apinumber:	03719025
Activewell:	N	Well type:	OG
Wellsymbol:	AB	Confidenti:	Not Reported
Operatorna:	PAMC, Ltd.		
Wellnumber:	4	Leasename:	A. F. Hodges
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	21	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	343.355		
Locationde:	Not Reported		
Latitude83:	34.066258993		
Longitude8:	-118.239609445		
Gissourcec:	gps		
Comments:	42207148.ssf		
Operatorco:	P0005	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034191		

I115
WSW
1/2 - 1 Mile

OIL_GAS **CAOG80000034393**

Districtnu:	1	Apinumber:	03719019
Activewell:	N	Well type:	OG
Wellsymbol:	AB	Confidenti:	Not Reported
Operatorna:	Chavez Realty Develop Co.		
Wellnumber:	6	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	21	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	373.702		
Locationde:	Not Reported		
Latitude83:	34.067399031		
Longitude8:	-118.240018099		
Gissourcec:	gps		
Comments:	42207148.ssf		
Operatorco:	C5500	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034393		

I116
WSW **OIL_GAS** **CAOG80000034314**
1/2 - 1 Mile

Districtnu:	1	Apinumber:	03719083
Activewell:	N	Well type:	OG
Wellsymbol:	AB	Confidenti:	Not Reported
Operatorna:	Nate Bray (G. N.)		
Wellnumber:	9	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	21	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.066971		
Longitude8:	-118.239897		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	06167	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034314		

H117
WSW **OIL_GAS** **CAOG80000034179**
1/2 - 1 Mile

Districtnu:	1	Apinumber:	03719012
Activewell:	N	Well type:	OG
Wellsymbol:	AB	Confidenti:	Not Reported
Operatorna:	Carl B. Breig		
Wellnumber:	1	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	21	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.0662		
Longitude8:	-118.239617		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	01369	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034179		

I118
WSW **OIL_GAS** **CAOG80000034397**
1/2 - 1 Mile

Districtnu:	1	Apinumber:	03725991
Activewell:	N	Well type:	OG
Wellsymbol:	AP	Confidenti:	Not Reported
Operatorna:	Parker Oil Col		
Wellnumber:	1	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	21	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.067445		
Longitude8:	-118.240108		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	06661	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034397		

I119
West **OIL_GAS** **CAOG80000034487**
1/2 - 1 Mile

Districtnu:	1	Apinumber:	03725408
Activewell:	N	Well type:	OG
Wellsymbol:	AB	Confidenti:	Not Reported
Operatorna:	Union Consolidated Crude Oil Co.		
Wellnumber:	4	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	21	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.068089		
Longitude8:	-118.240312		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	08640	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034487		

I120
WSW
1/2 - 1 Mile

OIL_GAS **CAOG80000034449**

Districtnu:	1	Apinumber:	03726019
Activewell:	N	Well type:	OG
Wellsymbol:	AP	Confidenti:	Not Reported
Operatorna:	Parker Oil Col		
Wellnumber:	4	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	21	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.06775		
Longitude8:	-118.240264		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	06661	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034449		

I121
WSW
1/2 - 1 Mile

OIL_GAS **CAOG80000034276**

Districtnu:	1	Apinumber:	03719131
Activewell:	N	Well type:	OG
Wellsymbol:	AB	Confidenti:	Not Reported
Operatorna:	C. C. Harris Oil Co.		
Wellnumber:	46	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	21	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.066781		
Longitude8:	-118.240045		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	01061	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034276		

I122
WSW **OIL_GAS** **CAOG80000034388**
1/2 - 1 Mile

Districtnu:	1	Apinumber:	03725566
Activewell:	N	Well type:	OG
Wellsymbol:	AP	Confidenti:	Not Reported
Operatorna:	Consolidated Crude Corp.		
Wellnumber:	1	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	21	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.067364		
Longitude8:	-118.240266		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	01816	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034388		

H123
WSW **OIL_GAS** **CAOG80000034243**
1/2 - 1 Mile

Districtnu:	1	Apinumber:	03719136
Activewell:	N	Well type:	OG
Wellsymbol:	AB	Confidenti:	Not Reported
Operatorna:	C. C. Harris Oil Co.		
Wellnumber:	51	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	21	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.066577		
Longitude8:	-118.240065		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	01061	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034243		

I124
WSW **OIL_GAS** **CAOG80000034421**
1/2 - 1 Mile

Districtnu:	1	Apinumber:	03726080
Activewell:	N	Well type:	OG
Wellsymbol:	AP	Confidenti:	Not Reported
Operatorna:	Mrs. Emma Summers		
Wellnumber:	1	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	21	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.067558		
Longitude8:	-118.240403		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	09618	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034421		

H125
WSW **OIL_GAS** **CAOG80000034146**
1/2 - 1 Mile

Districtnu:	1	Apinumber:	03723883
Activewell:	N	Well type:	OG
Wellsymbol:	AB	Confidenti:	Not Reported
Operatorna:	Kenneth & Katherine Manley		
Wellnumber:	1	Leasename:	Lapp
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	21	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.065934		
Longitude8:	-118.239861		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	M1400	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034146		

I126
WSW
1/2 - 1 Mile

OIL_GAS **CAOG80000034441**

Districtnu:	1	Apinumber:	03726016
Activewell:	N	Well type:	OG
Wellsymbol:	AP	Confidenti:	Not Reported
Operatorna:	Parker Oil Col		
Wellnumber:	3	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	21	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.067663		
Longitude8:	-118.240455		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	06661	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034441		

I127
WSW
1/2 - 1 Mile

OIL_GAS **CAOG80000034354**

Districtnu:	1	Apinumber:	03719081
Activewell:	N	Well type:	OG
Wellsymbol:	AB	Confidenti:	Not Reported
Operatorna:	Nate Bray (G. N.)		
Wellnumber:	7	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	21	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.067134		
Longitude8:	-118.240325		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	06167	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034354		

I128
WSW **OIL_GAS** **CAOG80000034260**
1/2 - 1 Mile

Districtnu:	1	Apinumber:	03719017
Activewell:	N	Well type:	OG
Wellsymbol:	AB	Confidenti:	Not Reported
Operatorna:	Chavez Realty Develop Co.		
Wellnumber:	4	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	21	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	373.64		
Locationde:	Not Reported		
Latitude83:	34.0667103		
Longitude8:	-118.240242791		
Gissourcec:	gps		
Comments:	42207148.ssf		
Operatorco:	C5500	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034260		

I129
WSW **OIL_GAS** **CAOG80000034417**
1/2 - 1 Mile

Districtnu:	1	Apinumber:	03719018
Activewell:	N	Well type:	OG
Wellsymbol:	AB	Confidenti:	Not Reported
Operatorna:	Chavez Realty Develop Co.		
Wellnumber:	5	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	21	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	385.965		
Locationde:	Not Reported		
Latitude83:	34.067544249		
Longitude8:	-118.240526661		
Gissourcec:	gps		
Comments:	42207148.ssf		
Operatorco:	C5500	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034417		

I130
WSW
1/2 - 1 Mile

OIL_GAS **CAOG80000034220**

Districtnu:	1	Apinumber:	03725401
Activewell:	N	Well type:	OG
Wellsymbol:	AB	Confidenti:	Not Reported
Operatorna:	Standard Oil Co.		
Wellnumber:	1	Leasename:	Zobelein
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	21	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.06643		
Longitude8:	-118.240215		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	08040	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034220		

I131
WSW
1/2 - 1 Mile

OIL_GAS **CAOG80000034331**

Districtnu:	1	Apinumber:	03719082
Activewell:	N	Well type:	OG
Wellsymbol:	AB	Confidenti:	Not Reported
Operatorna:	Nate Bray (G. N.)		
Wellnumber:	8	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	21	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.067041		
Longitude8:	-118.240441		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	06167	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034331		

H132
WSW
1/2 - 1 Mile

OIL_GAS **CAOG80000034101**

Districtnu:	1	Apinumber:	03719022
Activewell:	N	Well type:	OG
Wellsymbol:	AB	Confidenti:	Not Reported
Operatorna:	First Chinese Bapt. Church		
Wellnumber:	1	Leasename:	A. F. Hodges
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	21	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	345.522		
Locationde:	Not Reported		
Latitude83:	34.065662641		
Longitude8:	-118.239916197		
Gissourcec:	gps		
Comments:	42207148.ssf		
Operatorco:	F1050	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034101		

I133
West
1/2 - 1 Mile

OIL_GAS **CAOG80000034448**

Districtnu:	1	Apinumber:	03725403
Activewell:	N	Well type:	OG
Wellsymbol:	AB	Confidenti:	Not Reported
Operatorna:	Union Consolidated Crude Oil Co.		
Wellnumber:	7	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	21	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.067742		
Longitude8:	-118.240651		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	08640	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034448		

I134
WSW **OIL_GAS** **CAOG80000034362**
1/2 - 1 Mile

Districtnu:	1	Apinumber:	03719169
Activewell:	N	Well type:	OG
Wellsymbol:	AB	Confidenti:	Not Reported
Operatorna:	R. Earl		
Wellnumber:	1	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	21	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.067175		
Longitude8:	-118.24063		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	09634	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034362		

I135
WSW **OIL_GAS** **CAOG80000034412**
1/2 - 1 Mile

Districtnu:	1	Apinumber:	03726079
Activewell:	N	Well type:	OG
Wellsymbol:	AB	Confidenti:	Not Reported
Operatorna:	Standard Crude Oil Co.		
Wellnumber:	1	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	21	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.067524		
Longitude8:	-118.240727		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	09645	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034412		

I136
WSW **OIL_GAS** **CAOG80000034257**
1/2 - 1 Mile

Districtnu:	1	Apinumber:	03719016
Activewell:	N	Well type:	OG
Wellsymbol:	AB	Confidenti:	Not Reported
Operatorna:	Chavez Realty Develop Co.		
Wellnumber:	3	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	21	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	381.802		
Locationde:	Not Reported		
Latitude83:	34.066700901		
Longitude8:	-118.240493566		
Gissourcec:	gps		
Comments:	42207148.ssf		
Operatorco:	C5500	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034257		

I137
West **OIL_GAS** **CAOG80000034446**
1/2 - 1 Mile

Districtnu:	1	Apinumber:	03725406
Activewell:	N	Well type:	OG
Wellsymbol:	AB	Confidenti:	Not Reported
Operatorna:	Union Consolidated Crude Oil Co.		
Wellnumber:	6	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	21	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.067726		
Longitude8:	-118.240867		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	08640	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034446		

I138
West
1/2 - 1 Mile

OIL_GAS **CAOG80000034455**

Districtnu:	1	Apinumber:	03725407
Activewell:	N	Well type:	OG
Wellsymbol:	AB	Confidenti:	Not Reported
Operatorna:	Union Consolidated Crude Oil Co.		
Wellnumber:	3	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	21	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.067812		
Longitude8:	-118.240929		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	08640	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034455		

I139
WSW
1/2 - 1 Mile

OIL_GAS **CAOG80000034281**

Districtnu:	1	Apinumber:	03719015
Activewell:	N	Well type:	OG
Wellsymbol:	AB	Confidenti:	Not Reported
Operatorna:	Chavez Realty Develop Co.		
Wellnumber:	2	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	21	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	392.457		
Locationde:	Not Reported		
Latitude83:	34.066792977		
Longitude8:	-118.240739384		
Gissourcec:	gps		
Comments:	42207148.ssf		
Operatorco:	C5500	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034281		

I140
WSW **OIL_GAS** **CAOG80000034425**
1/2 - 1 Mile

Districtnu:	1	Apinumber:	03725405
Activewell:	N	Well type:	OG
Wellsymbol:	AB	Confidenti:	Not Reported
Operatorna:	Union Consolidated Crude Oil Co.		
Wellnumber:	5	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	21	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.067602		
Longitude8:	-118.241048		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	08640	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034425		

I141
WSW **OIL_GAS** **CAOG80000034193**
1/2 - 1 Mile

Districtnu:	1	Apinumber:	03726081
Activewell:	N	Well type:	OG
Wellsymbol:	AP	Confidenti:	Not Reported
Operatorna:	Tyler Oil Co.		
Wellnumber:	1	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	21	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.066283		
Longitude8:	-118.240675		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	09651	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034193		

J142
WSW
1/2 - 1 Mile

OIL_GAS **CAOG80000034136**

Districtnu:	1	Apinumber:	03719023
Activewell:	N	Well type:	OG
Wellsymbol:	AB	Confidenti:	Not Reported
Operatorna:	Henry & Jane Fong		
Wellnumber:	2	Leasename:	A. F. Hodges
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	21	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.065835		
Longitude8:	-118.240496		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	F1375	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034136		

K143
WSW
1/2 - 1 Mile

OIL_GAS **CAOG80000034431**

Districtnu:	1	Apinumber:	03725404
Activewell:	N	Well type:	OG
Wellsymbol:	AB	Confidenti:	Not Reported
Operatorna:	Union Consolidated Crude Oil Co.		
Wellnumber:	2	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	21	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.067625		
Longitude8:	-118.241137		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	08640	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034431		

144
ESE **OIL_GAS** **CAOG80000034005**
1/2 - 1 Mile

Districtnu:	1	Apinumber:	03706322
Activewell:	N	Well type:	OG
Wellsymbol:	DH	Confidenti:	Not Reported
Operatorna:	Chevron U.S.A. Inc.		
Wellnumber:	1	Leasename:	Edison Corehole
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Any Field		
Areaname:	Any Area		
Section :	23	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.065157		
Longitude8:	-118.211153		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	C5640	Cacountyco:	037
Fieldcode:	000	Areacode:	00
Td:	0		
Site id:	CAOG80000034005		

I145
WSW **OIL_GAS** **CAOG80000034320**
1/2 - 1 Mile

Districtnu:	1	Apinumber:	03719014
Activewell:	N	Well type:	OG
Wellsymbol:	AB	Confidenti:	Not Reported
Operatorna:	Chavez Realty Develop Co.		
Wellnumber:	1	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	21	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	427.7		
Locationde:	Not Reported		
Latitude83:	34.0669793		
Longitude8:	-118.241028328		
Gissourcec:	gps		
Comments:	42207148.ssf		
Operatorco:	C5500	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034320		

K146
West
1/2 - 1 Mile

OIL_GAS **CAOG80000034440**

Districtnu:	1	Apinumber:	03725402
Activewell:	N	Well type:	OG
Wellsymbol:	AB	Confidenti:	Not Reported
Operatorna:	Union Consolidated Crude Oil Co.		
Wellnumber:	1A	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	21	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.067653		
Longitude8:	-118.241236		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	08640	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034440		

J147
WSW
1/2 - 1 Mile

OIL_GAS **CAOG80000034212**

Districtnu:	1	Apinumber:	03725427
Activewell:	N	Well type:	OG
Wellsymbol:	AP	Confidenti:	Not Reported
Operatorna:	British Calif. Oil Co.		
Wellnumber:	2	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	21	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.066404		
Longitude8:	-118.241006		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	00927	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034212		

K148
West
1/2 - 1 Mile

OIL_GAS **CAOG80000034444**

Districtnu:	1	Apinumber:	03725425
Activewell:	N	Well type:	OG
Wellsymbol:	AP	Confidenti:	Not Reported
Operatorna:	British Calif. Oil Co.		
Wellnumber:	1	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	21	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.067711		
Longitude8:	-118.24148		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	00927	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034444		

J149
WSW
1/2 - 1 Mile

OIL_GAS **CAOG80000034064**

Districtnu:	1	Apinumber:	03725888
Activewell:	N	Well type:	OG
Wellsymbol:	AP	Confidenti:	Not Reported
Operatorna:	Maier & Zoblein Brewing Co.		
Wellnumber:	2	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	21	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.065427		
Longitude8:	-118.240774		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	09610	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034064		

J150
WSW
1/2 - 1 Mile

OIL_GAS **CAOG80000034143**

Districtnu:	1	Apinumber:	03726082
Activewell:	N	Well type:	OG
Wellsymbol:	AP	Confidenti:	Not Reported
Operatorna:	Tyler Oil Co.		
Wellnumber:	2	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	21	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.06589		
Longitude8:	-118.240985		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	09651	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034143		

K151
WSW
1/2 - 1 Mile

OIL_GAS **CAOG80000034404**

Districtnu:	1	Apinumber:	03726083
Activewell:	N	Well type:	OG
Wellsymbol:	AP	Confidenti:	Not Reported
Operatorna:	Tyler Oil Co.		
Wellnumber:	3	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	21	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.067477		
Longitude8:	-118.24153		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	09651	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034404		

J152
WSW
1/2 - 1 Mile

OIL_GAS **CAOG80000034038**

Districtnu:	1	Apinumber:	03725887
Activewell:	N	Well type:	OG
Wellsymbol:	AP	Confidenti:	Not Reported
Operatorna:	Maier & Zoblein Brewing Co.		
Wellnumber:	1	Leasename:	Eastern Area Drilled 1696
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	21	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.065307		
Longitude8:	-118.240834		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	09610	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034038		

J153
WSW
1/2 - 1 Mile

OIL_GAS **CAOG80000034173**

Districtnu:	1	Apinumber:	03725430
Activewell:	N	Well type:	OG
Wellsymbol:	AP	Confidenti:	Not Reported
Operatorna:	British Calif. Oil Co.		
Wellnumber:	3	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	21	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.066163		
Longitude8:	-118.241205		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	00927	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034173		

J154
WSW
1/2 - 1 Mile

OIL_GAS **CAOG80000034103**

Districtnu:	1	Apinumber:	03723859
Activewell:	N	Well type:	OG
Wellsymbol:	AB	Confidenti:	Not Reported
Operatorna:	C. C. Harris Oil Co.		
Wellnumber:	2	Leasename:	Unknown
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	21	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.065665		
Longitude8:	-118.241048		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	01061	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034103		

K155
WSW
1/2 - 1 Mile

OIL_GAS **CAOG80000034289**

Districtnu:	1	Apinumber:	03719080
Activewell:	N	Well type:	OG
Wellsymbol:	AB	Confidenti:	Not Reported
Operatorna:	Nate Bray (G. N.)		
Wellnumber:	6	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	21	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.06683		
Longitude8:	-118.241496		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	06167	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034289		

K156
WSW **OIL_GAS** **CAOG80000034380**
1/2 - 1 Mile

Districtnu:	1	Apinumber:	03726084
Activewell:	N	Well type:	OG
Wellsymbol:	AP	Confidenti:	Not Reported
Operatorna:	Tyler Oil Co.		
Wellnumber:	4	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	21	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.067298		
Longitude8:	-118.241663		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	09651	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034380		

J157
WSW **OIL_GAS** **CAOG80000034080**
1/2 - 1 Mile

Districtnu:	1	Apinumber:	03723858
Activewell:	N	Well type:	OG
Wellsymbol:	AB	Confidenti:	Not Reported
Operatorna:	C. C. Harris Oil Co.		
Wellnumber:	1	Leasename:	Unknown
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	21	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.065509		
Longitude8:	-118.241098		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	01061	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034080		

K158
WSW
1/2 - 1 Mile

OIL_GAS **CAOG80000034240**

Districtnu:	1	Apinumber:	03719079
Activewell:	N	Well type:	OG
Wellsymbol:	AB	Confidenti:	Not Reported
Operatorna:	Nate Bray (G. N.)		
Wellnumber:	5	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	21	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.066561		
Longitude8:	-118.241575		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	06167	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034240		

K159
WSW
1/2 - 1 Mile

OIL_GAS **CAOG80000034247**

Districtnu:	1	Apinumber:	03719142
Activewell:	N	Well type:	OG
Wellsymbol:	AB	Confidenti:	Not Reported
Operatorna:	C. C. Harris Oil Co.		
Wellnumber:	64	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	21	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.066636		
Longitude8:	-118.241669		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	01061	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034247		

J160
WSW
1/2 - 1 Mile

OIL_GAS **CAOG80000034062**

Districtnu:	1	Apinumber:	03719141
Activewell:	N	Well type:	OG
Wellsymbol:	AB	Confidenti:	Not Reported
Operatorna:	C. C. Harris Oil Co.		
Wellnumber:	63	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	21	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.065411		
Longitude8:	-118.24126		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	01061	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034062		

L161
WSW
1/2 - 1 Mile

OIL_GAS **CAOG80000034235**

Districtnu:	1	Apinumber:	03719198
Activewell:	N	Well type:	OG
Wellsymbol:	AB	Confidenti:	Not Reported
Operatorna:	E. A. Doran Oil Co.		
Wellnumber:	6	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	21	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.066552		
Longitude8:	-118.241744		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	02333	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034235		

J162
WSW
1/2 - 1 Mile

OIL_GAS **CAOG80000034132**

Districtnu:	1	Apinumber:	03719013
Activewell:	N	Well type:	OG
Wellsymbol:	AB	Confidenti:	Not Reported
Operatorna:	Carl B. Breig		
Wellnumber:	2	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	21	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.065807		
Longitude8:	-118.241592		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	01369	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034132		

L163
WSW
1/2 - 1 Mile

OIL_GAS **CAOG80000034187**

Districtnu:	1	Apinumber:	03719200
Activewell:	N	Well type:	OG
Wellsymbol:	AB	Confidenti:	Not Reported
Operatorna:	E. A. Doran Oil Co.		
Wellnumber:	13	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	21	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.066229		
Longitude8:	-118.241921		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	02333	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034187		

L164
WSW
1/2 - 1 Mile

OIL_GAS **CAOG80000034251**

Districtnu:	1	Apinumber:	03725625
Activewell:	N	Well type:	OG
Wellsymbol:	AP	Confidenti:	Not Reported
Operatorna:	E. A. Doran Oil Co.		
Wellnumber:	5	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	21	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.066654		
Longitude8:	-118.242081		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	02333	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034251		

L165
WSW
1/2 - 1 Mile

OIL_GAS **CAOG80000034222**

Districtnu:	1	Apinumber:	03719199
Activewell:	N	Well type:	OG
Wellsymbol:	AB	Confidenti:	Not Reported
Operatorna:	E. A. Doran Oil Co.		
Wellnumber:	11	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	21	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.06645		
Longitude8:	-118.242032		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	02333	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034222		

L166
WSW
1/2 - 1 Mile

OIL_GAS **CAOG80000034250**

Districtnu:	1	Apinumber:	03719144
Activewell:	N	Well type:	OG
Wellsymbol:	AB	Confidenti:	Not Reported
Operatorna:	C. C. Harris Oil Co.		
Wellnumber:	68	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	21	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.066651		
Longitude8:	-118.242273		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	01061	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034250		

L167
WSW
1/2 - 1 Mile

OIL_GAS **CAOG80000034190**

Districtnu:	1	Apinumber:	03719201
Activewell:	N	Well type:	OG
Wellsymbol:	AB	Confidenti:	Not Reported
Operatorna:	E. A. Doran Oil Co.		
Wellnumber:	14	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	21	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.066252		
Longitude8:	-118.242178		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	02333	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034190		

L168
WSW
1/2 - 1 Mile

OIL_GAS **CAOG80000034153**

Districtnu:	1	Apinumber:	03719078
Activewell:	N	Well type:	OG
Wellsymbol:	AB	Confidenti:	Not Reported
Operatorna:	Nate Bray (G. N.)		
Wellnumber:	4	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	21	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.065973		
Longitude8:	-118.24212		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	06167	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034153		

L169
WSW
1/2 - 1 Mile

OIL_GAS **CAOG80000034262**

Districtnu:	1	Apinumber:	03719145
Activewell:	N	Well type:	OG
Wellsymbol:	AB	Confidenti:	Not Reported
Operatorna:	C. C. Harris Oil Co.		
Wellnumber:	69	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	21	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.066716		
Longitude8:	-118.242391		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	01061	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034262		

170
South **OIL_GAS** **CAOG80000033277**
1/2 - 1 Mile

Districtnu:	1	Apinumber:	03706277
Activewell:	N	Well type:	OG
Wellsymbol:	AP	Confidenti:	Not Reported
Operatorna:	F. F. Hoard		
Wellnumber:	1	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Any Field		
Areaname:	Any Area		
Section :	27	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.055873		
Longitude8:	-118.22645		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	02829	Cacountyco:	037
Fieldcode:	000	Areacode:	00
Td:	0		
Site id:	CAOG80000033277		

L171
WSW **OIL_GAS** **CAOG80000034196**
1/2 - 1 Mile

Districtnu:	1	Apinumber:	03719192
Activewell:	N	Well type:	OG
Wellsymbol:	AB	Confidenti:	Not Reported
Operatorna:	E. A. Doran Oil Co.		
Wellnumber:	1-1	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	21	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.066318		
Longitude8:	-118.242307		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	02333	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034196		

L172
WSW **OIL_GAS** **CAOG80000034379**
1/2 - 1 Mile

Districtnu:	1	Apinumber:	03716587
Activewell:	N	Well type:	OG
Wellsymbol:	AB	Confidenti:	Not Reported
Operatorna:	Ventura Oil Co.		
Wellnumber:	1	Leasename:	L. A. Brick
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	21	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.067287		
Longitude8:	-118.242592		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	08760	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034379		

L173
WSW **OIL_GAS** **CAOG80000034170**
1/2 - 1 Mile

Districtnu:	1	Apinumber:	03725635
Activewell:	N	Well type:	OG
Wellsymbol:	AP	Confidenti:	Not Reported
Operatorna:	E. A. Doran Oil Co.		
Wellnumber:	3	Leasename:	Mc Cue
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	21	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.066133		
Longitude8:	-118.242292		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	02333	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034170		

174
WSW
1/2 - 1 Mile

OIL_GAS **CAOG80000034037**

Districtnu:	1	Apinumber:	03725629
Activewell:	N	Well type:	OG
Wellsymbol:	AP	Confidenti:	Not Reported
Operatorna:	E. A. Doran Oil Co.		
Wellnumber:	9	Leasename:	Mc Cue
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	21	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.065302		
Longitude8:	-118.242026		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	02333	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034037		

L175
WSW
1/2 - 1 Mile

OIL_GAS **CAOG80000034292**

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Districtnu:	1	Apinumber:	03719146
Activewell:	N	Well type:	OG
Wellsymbol:	AB	Confidenti:	Not Reported
Operatorna:	C. C. Harris Oil Co.		
Wellnumber:	70	Leasename:	Not Reported
Blmwell:	N	Countyname:	Los Angeles
Fieldname:	Los Angeles City		
Areaname:	Any Area		
Section :	21	Township:	01S
Range:	13W	Basemeridi:	SB
Elevation:	Not Reported		
Locationde:	Not Reported		
Latitude83:	34.066838		
Longitude8:	-118.242586		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	01061	Cacountyco:	037
Fieldcode:	422	Areacode:	00
Td:	0		
Site id:	CAOG80000034292		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS
RADON

AREA RADON INFORMATION

State Database: CA Radon

Radon Test Results

Zipcode	Num Tests	> 4 pCi/L
90012	7	0

Federal EPA Radon Zone for LOS ANGELES County: 2

Note: Zone 1 indoor average level > 4 pCi/L.
: Zone 2 indoor average level >= 2 pCi/L and <= 4 pCi/L.
: Zone 3 indoor average level < 2 pCi/L.

Federal Area Radon Information for LOS ANGELES COUNTY, CA

Number of sites tested: 63

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	0.711 pCi/L	98%	2%	0%
Living Area - 2nd Floor	Not Reported	Not Reported	Not Reported	Not Reported
Basement	0.933 pCi/L	100%	0%	0%

PHYSICAL SETTING SOURCE RECORDS SEARCHED

TOPOGRAPHIC INFORMATION

USGS 7.5' Digital Elevation Model (DEM)
Source: United States Geologic Survey
EDR acquired the USGS 7.5' Digital Elevation Model in 2002 and updated it in 2006. The 7.5 minute DEM corresponds to the USGS 1:24,000- and 1:25,000-scale topographic quadrangle maps. The DEM provides elevation data with consistent elevation units and projection.

Scanned Digital USGS 7.5' Topographic Map (DRG)
Source: United States Geologic Survey
A digital raster graphic (DRG) is a scanned image of a U.S. Geological Survey topographic map. The map images are made by scanning published paper maps on high-resolution scanners. The raster image is georeferenced and fit to the Universal Transverse Mercator (UTM) projection.

HYDROLOGIC INFORMATION

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 2003 & 2011 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002 and 2005 from the U.S. Fish and Wildlife Service.

HYDROGEOLOGIC INFORMATION

AQUIFLOW^{R} Information System
Source: EDR proprietary database of groundwater flow information
EDR has developed the AQUIFLOW Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

GEOLOGIC INFORMATION

Geologic Age and Rock Stratigraphic Unit
Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

STATSGO: State Soil Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Services
The U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) leads the national Conservation Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

SSURGO: Soil Survey Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Services (NRCS)
Telephone: 800-672-5559
SSURGO is the most detailed level of mapping done by the Natural Resources Conservation Services, mapping scales generally range from 1:12,000 to 1:63,360. Field mapping methods using national standards are used to construct the soil maps in the Soil Survey Geographic (SSURGO) database. SSURGO digitizing duplicates the original soil survey maps. This level of mapping is designed for use by landowners, townships and county natural resource planning and management.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

LOCAL / REGIONAL WATER AGENCY RECORDS

FEDERAL WATER WELLS

PWS: Public Water Systems
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

PWS ENF: Public Water Systems Violation and Enforcement Data
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SDWIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

USGS Water Wells: USGS National Water Inventory System (NWIS)
This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on wells, springs, and other sources of groundwater.

STATE RECORDS

Water Well Database
Source: Department of Water Resources
Telephone: 916-651-9648

California Drinking Water Quality Database
Source: Department of Health Services
Telephone: 916-324-2319
The database includes all drinking water compliance and special studies monitoring for the state of California since 1984. It consists of over 3,200,000 individual analyses along with well and water system information.

OTHER STATE DATABASE INFORMATION

California Oil and Gas Well Locations
Source: Department of Conservation
Telephone: 916-323-1779
Oil and Gas well locations in the state.

RADON

State Database: CA Radon
Source: Department of Health Services
Telephone: 916-324-2208
Radon Database for California

Area Radon Information
Source: USGS
Telephone: 703-356-4020
The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

EPA Radon Zones
Source: EPA
Telephone: 703-356-4020
Sections 307 & 309 of IRAA directed EPA to list and identify areas of U.S. with the potential for elevated indoor radon levels.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

OTHER

Airport Landing Facilities: Private and public use landing facilities
Source: Federal Aviation Administration, 800-457-6656

Epicenters: World earthquake epicenters, Richter 5 or greater
Source: Department of Commerce, National Oceanic and Atmospheric Administration

California Earthquake Fault Lines: The fault lines displayed on EDR's Topographic map are digitized quaternary fault lines, prepared in 1975 by the United State Geological Survey. Additional information (also from 1975) regarding activity at specific fault lines comes from California's Preliminary Fault Activity Map prepared by the California Division of Mines and Geology.

STREET AND ADDRESS INFORMATION

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Water Wheel
1745 North Spring Street
Los Angeles, CA 90012

Inquiry Number: 3348112.3
June 20, 2012

Certified Sanborn® Map Report

EDR® Environmental Data Resources Inc

440 Wheelers Farms Road
Milford, CT 06461
800.352.0050
www.edrnet.com

Certified Sanborn® Map Report

6/20/12

Site Name:
Water Wheel
1745 North Spring Street
Los Angeles, CA 90012

EDR Inquiry # 3348112.3

Client Name:
GeoSyntec Consultants
2100 Main St.
Huntington Beach, CA 92648

Contact: J. S. Rowlands

EDR® Environmental Data Resources Inc

The complete Sanborn Library collection has been searched by EDR, and fire insurance maps covering the target property location provided by GeoSyntec Consultants were identified for the years listed below. The certified Sanborn Library search results in this report can be authenticated by visiting www.edrnet.com/sanborn and entering the certification number. Only Environmental Data Resources Inc. (EDR) is authorized to grant rights for commercial reproduction of maps by Sanborn Library LLC, the copyright holder for the collection.

Certified Sanborn Results:

Site Name: Water Wheel
Address: 1745 North Spring Street
City, State, Zip: Los Angeles, CA 90012
Cross Street:
P.O. # LA0257
Project: Water Wheel
Certification # 90C9-4F64-AEA0

Maps Provided:

1970	1954	1894
1968	1953	1888
1965	1951	
1964	1950	
1960	1920	
1957	1906	

Sanborn® Library search results
Certification # 90C9-4F64-AEA0

The Sanborn Library includes more than 1.2 million Sanborn fire insurance maps, which track historical property usage in approximately 12,000 American cities and towns. Collections searched:

- ✓ Library of Congress
- ✓ University Publications of America
- ✓ EDR Private Collection

The Sanborn Library LLC Since 1866™

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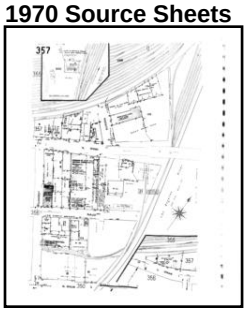
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Sanborn Sheet Thumbnails

This Certified Sanborn Map Report is based upon the following Sanborn Fire Insurance map sheets.

1970 Source Sheets



Volume 3, Sheet 357



Volume 13, Sheet 1353

1968 Source Sheets



Volume 3, Sheet 357

1965 Source Sheets



Volume 3, Sheet 357

1964 Source Sheets



Volume 3, Sheet 357

1960 Source Sheets



Volume 3, Sheet 357

1957 Source Sheets



Volume 3, Sheet 357

1954 Source Sheets

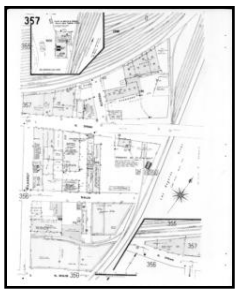


Volume 3, Sheet 357

1953 Source Sheets



Volume 3, Sheet 357



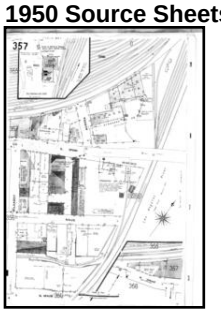
Volume 3, Sheet 357

1951 Source Sheets



Volume 13, Sheet 1353

1950 Source Sheets



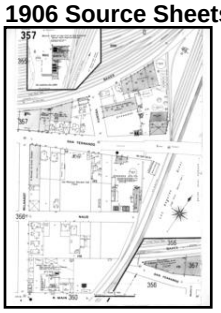
Volume 3, Sheet 357

1920 Source Sheets

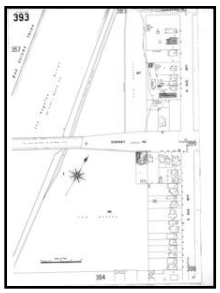


Volume 13, Sheet 1353

1906 Source Sheets



Volume 3, Sheet 357



Volume 4, Sheet 393

1894 Source Sheets



Volume 1, Sheet 21

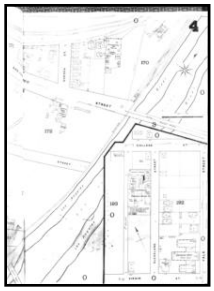


Volume 1, Sheet 24

1888 Source Sheets

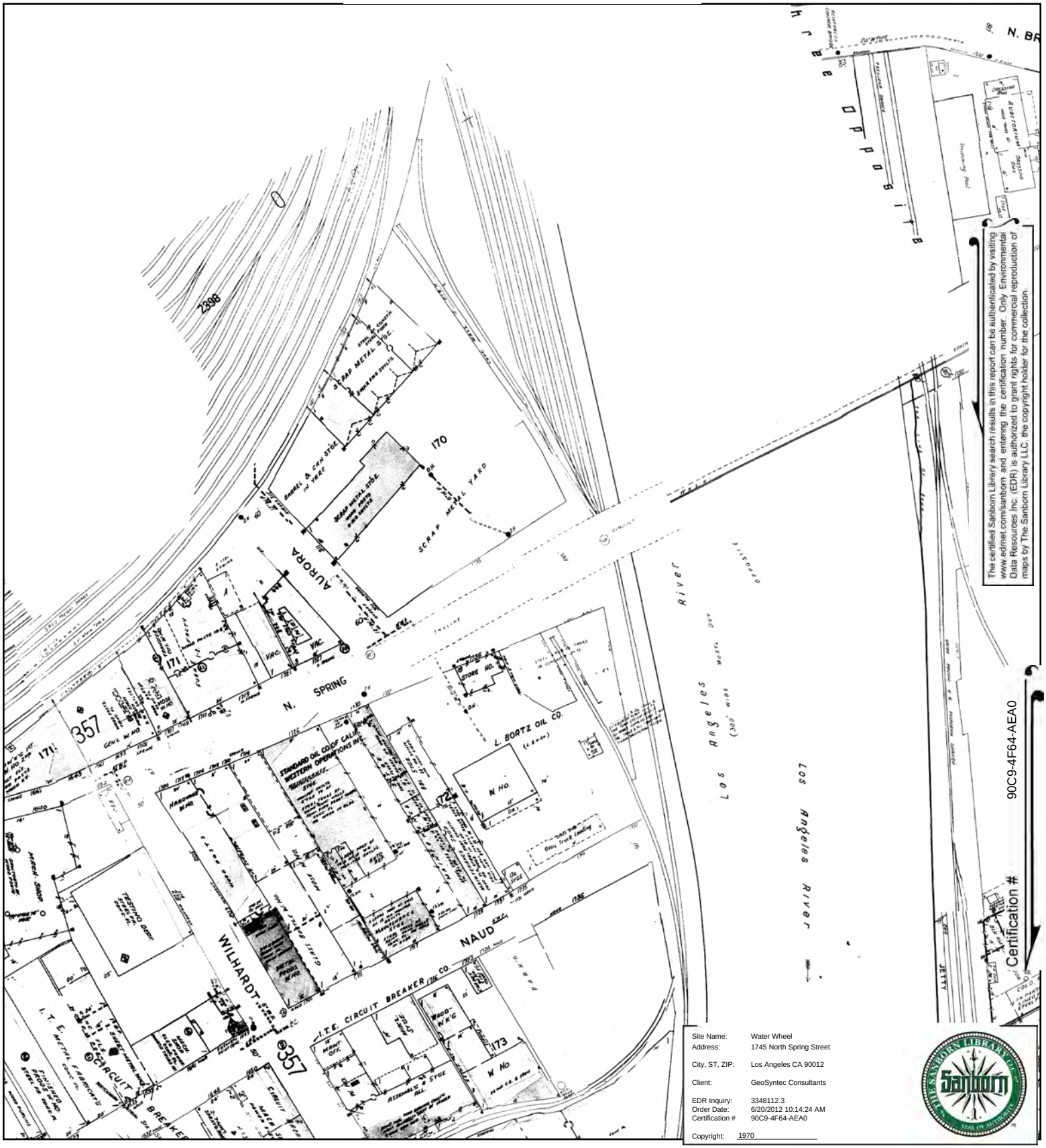


Volume 1, Sheet 4



Volume 1, Sheet 4

1970 Certified Sanborn Map



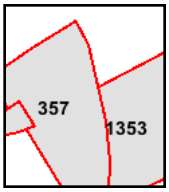
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Site Name:	Water Wheel
Address:	1745 North Spring Street
City, ST, ZIP:	Los Angeles CA 90012
Client:	GeoSyntec Consultants
EDR Inquiry:	3348112.3
Order Date:	6/20/2012 10:14:24 AM
Certification #	90C9-4F64-AEA0
Copyright:	1970

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Volume 13, Sheet 1353

N

1968 Certified Sanborn Map



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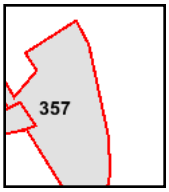
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Site Name:	Water Wheel
Address:	1745 North Spring Street
City, ST, ZIP:	Los Angeles CA 90012
Client:	GeoSyntec Consultants
EDR Inquiry:	3348112.3
Order Date:	6/20/2012 10:14:24 AM
Certification #	90C9-4F64-AEA0
Copyright:	1968

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1965 Certified Sanborn Map



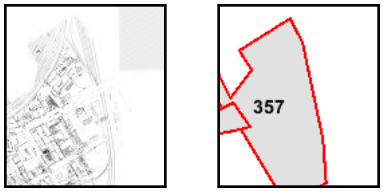
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Site Name:	Water Wheel
Address:	1745 North Spring Street
City, ST, ZIP:	Los Angeles CA 90012
Client:	GeoSyntec Consultants
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Order Date:	6/20/2012 10:14:24 AM
Certification #	90C9-4F64-AEA0
Copyright:	1965

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1964 Certified Sanborn Map



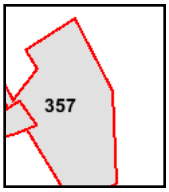
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Certification # 90C9-4F64-AEA0

Site Name:	Water Wheel
Address:	1745 North Spring Street
City, ST, ZIP:	Los Angeles CA 90012
Client:	GeoSyntec Consultants
EDR Inquiry:	3348112.3
Order Date:	6/20/2012 10:14:24 AM
Certification #	90C9-4F64-AEA0
Copyright:	1964

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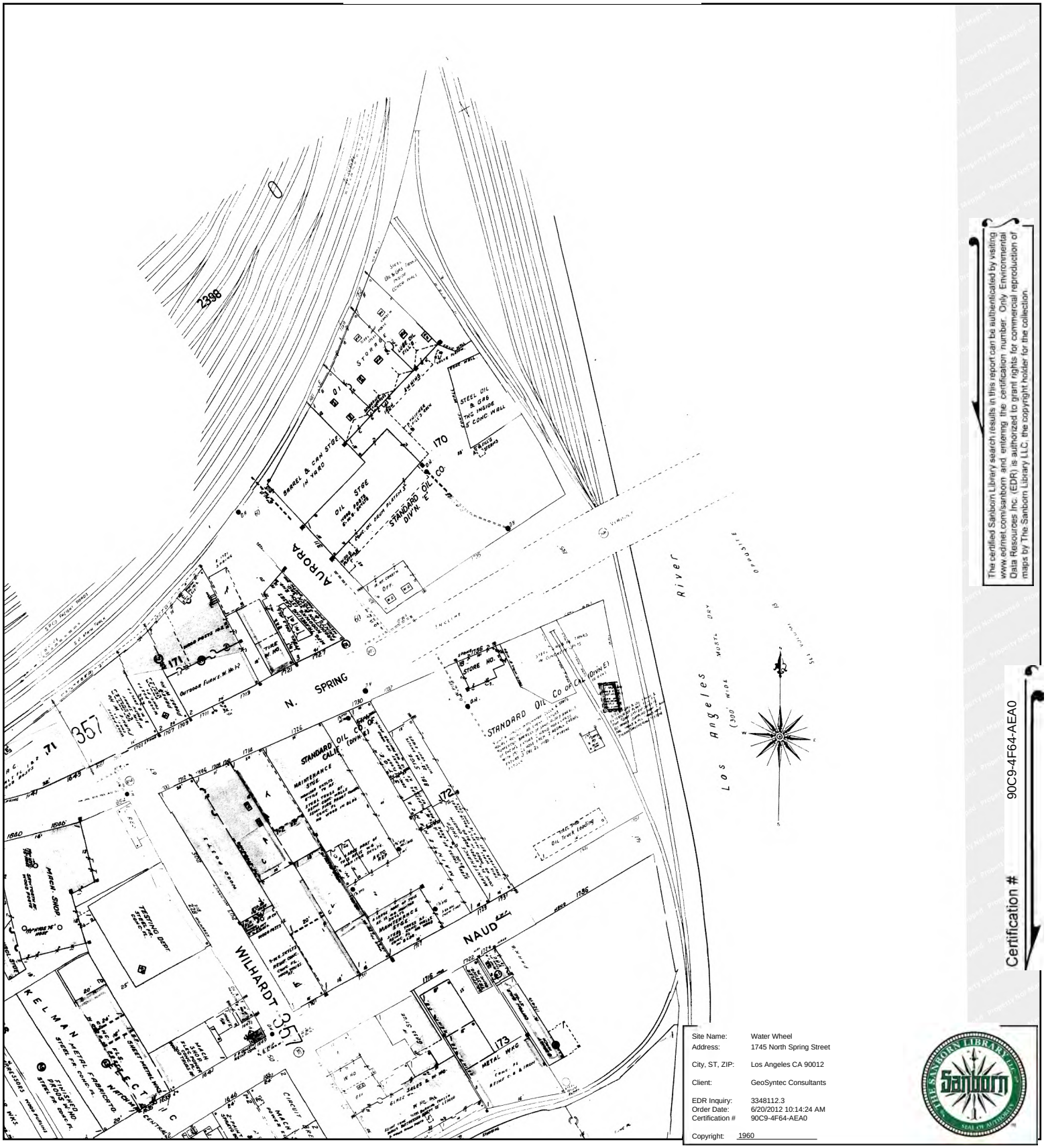


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1960 Certified Sanborn Map



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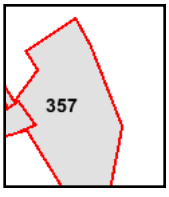
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Site Name:	Water Wheel
Address:	1745 North Spring Street
City, ST, ZIP:	Los Angeles CA 90012
Client:	GeoSyntec Consultants
EDR Inquiry:	3348112.3
Order Date:	6/20/2012 10:14:24 AM
Certification #	90C9-4F64-AEA0
Copyright:	1960

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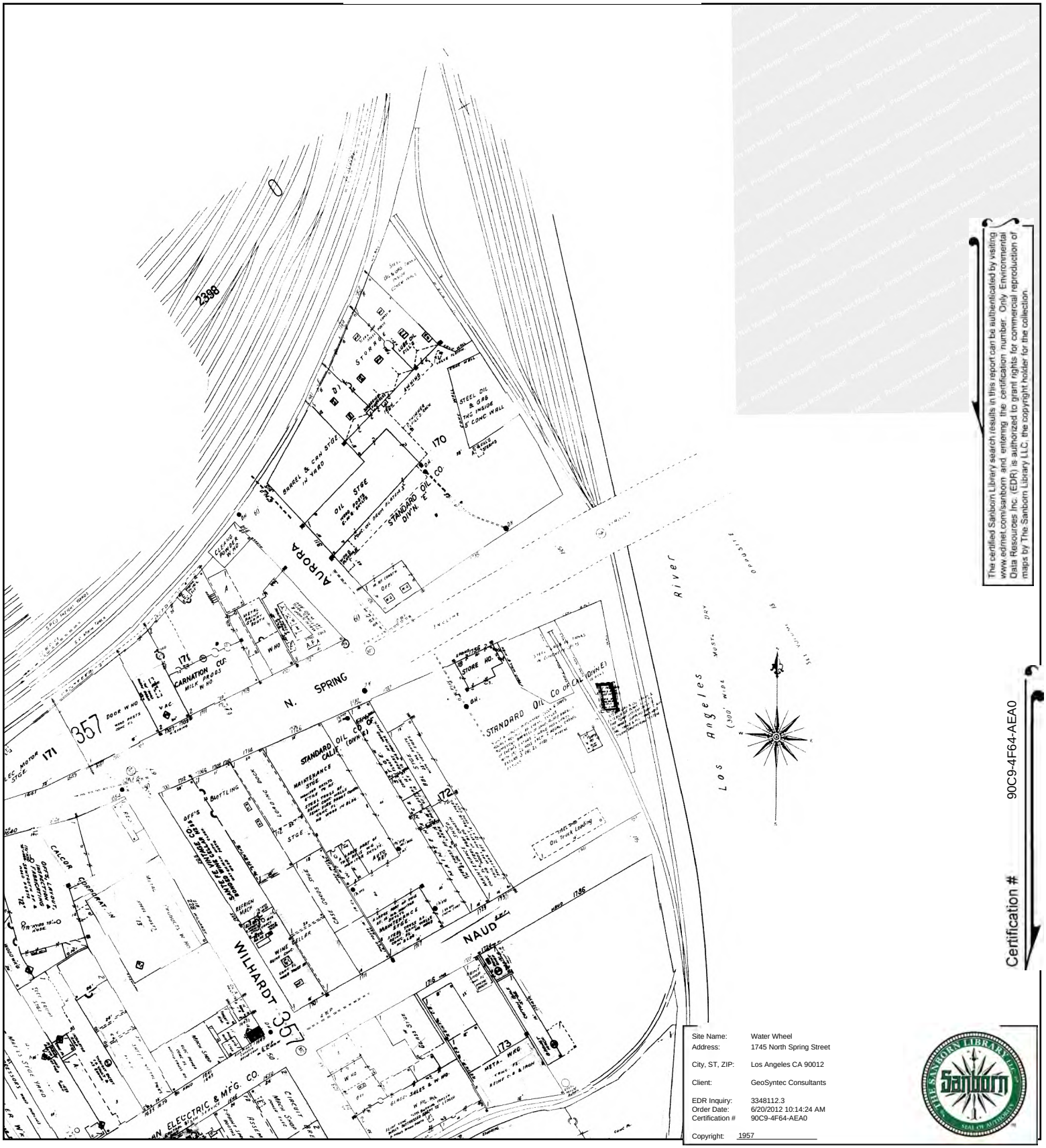




Volume 3, Sheet 357

N

1957 Certified Sanborn Map



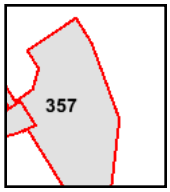
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Certification # 90C9-4F64-AEA0

Site Name:	Water Wheel
Address:	1745 North Spring Street
City, ST, ZIP:	Los Angeles CA 90012
Client:	GeoSyntec Consultants
EDR Inquiry:	3348112.3
Order Date:	6/20/2012 10:14:24 AM
Certification #	90C9-4F64-AEA0
Copyright:	1957

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1954 Certified Sanborn Map



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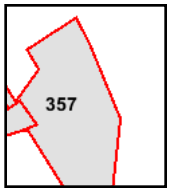
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Site Name:	Water Wheel
Address:	1745 North Spring Street
City, ST, ZIP:	Los Angeles CA 90012
Client:	GeoSyntec Consultants
EDR Inquiry:	3348112.3
Order Date:	6/20/2012 10:14:24 AM
Certification #	90C9-4F64-AEA0
Copyright:	1954

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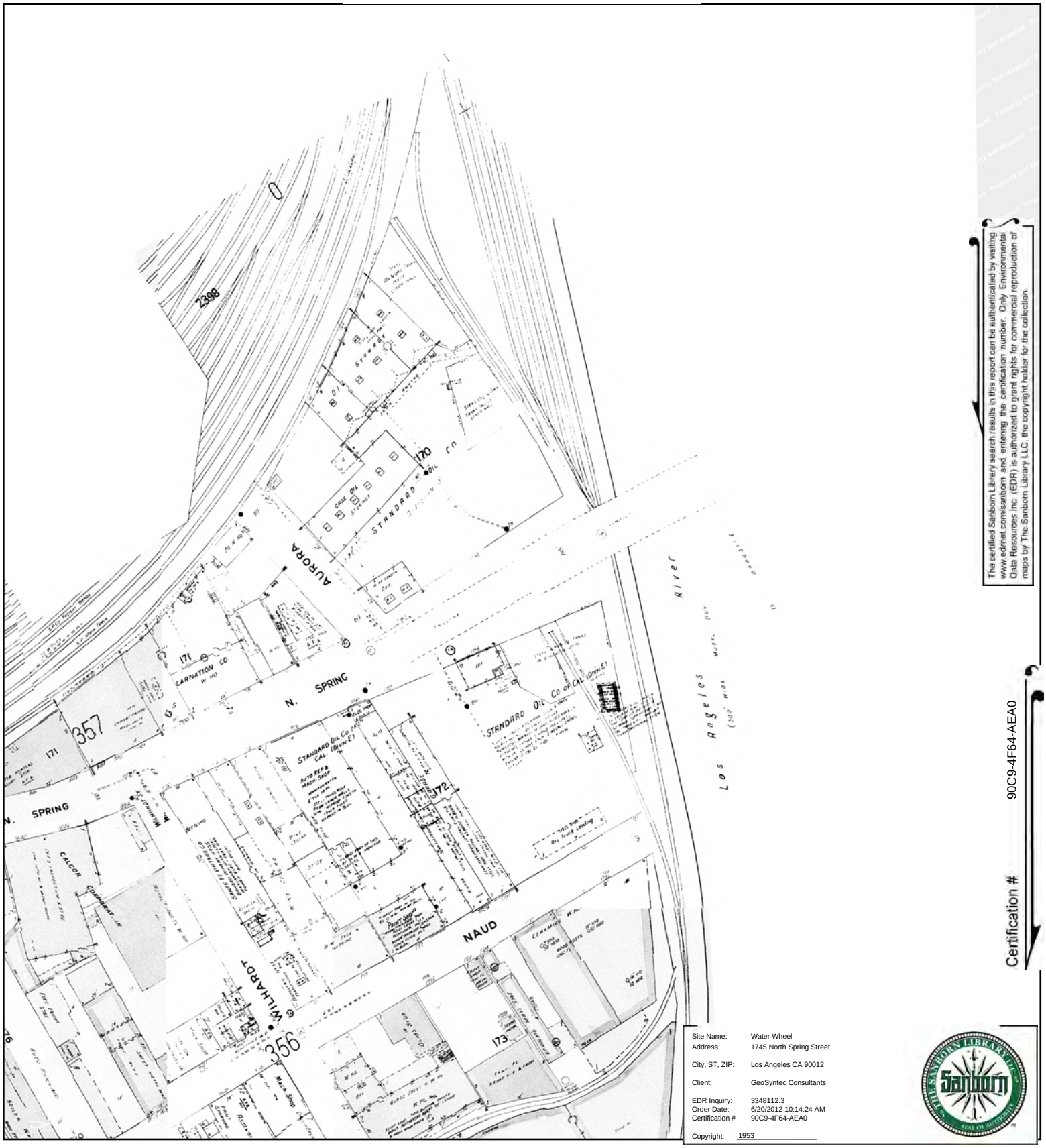




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1953 Certified Sanborn Map



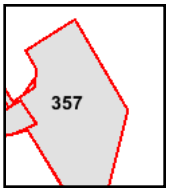
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Site Name:	Water Wheel
Address:	1745 North Spring Street
City, ST, ZIP:	Los Angeles CA 90012
Client:	GeoSyntec Consultants
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Order Date:	6/20/2012 10:14:24 AM
Certification #	90C9-4F64-AEA0
Copyright:	1953

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Volume 3, Sheet 357
Volume 3, Sheet 357

0 Feet 150 300 600

N

1951 Certified Sanborn Map



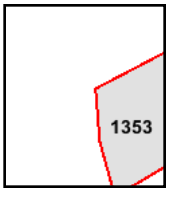
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Site Name: Water Wheel
Address: 1745 North Spring Street
City, ST, ZIP: Los Angeles CA 90012
Client: GeoSyntec Consultants
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Certification # 90C9-4F64-AEA0
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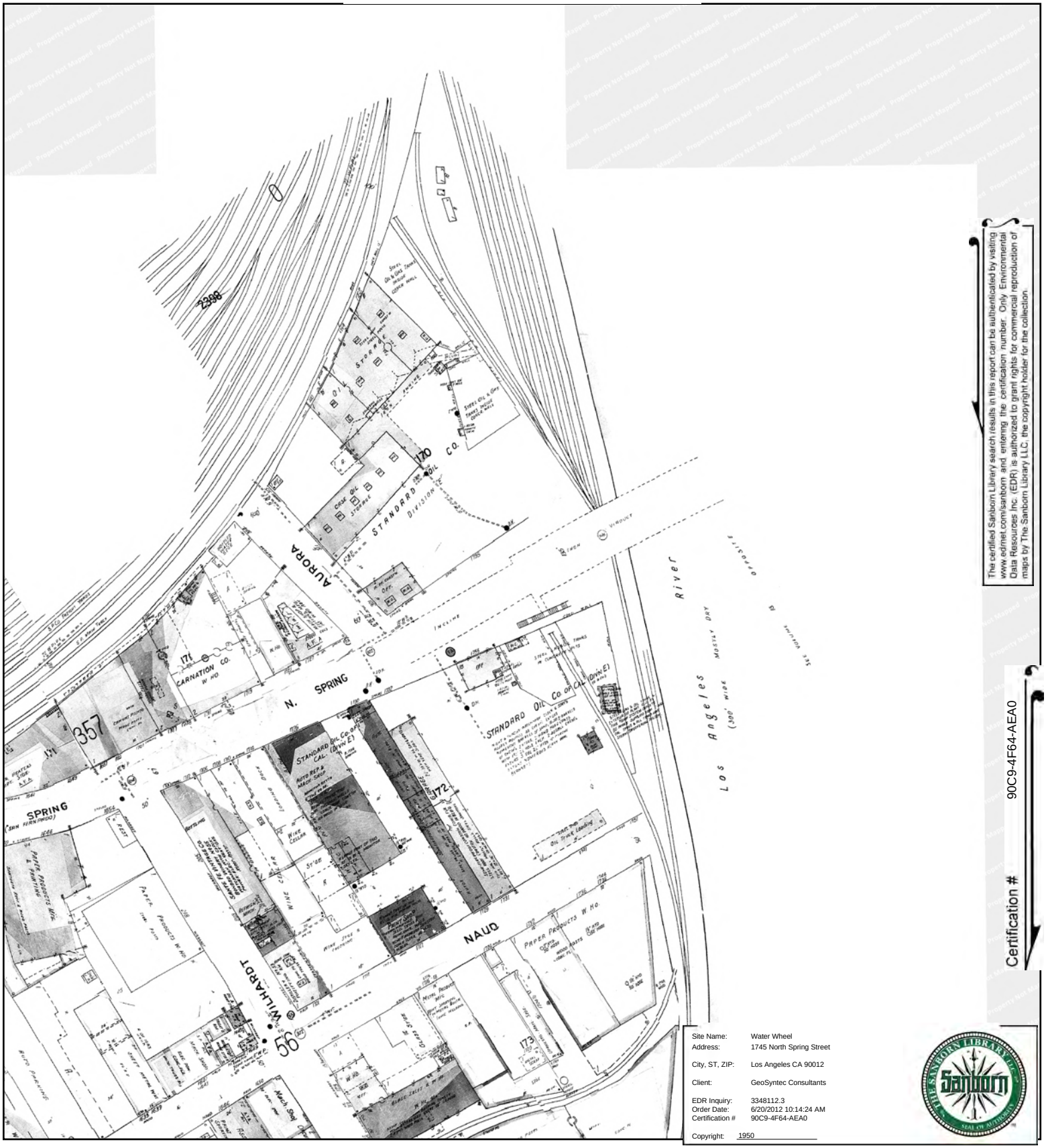


Volume 13, Sheet 1353

0 Feet 150 300 600

N

1950 Certified Sanborn Map



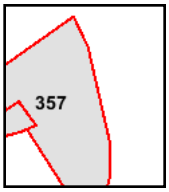
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Site Name:	Water Wheel
Address:	1745 North Spring Street
City, ST, ZIP:	Los Angeles CA 90012
Client:	GeoSyntec Consultants
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Order Date:	6/20/2012 10:14:24 AM
Certification #	90C9-4F64-AEA0
Copyright:	1950

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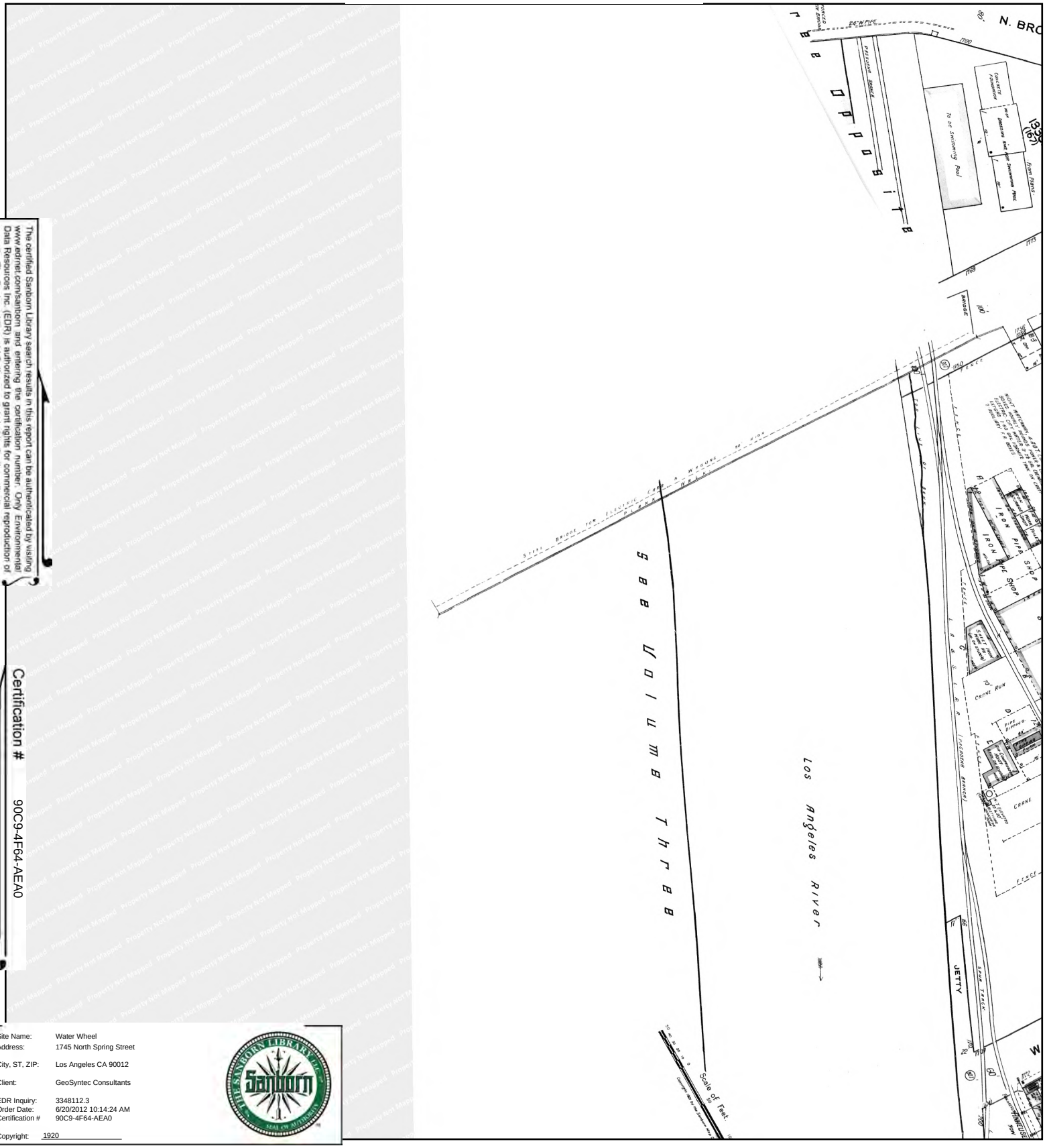


Volume 3, Sheet 357

0 Feet 150 300 600

N

1920 Certified Sanborn Map



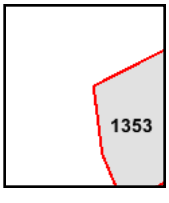
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Certification # 90C9-4F64-AEA0

Site Name: Water Wheel
Address: 1745 North Spring Street
City, ST, ZIP: Los Angeles CA 90012
Client: GeoSyntec Consultants
EDR Inquiry: 3348112.3
Order Date: 6/20/2012 10:14:24 AM
Certification # 90C9-4F64-AEA0
Copyright: 1920

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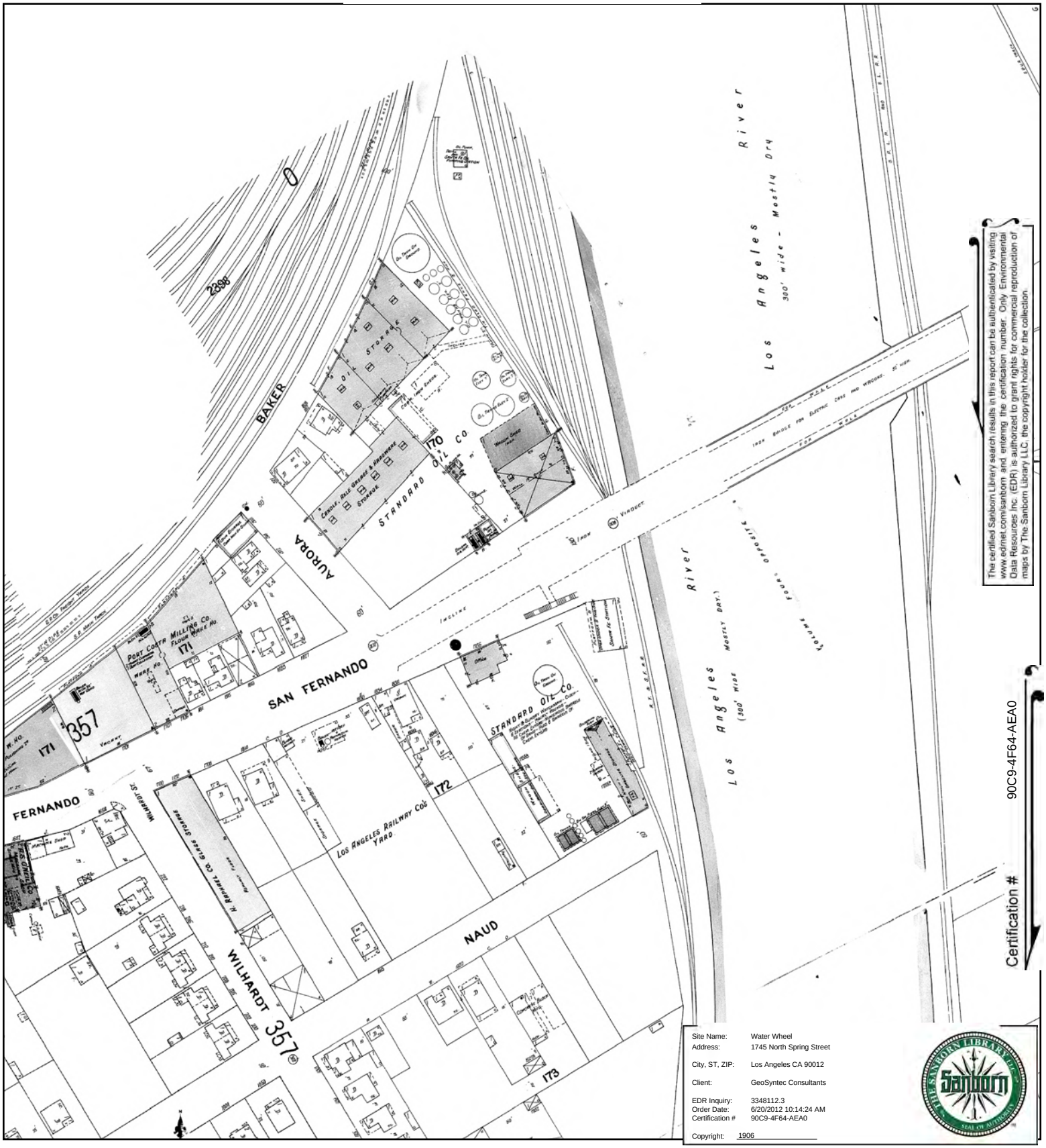


Volume 13, Sheet 1353

0 Feet 150 300 600

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1906 Certified Sanborn Map



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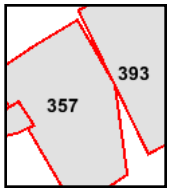
Certification # 90C9-4F64-AEA0

Site Name:	Water Wheel
Address:	1745 North Spring Street
City, ST, ZIP:	Los Angeles CA 90012
Client:	GeoSyntec Consultants
EDR Inquiry:	3348112.3
Order Date:	6/20/2012 10:14:24 AM
Certification #	90C9-4F64-AEA0
Copyright:	1906

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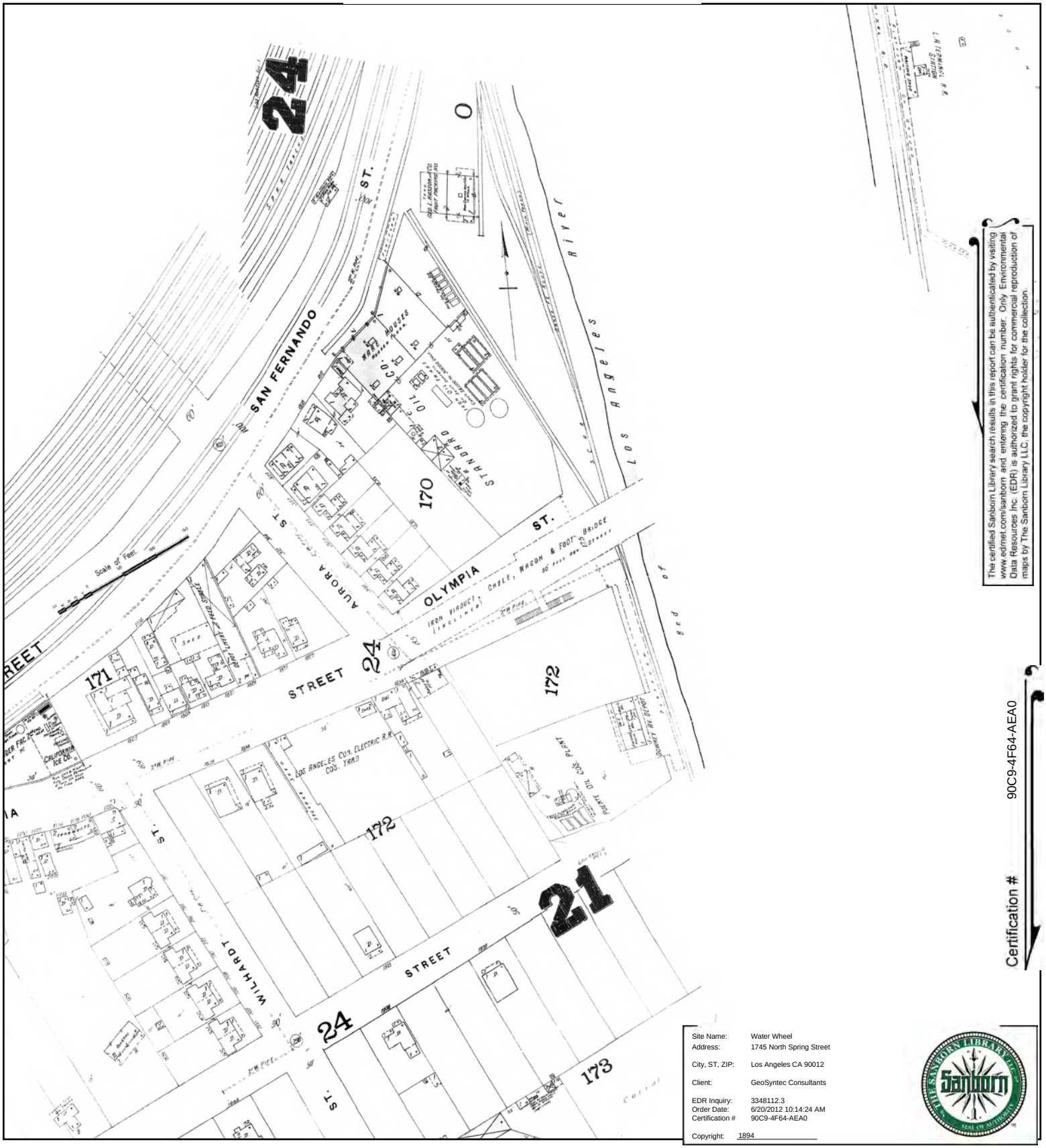




Volume 3, Sheet 357
Volume 4, Sheet 393

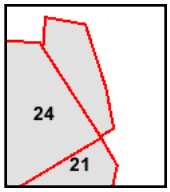
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1894 Certified Sanborn Map



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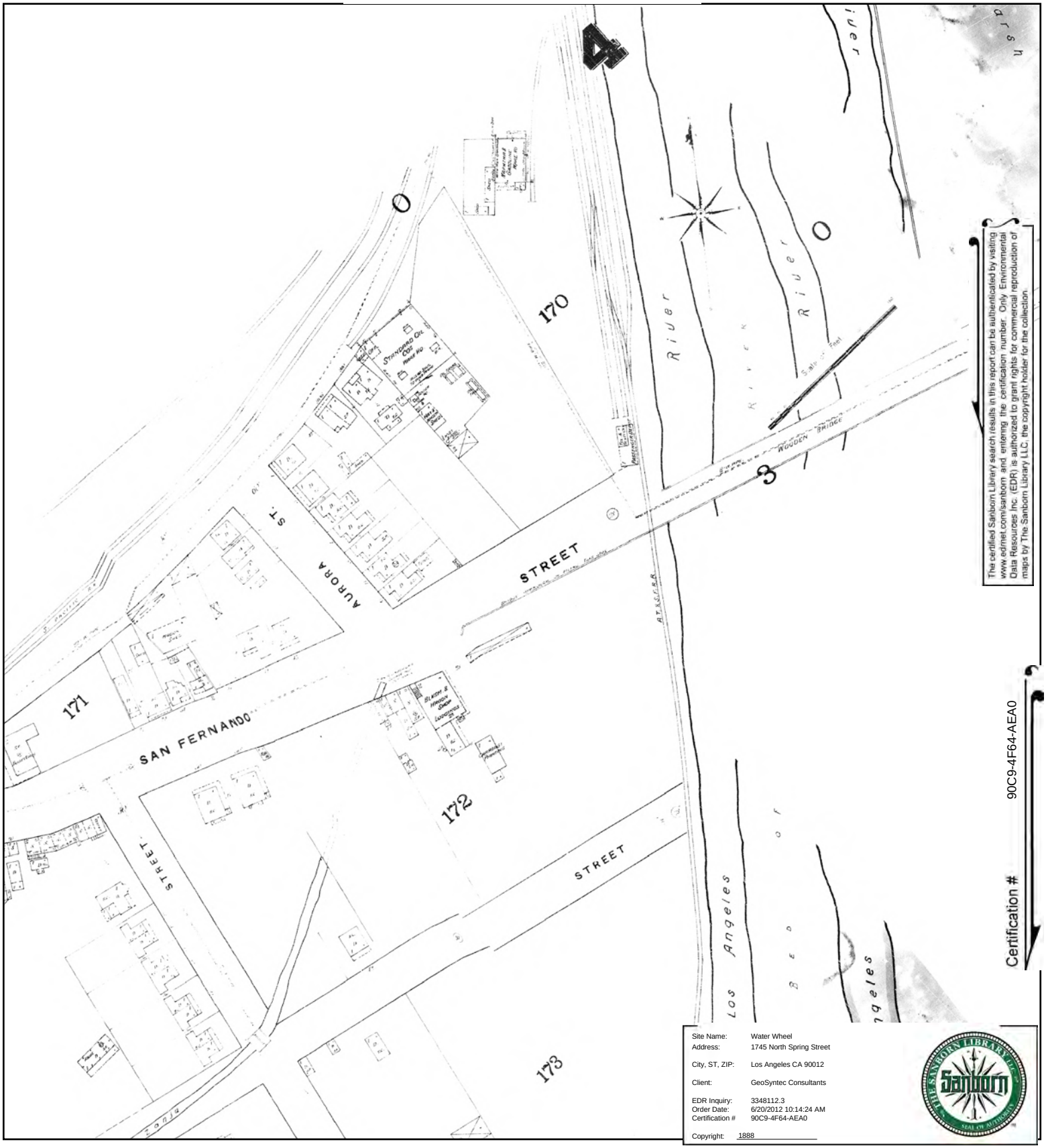


Volume 1, Sheet 21
Volume 1, Sheet 24

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1888 Certified Sanborn Map

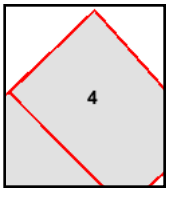


Site Name: Water Wheel
Address: 1745 North Spring Street
City, ST, ZIP: Los Angeles CA 90012
Client: GeoSyntec Consultants
EDR Inquiry: 3348112.3
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Certification # 90C9-4F64-AEA0
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Volume 1, Sheet 4
Volume 1, Sheet 4

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Water Wheel
1745 North Spring Street
Los Angeles, CA 90012

Inquiry Number: 3348112.4
June 20, 2012

EDR Historical Topographic Map Report

EDR® Environmental Data Resources Inc

440 Wheelers Farms Road
Milford, CT 06461
800.352.0050
www.edrnet.com

EDR Historical Topographic Map Report

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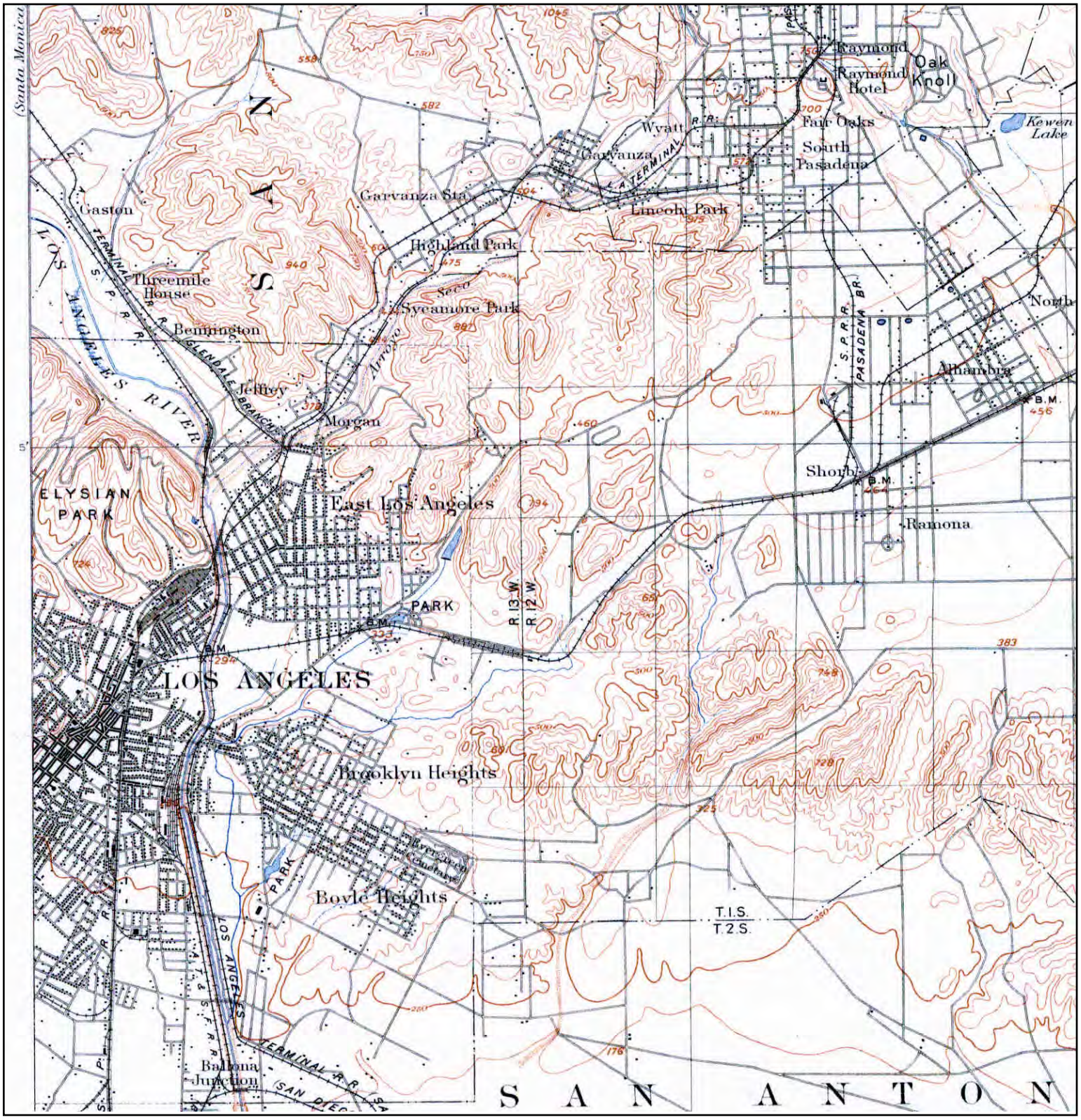
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Historical Topographic Map



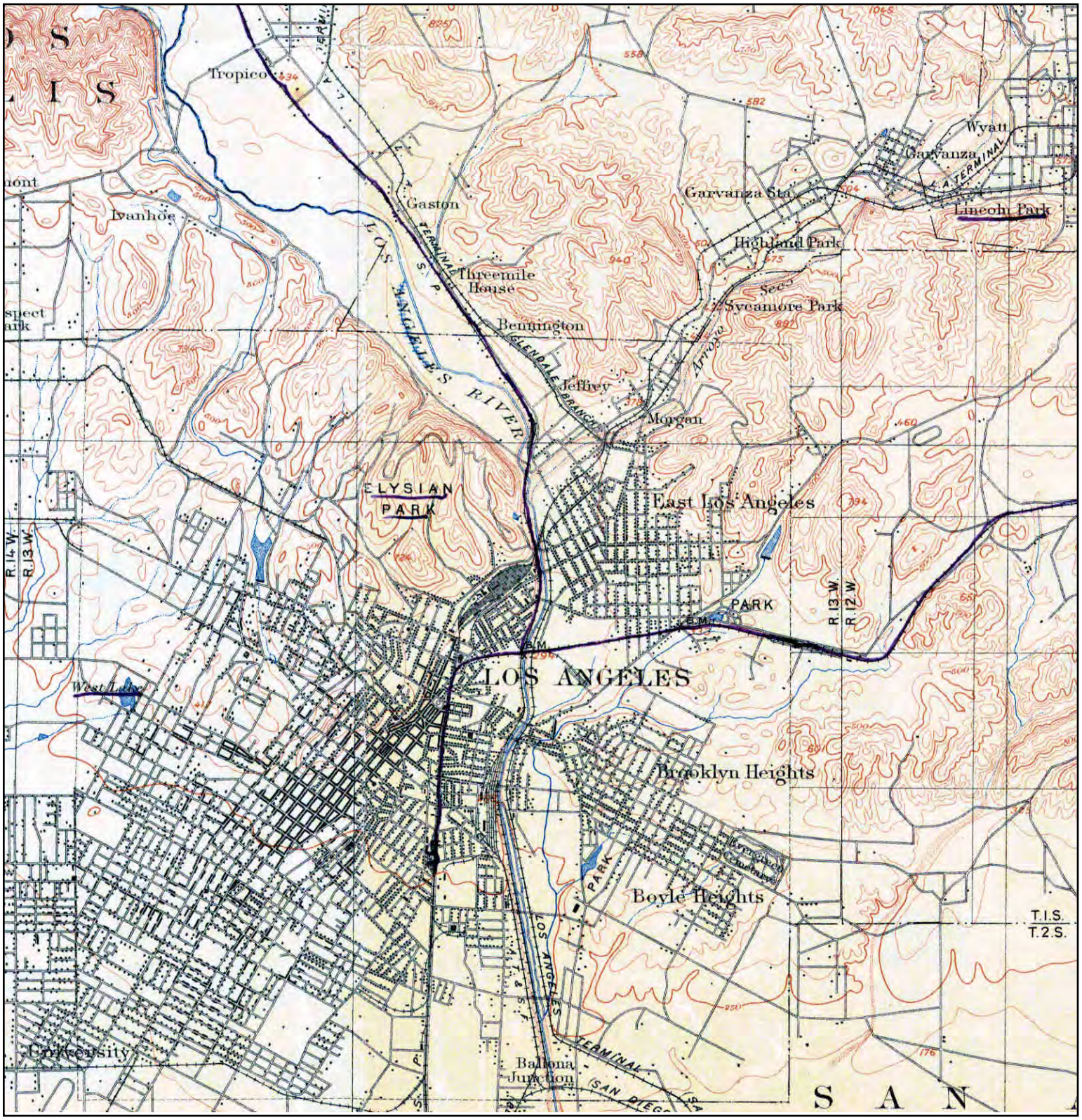
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Historical Topographic Map



N	TARGET QUAD NAME: PASADENA MAP YEAR: 1900 SERIES: 15 SCALE: 1:62500	SITE NAME: Water Wheel ADDRESS: 1745 North Spring Street Los Angeles, CA 90012 LAT/LONG: 34.0702 / -118.2257	CLIENT: GeoSyntec Consultants CONTACT: J. S. Rowlands INQUIRY#: 3348112.4 RESEARCH DATE: 06/20/2012

Historical Topographic Map



N	TARGET QUAD NAME: LOS ANGELES MAP YEAR: 1900 SERIES: 15 SCALE: 1:62500	SITE NAME: Water Wheel ADDRESS: 1745 North Spring Street Los Angeles, CA 90012 LAT/LONG: 34.0702 / -118.2257	CLIENT: GeoSyntec Consultants CONTACT: J. S. Rowlands INQUIRY#: 3348112.4 RESEARCH DATE: 06/20/2012

Historical Topographic Map

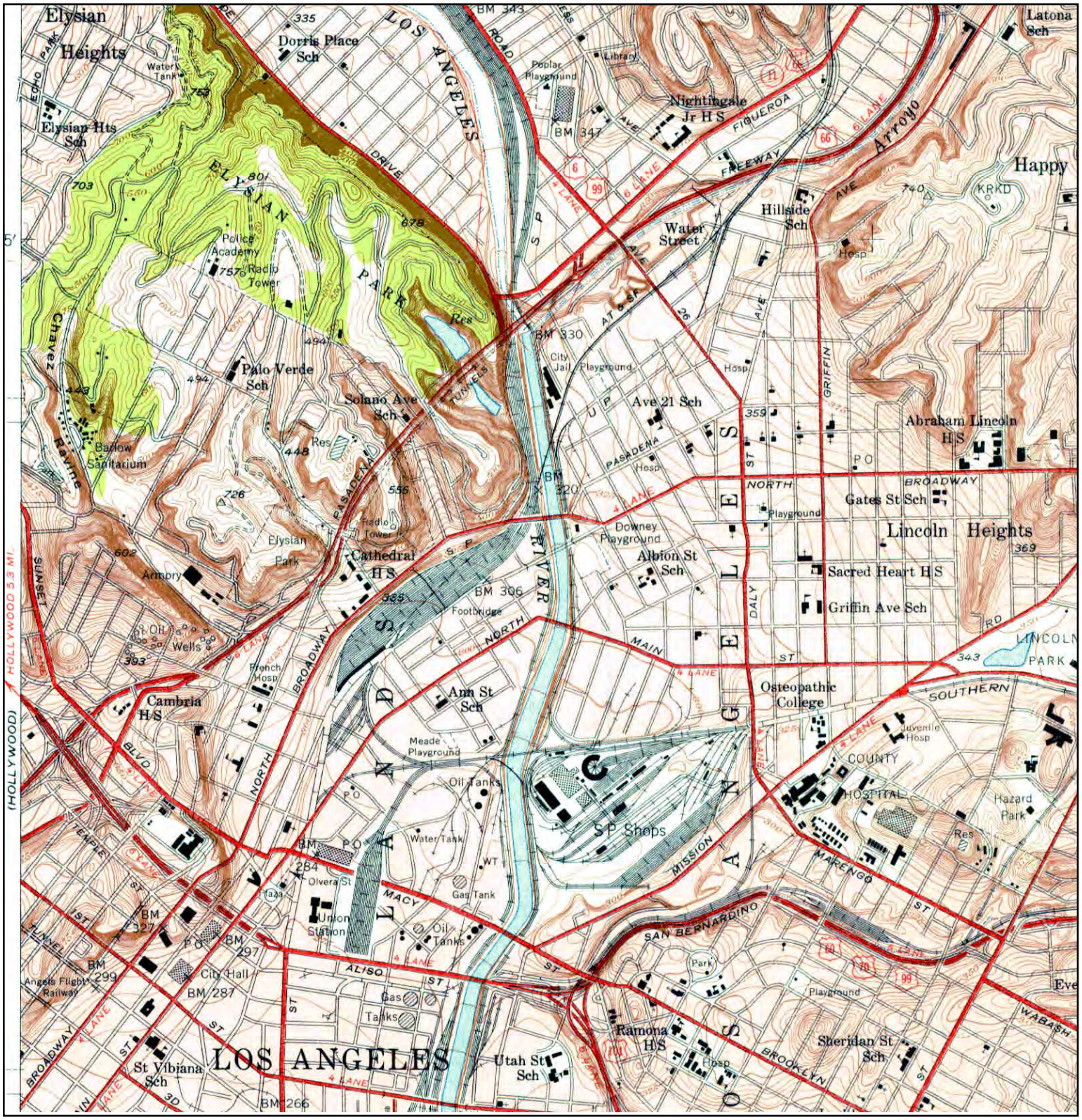

SAN FERNANDO
TUJUNGA
SUNLAND
EX MISSION
BURBANK
SAN RAFAEL
GLENDALE
PASADENA
SAN PASQUAL
SANTA ANITA
LOS FELIZ
HOLLYWOOD
LOS ANGELES
EAST LOS ANGELES
SAN FRANCISQUITO
LA BREA
RODEO DE LAS AGUAS
LAS CIENAGAS
LA BALLONA
PASO DE LA TIJERA
SAUSAL
REDONDO
SANTA GERTRUDIS
LOS COYOTES
SAN PEDRO
Strawberry Pk.
San Gabriel Pk.
Mt. Lowe
Mt. Wilson
Verdugo Mountains
Santa Monica Mountains
San Rafael Hills
Los Angeles River
Tujunga Wash
Pacific
Southern
Santa Fe
Monterey
Hollywood
Sherman
Colegrove
Beverly
Wilcox
Wilshire
Manhattan
Inglewood
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Centinela
Wildeson
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Gardena
Rosecrans
Strawberry Park
Howard Summit
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Little Tujunga Canyon
Big Tujunga Canyon
Devils Canyon
Sawpit Canyon
Santa Anita Canyon
Eaton Canyon
Millard Canyon
Verdugo Canyon
Hospital Canyon
Fernando
Valley
Tujunga Wash
Verdugo Mountains
Los Angeles River
Cahuenga Pk.
Santa Monica Mountains
Sepulveda Canyon
San Rafael Hills
Strawberry Pk.
San Gabriel Pk.
Mt. Lowe
Mt. Wilson
Devils Canyon
Sawpit Canyon
Santa Anita Canyon
Eaton Canyon
Millard Canyon
Verdugo Canyon
Hospital Canyon
Tujunga Canyon
Little Tujunga Canyon
Big Tujunga Canyon

Historical Topographic Map



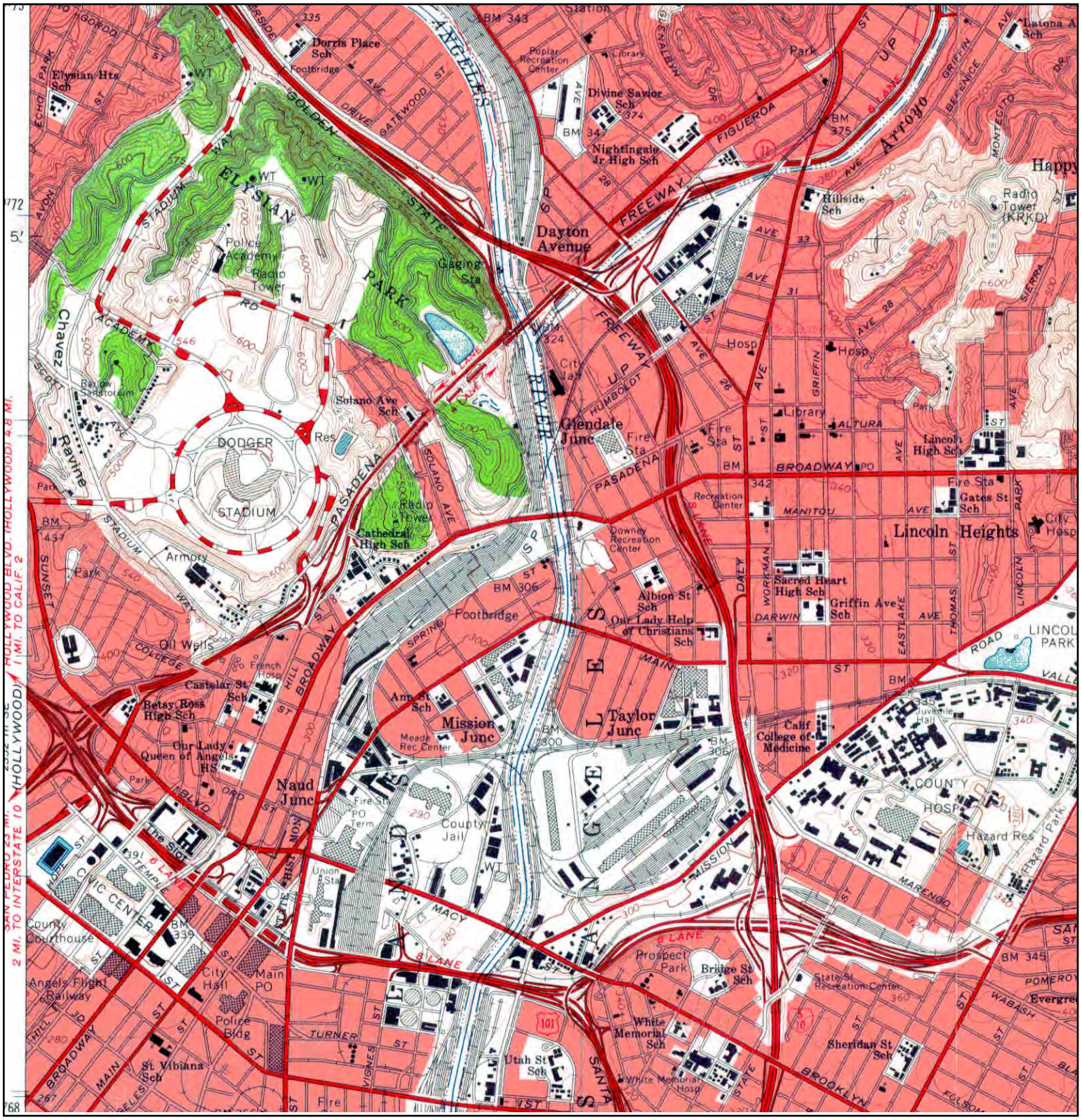
N	TARGET QUAD NAME: LOS ANGELES MAP YEAR: 1928 SERIES: 6 SCALE: 1:24000	SITE NAME: Water Wheel ADDRESS: 1745 North Spring Street Los Angeles, CA 90012 LAT/LONG: 34.0702 / -118.2257	CLIENT: GeoSyntec Consultants CONTACT: J. S. Rowlands INQUIRY#: 3348112.4 RESEARCH DATE: 06/20/2012

Historical Topographic Map



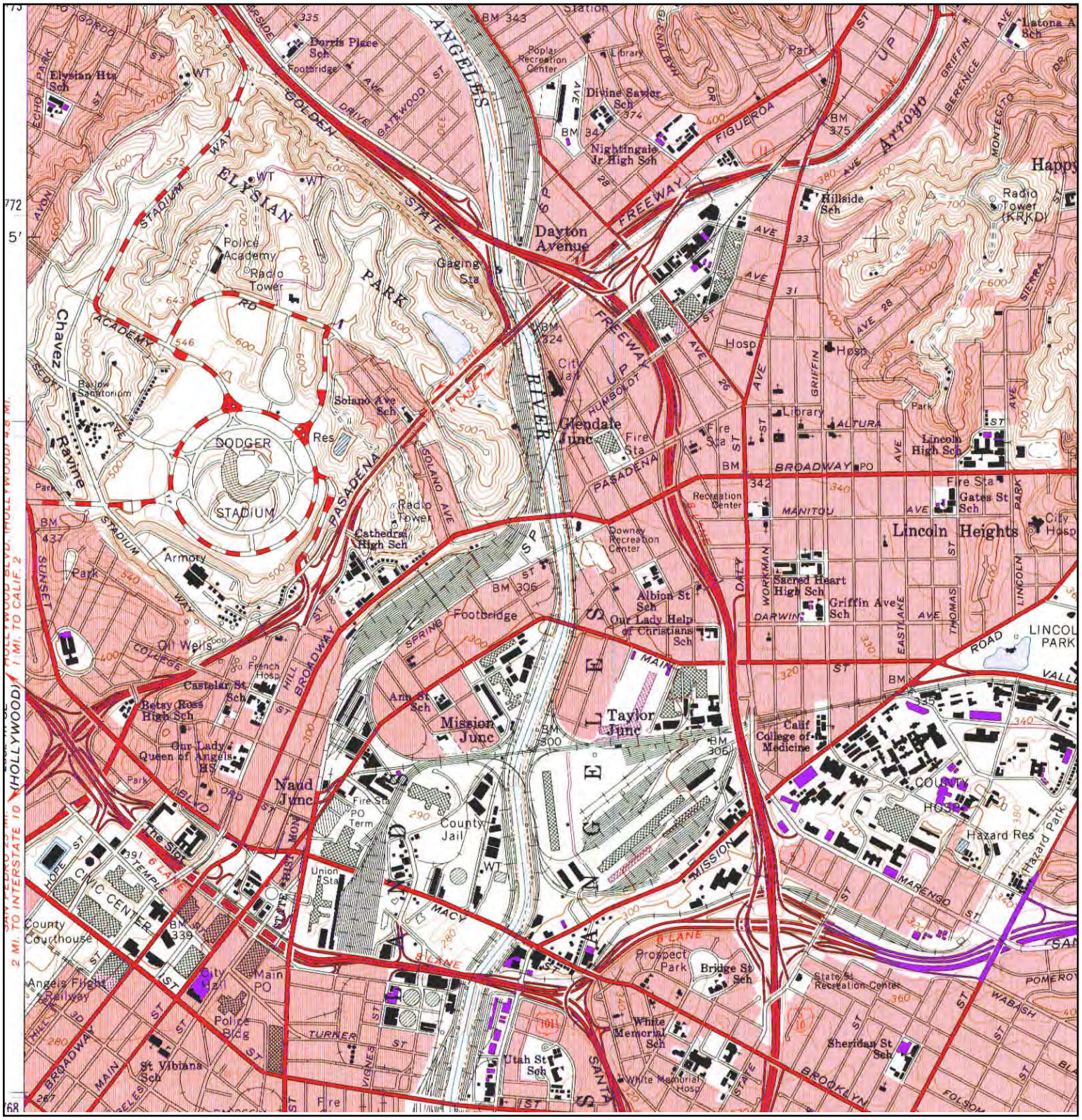
N	TARGET QUAD NAME: LOS ANGELES MAP YEAR: 1953 SERIES: 7.5 SCALE: 1:24000	SITE NAME: Water Wheel ADDRESS: 1745 North Spring Street Los Angeles, CA 90012 LAT/LONG: 34.0702 / -118.2257	CLIENT: GeoSyntec Consultants CONTACT: J. S. Rowlands INQUIRY#: 3348112.4 RESEARCH DATE: 06/20/2012

Historical Topographic Map



N	TARGET QUAD NAME: LOS ANGELES MAP YEAR: 1966 SERIES: 7.5 SCALE: 1:24000	SITE NAME: Water Wheel ADDRESS: 1745 North Spring Street Los Angeles, CA 90012 LAT/LONG: 34.0702 / -118.2257	CLIENT: GeoSyntec Consultants CONTACT: J. S. Rowlands INQUIRY#: 3348112.4 RESEARCH DATE: 06/20/2012

Historical Topographic Map

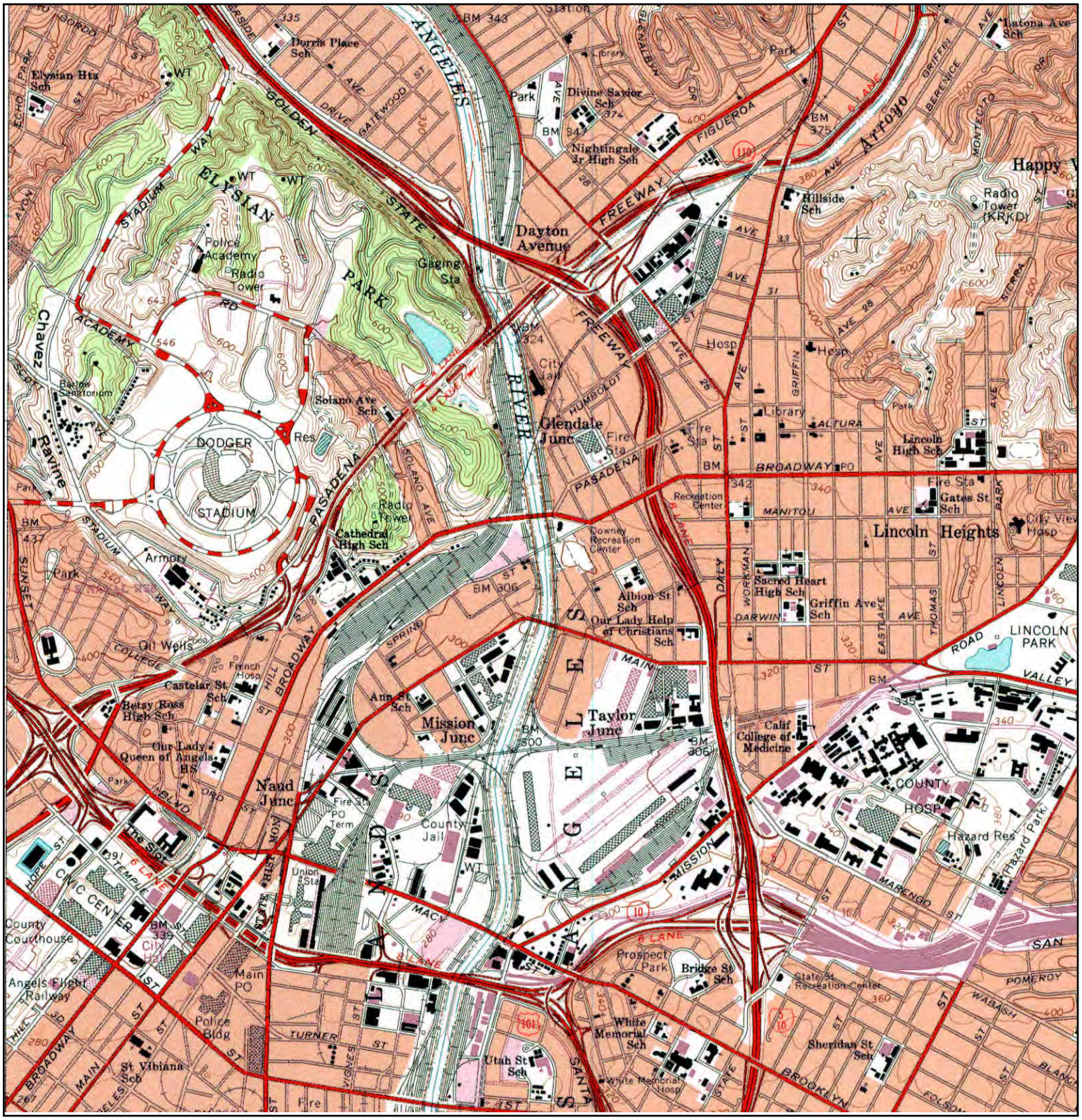


N	TARGET QUAD NAME: LOS ANGELES MAP YEAR: 1972 PHOTOREVISED FROM :1966 SERIES: 7.5 SCALE: 1:24000	SITE NAME: Water Wheel ADDRESS: 1745 North Spring Street Los Angeles, CA 90012 LAT/LONG: 34.0702 / -118.2257	CLIENT: GeoSyntec Consultants CONTACT: J. S. Rowlands INQUIRY#: 3348112.4 RESEARCH DATE: 06/20/2012

Historical Topographic Map


LOS ANGELES RIVER
Dodger Stadium
Elysian Park
Dayton Avenue
Glendale Junc
Taylor Junc
Mission Junc
Yard Junc
Lincoln Heights
Lincoln Park
Hazard Park
Prospect Park
Civic Center
Police Academy
Radio Tower
Cathedral High Sch
Sacred Heart High Sch
Griffin Ave Sch
Albion St Sch
Our Lady Help of Christians Sch
Recreation Center
Downey Recreation Center
Fire Sta
Library
Hosp
County Jail
County Courthouse
Main PO
Union Sta
Angels Flight Railway
Utah St Sch
Bridge St Sch
State St Recreation Center
Sheridan St Sch
White Memorial Hosp
Hillside Sch
Lincoln High Sch
Catea St Sch
Griffin Ave Sch
Calif College of Medicine
COUNTY HOSP
Radio Tower (KRKD)
Happy V
Laguna Ave Sch
Divine Savior Sch
Nightingale Jr High Sch
Dorris Place Sch
Elysian Hts Sch
Solano Ave Sch
Barlow Sanatorium
Arroyo
Figueroa
Broadway
Pasadena
Stadium Way
Elysian Park Ave
Academy
Chavez Ravine
Huntington Dr
Griffin Ave
Daly
Workman
Thomas
Lincoln
Eastlake Ave
Darwin
Manitou
Valley
Mission
Marengo
Macy
Main
Spring
Hill
Broadway
Hope
Temple
Olympic
Pomeroy
Wabash
Brooklyn
Folsom
Blanchard
Sierra Vista
Montecito
Griffin
Serenade
Laguna
Park
Ave
St
Rd
Blvd
Pl
Dr
Way
Ter
Ct
Sta
Res
Junc
Sch
Hosp
PO
Rec
Ctr
Jr
High
Fire
Jail
Courthouse
Railway
Recreation
Center
Tower
Hall
Medicine
Memorial
Bridge
Prospect
Sheridan
Utah
Union
Angels
Flight
Courthouse
Civic
Center
Dodger
Stadium
Elysian
Park
Chavez
Ravine
Lincoln
Heights
Lincoln
Park
Hazard
Park
Glendale
Junc
Taylor
Junc
Mission
Junc
Yard
Junc
Dayton
Avenue
Los
Angeles
River
Pasadena
Freeway
Santa
Ana
Freeway
Harbor
Freeway
Arroyo
Seco
Parkway
6 LANE
8 LANE
BM 343
BM 324
BM 308
BM 306
BM 300
BM 375
BM 437
BM 342
BM 340
BM 335
BM 320
BM 360
BM 339
BM 280
BM 267
BM 330
BM 340
BM 400
BM 360
BM 320

Historical Topographic Map



N	TARGET QUAD	SITE NAME: Water Wheel	CLIENT: GeoSyntec Consultants
	NAME: LOS ANGELES	ADDRESS: 1745 North Spring Street	CONTACT: J. S. Rowlands
	MAP YEAR: 1994	Los Angeles, CA 90012	INQUIRY#: 3348112.4
	REVISED FROM :1966	LAT/LONG: 34.0702 / -118.2257	RESEARCH DATE: 06/20/2012
	SERIES: 7.5		
	SCALE: 1:24000		

Water Wheel
1745 North Spring Street
Los Angeles, CA 90012

Inquiry Number: 3348112.5
June 20, 2012

The EDR Aerial Photo Decade Package

EDR® Environmental Data Resources Inc

440 Wheelers Farms Road
Milford, CT 06461
800.352.0050
www.edrnet.com

EDR Aerial Photo Decade Package

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Date EDR Searched Historical Sources:

Aerial Photography June 20, 2012

Target Property:

1745 North Spring Street

Los Angeles, CA 90012

Year	***Scale***	***Details***	***Source***
1928	Aerial Photograph. Scale: 1"=500'	Flight Year: 1928	Fairchild
1938	Aerial Photograph. Scale: 1"=555'	Flight Year: 1938	Laval
1947	Aerial Photograph. Scale: 1"=666'	Flight Year: 1947	Fairchild
1956	Aerial Photograph. Scale: 1"=400'	Flight Year: 1956	Fairchild
1965	Aerial Photograph. Scale: 1"=666'	Flight Year: 1965	Fairchild
1976	Aerial Photograph. Scale: 1"=666'	Flight Year: 1976	Teledyne
1989	Aerial Photograph. Scale: 1"=666'	Flight Year: 1989	USGS
1994	Aerial Photograph. Scale: 1"=500'	/Composite DOQQ - acquisition dates: 1994	EDR
2005	Aerial Photograph. Scale: 1"=500'	Flight Year: 2005	EDR



INQUIRY #: 3348112.5

YEAR: 1928

= 500'

N


INQUIRY #: 3348112.5
YEAR: 1938
= 555'
N


INQUIRY #: 3348112.5
YEAR: 1947
= 666'
N


INQUIRY #: 3348112.5
YEAR: 1956
= 400'
N


INQUIRY #: 3348112.5
YEAR: 1965
= 666'
N


INQUIRY #: 3348112.5
YEAR: 1976
= 666'
N


INQUIRY #: 3348112.5
YEAR: 1989
= 666'
N


INQUIRY #: 3348112.5
YEAR: 1994
= 500'
N


INQUIRY #: 3348112.5
YEAR: 2005
= 500'
N

Appendix G
Hydrology

Geosyntec consultants

3415 S. Sepulveda Blvd., Suite 500
Los Angeles, CA 90034
PH 310.957.6100
FAX 310.957.6101
www.geosyntec.com

Technical Memorandum

Date:	27 June 2013
To:	Jonathan Riker, ICFI
From:	Rebecca Batchelder, Geosyntec Consultants
Subject:	Hydrology and Water Quality Section for EIR Water Wheel Project

1. INTRODUCTION

The Water Wheel Project (the "Project") will divert water from the Los Angeles River, lifting the water through the use of an approximately 70-foot water wheel, and distributing the water for beneficial reuse. The Project Site ("Site") has two general work areas - the wheel itself will be installed at 1796 N. Baker Street ("Water Wheel Site"), and the side channel will be located within the channel of the Los Angeles River ("LA River") between the Broadway Street and Springs Street bridges ("Diversion Site").

The diversion will be enabled through the use of an approximately 6-foot high inflatable dam in the LA River channel, which has the ability to rise and fall through a computerized control system. When the dam is in the inflated position, the pooled water will be diverted through side channel that will be bored into the west bank of the river, immediately upstream of the dam. The side channel will direct LA River water to power the water wheel. After hitting the blades, over 99% of the flow will be directed into a continuation of the side channel pipe and flow back into the main channel of the LA River. The pipe will re-enter the channel less than 100 feet downstream from the diversion point.

Installation of project components will take place on currently impervious surfaces, so no additional impervious cover will be added as a result of the Project. Some impervious cover may be replaced with pervious landscaped surfaces.

This Report describes the environmental and regulatory setting of the Project as they pertain to water resources as well as the potential adverse impacts of the proposed Project on existing hydrological and water quality characteristics of the Site and its vicinity. Hydrology and water

quality mitigation measures intended to reduce potential impacts to a less than significant level are provided where appropriate.

Data used to prepare this section came from various sources, including the Los Angeles River Basin Plan, the City of Los Angeles General Plan, and Los Angeles Municipal Code.

2. ENVIRONMENTAL SETTING

The Project Site ("Site") is located within the Los Angeles River Watershed, on and adjacent to the LA River in the heart of Downtown Los Angeles (see Figure 1). Land use immediately surrounding the Site is primarily industrial and transportation (see Figure 2). The terrain of the Water Wheel Site is relatively flat.

This section describes existing hydrology and water quality conditions of the Site and vicinity.

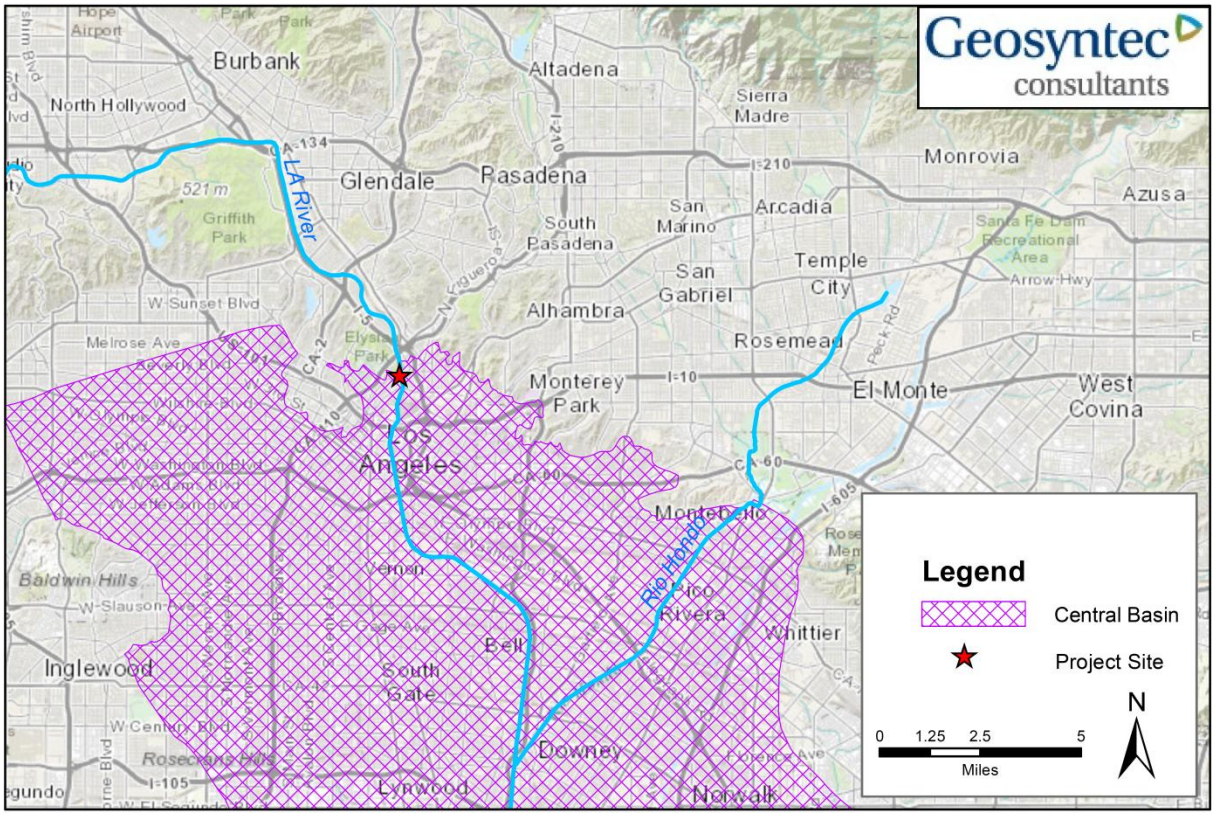


Figure 1. Project Site and Surrounding Area

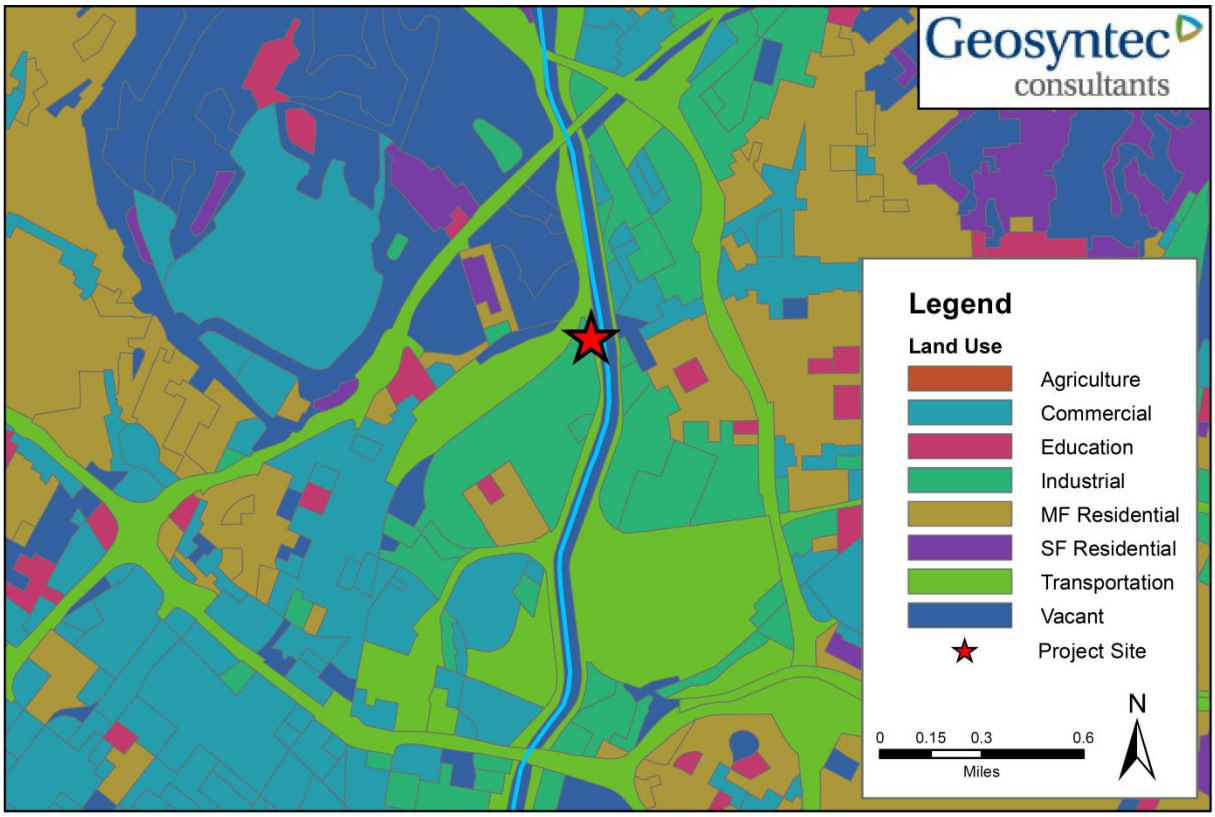


Figure 2. Land Use Surrounding Project Site

2.1 Existing Drainage Patterns

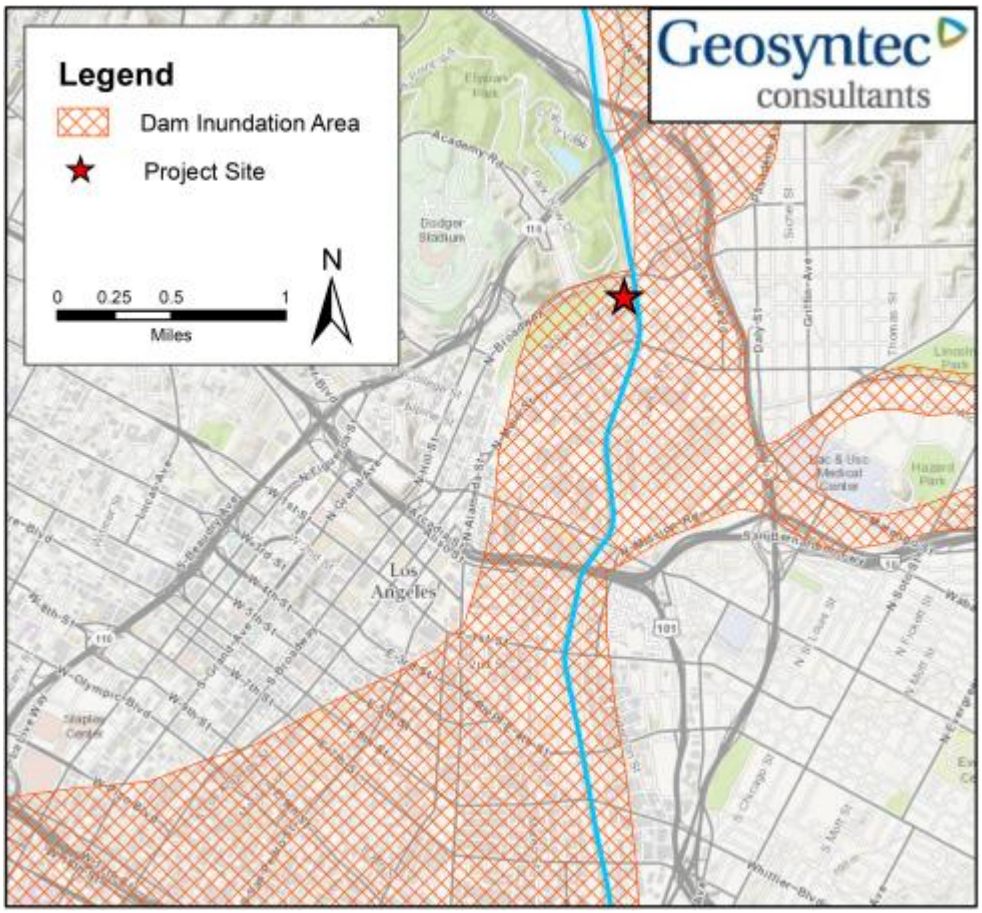
The existing Site slopes from north to south, with a total elevation drop of approximately five feet across the length of the property. The Site has no drain inlets or underground stormwater drainage system; therefore, runoff sheet flows overland to the LA River.

2.2 Regional Flooding

The Diversion Site, being within the LA River, which was designed as a flood control channel, is by necessity within the within a Special Flood Hazard Area subject to a 1 percent annual chance of flooding. However, the Water Wheel Site is located within FEMA unshaded Zone X (FEMA, 2008), which is defined as an area outside the 0.2% annual chance floodplain (i.e., 500-year floodplain).

The Site is not located within a Landslide Hazard Zone as mapped by the City of Los Angeles in their California Emergency Management Agency-approved Local Hazard Mitigation Plan.

Due to the large number of dams (22 in total) that were constructed in the Los Angeles area over the years to control flooding, over one third of the City of Los Angeles is subject to potential dam failure hazards. The Project Site is located on the northernmost edge of a dam failure hazard area as shown in Figure 3.



2.3 Surface Water Quality

Typical Surface Water Pollutants from Industrial Sites

Due to the urban setting, stormwater running off from the Site would be expected to contain pollutants commonly found on runoff from industrial sites including:

- Sediments (TSS and Turbidity): Excessive erosion, transport, and deposition of sediment in surface waters are a significant form of pollution resulting in major water quality problems. Sediment imbalances impair waters' designated uses. Excessive sediment can impair aquatic life by filling interstitial spaces of spawning gravels,

impairing fish food sources, filling rearing pools, and reducing beneficial habitat structure in stream channels. In addition, excessive sediment can cause taste and odor problems in drinking water supplies and block water intake structures. Sources of sediment from industrial properties include wind-blown dust and particles, and sediment tracked on site from vehicles.

- Nutrients (Phosphorus and Nitrogen (Nitrate+Nitrite-N, Ammonia-N, and Total Nitrogen): Nutrients of concern include the inorganic forms of nitrogen (nitrate, nitrite and ammonia) and phosphorus. Organic forms of nitrogen are associated with vegetative matter such as particulates from sticks and leaves. Inorganic forms of nitrogen include nitrate, nitrite and ammonia. Total Nitrogen (TN) is a measure of all nitrogen present, including inorganic and particulate forms. Phosphorus can be measured as total phosphorus (TP) or as dissolved phosphorus. Dissolved phosphorus is the more bioavailable form of phosphorus. TP is often composed mostly of soil-related particulate phosphorus. Eutrophication due to excessive nutrient input can lead to changes in algae, benthic, and fish communities; extreme eutrophication can cause hypoxia or anoxia, resulting in fish death. Surface algal scum, water discoloration, and the release of toxins from sediment can also occur. The likely sources of nutrients associated with industrial properties are: fertilizers in runoff from landscaped areas, pet wastes, atmospheric deposition from industry and automobile emissions, and soil erosion.
- Trace Metals (Aluminum, Copper, Lead, and Zinc): The primary sources of trace metals in stormwater are typically commercially available metals used in transportation (e.g. automobiles), buildings, and infrastructure. Metals are also found in fuels, adhesives, paints, and other coatings. Metals are a source of concern because of the potential for toxic effects on aquatic life and the potential for groundwater contamination. High metal concentrations can lead to bioaccumulation in fish and shellfish and affect the beneficial uses of receiving waters.
- Pathogens (Bacteria, Viruses, and Protozoa): Runoff that flows over land, such as urban runoff, can mobilize pathogens, including bacteria and viruses. The presence of pathogens in runoff can impair receiving waters and contaminate drinking water sources. Sources of pathogens in urban areas include pets and other wildlife, leaky sanitary sewer pipes, or human fecal wastes.
- Petroleum Hydrocarbons (Oil and Grease and PAHs): The sources of oil, grease, and other petroleum hydrocarbons include spillage fuels and lubricants, discharge of domestic and industrial wastes, atmospheric deposition, and runoff. Runoff can be contaminated by leachate from asphalt roads, wearing of tires, and deposition from automobile exhaust. Petroleum hydrocarbons, such as polycyclic aromatic hydrocarbons (PAHs), can bioaccumulate in aquatic organisms from contaminated water, sediments, and food; they are toxic to aquatic life at low concentrations.

Hydrocarbons can persist in sediments for long periods of time and result in adverse impacts on the diversity and abundance of benthic communities. Hydrocarbons can be measured as total petroleum hydrocarbons (TPH), oil and grease, or as individual groups of hydrocarbons, such as PAHs.

- Trash & Debris: Trash (such as paper, plastic, polystyrene packing foam, and aluminum materials) and biodegradable organic debris (such as leaves, grass cuttings, and food waste) are general waste products on the landscape that can be entrained in urban runoff. The presence of trash and debris may have a significant impact on the recreational value of a water body and aquatic habitat. Excess organic matter can create a high biochemical oxygen demand in a water body and thereby lower its water quality. Also, in areas where stagnant water exists, the presence of excess organic matter can promote septic conditions resulting in the growth of undesirable organisms and the release of odorous and hazardous compounds such as hydrogen sulfide.

Section 303(d) List of Impaired and Threatened Waters

Under Section 303(d) of the 1972 Clean Water Act, states, territories and authorized tribes are required to develop a list of waters where required pollution controls are not sufficient to attain or maintain applicable water quality standards. Reach 2 of the Los Angeles River (Carson Street to N. Figueroa Street) runs through the Diversion Site and is included on California's §303(d) list for ammonia, coliform, copper, lead, nutrients, oil and trash.

Total Maximum Daily Loads are developed for contaminants in 303(d)-listed water bodies. The Regional Board has established a number of TMDLs for the Los Angeles River Watershed, including bacteria, metals, trash and nutrients. Compliance with TMDLs can be achieved through an array of BMPs required by the National Pollutant Discharge Elimination System permit. The TMDL document categorizes the practices as end-of-pipe full capture structural controls, partial capture control systems, and institutional controls.

For a more detailed discussion of the regulatory framework for 303(d) listed waters and TMDLs, refer to section 3.

2.4 Groundwater

The Site is located within the Central Basin. The Central Basin extends approximately 270 square miles over Central and East Los Angeles. The California Department of Water Resources (1961) divided the Central Basin into four sections; the Los Angeles and Montebello Forebays, which occupy the northern portion of the basin, the Whittier Area, a small portion in the eastern segment of the basin, and the Pressure Area, the largest section occupying the southern half of the basin. The Site is located in the Pressure Area.

Recharge to the basin occurs in the two forebays where the aquifer is unconfined, through direct percolation of precipitation, stream flow, and applied water. The Whittier Area and Pressure Area are confined aquifer systems and therefore contribute minimally to aquifer recharge and instead are replenished from the up-gradient forebay areas and adjacent groundwater basins. In the Pressure Area, the aquifers are separated by thick aquitards, which protect groundwater from surface contamination.

The depth of the Central Basin ranges from 1,600 to more than 2,200 feet. Total storage in the Central Basin is estimated to be approximately 13.8 million acre feet. It is an adjudicated basin, with rights set at 267,900 AFY. The amount of the adjudicated water rights that can be pumped each year is limited to approximately 80 percent of the total adjudicated amount (217,367 acre feet per year).

Water quality in the Central Basin aquifer is generally good. Volatile organic compounds (VOCs), primarily tetrachlororoethylene (PCE) and trichloroethylene (TCE), are present in the Central Basin and have impacted many production wells. However, most of the wells that have the VOCs do not exceed drinking water quality standards. Those with higher levels require treatment prior to use as drinking water (MWD, 2007). TDS content in the subbasin ranges from 200 to 2,500 mg/l according to data from 293 public supply wells. The average for these 293 wells is 453 mg/l (CDWR, 2004).

Based on the focused research of historical and regulatory documents and databases, potential shallow groundwater contaminants associated with historic Site use and surrounding properties include the following:

- Petroleum hydrocarbons
- Volatile organic compounds (VOCs)
- Semi volatile organic compounds (SVOCs, including PAHs)
- Metals
- Poly-chlorinated biphenyls (PCBs)
- Pesticides and herbicides
- Methane

The potential presence of petroleum hydrocarbons, VOCs and SVOCs is based upon the historic Site use and the long-term use of the adjoining property used for storage of petroleum products. The potential presence of metals, PCBs, pesticides and herbicides is based upon the long-term use of the Site as a rail line/rail spur facility where these contaminants are often associated with historic operations and detected in shallow or surficial soils. The potential presence of PAHs and methane is based upon data obtained from adjoining properties.

2.5 Beneficial Uses

The phrase "beneficial uses" refers to the various ways water can be used. The Regional Water Quality Control Board (RWQCB) designates beneficial uses for surface and groundwater. Together with water quality objectives for specific beneficial uses, these beneficial uses form the basis of developing water quality standards. Taken directly from the Los Angeles Basin Plan, the beneficial uses (potential, existing, and intermittent) for the Los Angeles River specifically include:

- Ground Water Recharge (GWR): Uses of water for natural or artificial recharge of groundwater for purposes of future extraction, maintenance of water quality, or halting saltwater intrusion into freshwater aquifers.
- Non-Contact Water Recreation (REC2): Uses of water for recreational activities involving proximity to water, but not normally involving body contact with water, where ingestion of water is reasonably possible. These uses include, but are not limited to, picnicking, sunbathing, hiking, beachcombing, camping, boating, tidepool and marine life study, hunting, sightseeing, or aesthetic enjoyment in conjunction with the above activities.
- Preservation of rare and endangered species (RARE): Uses of waters that support habitats necessary for the survival and successful maintenance of plant or animal species established under state and/or federal law as rare, threatened, or endangered.
- Municipal and Domestic Supply (MUN): Uses of water for community, military, or individual water.
- Water Contact Recreation (REC1): Uses of water for recreational activities involving body contact with water, where ingestion of water is reasonably possible. These uses include, but are not limited to, swimming, wading, water skiing, skin and scuba diving, surfing, white water activities, fishing or use of natural hot springs.
- Warm Freshwater Habitat (WARM): Uses of water that support warm water ecosystems including, but not limited to, preservation or enhancement of aquatic habitats, vegetation, fish, or wildlife, including invertebrates.
- Wetland Habitat (WET): Uses of water that support wetland ecosystems, including, but not limited to, preservation or enhancement of wetland habitats, vegetation, fish, shellfish, or wildlife, and other unique wetland functions which enhance water quality such as providing flood and erosion control.
- Wildlife Habitat (WILD): Uses of water that support terrestrial ecosystems including, but not limited to, preservation or enhancement of terrestrial habitats, vegetation, wildlife (e.g. mammals, birds, reptiles, amphibians, invertebrates), or wildlife water and food sources.
- Fish Spawning (SPWN): Uses of water that support high quality aquatic habitats suitable for reproduction and early development of fish.

- Industrial Service Supply (IND): Uses of water for industrial activities that do not depend primarily on water quality, including, but not limited to, mining, cooling water supply, hydraulic conveyance, gravel washing, fire protection, and oil well re-pressurization.
- Industrial Process Supply (PROC): Uses of water for industrial activities that depend primarily on water quality.
- Marine Habitat (MAR): Uses of water that support marine ecosystems, including, but not limited to, preservation or enhancement of marine habitats, vegetation such as kelp, fish, shellfish, or wildlife (e.g., marine mammals, shorebirds).
- Fish Migration (MIG): Uses of water that support habitats necessary for migration, acclimatization between fresh water and salt water, and protection of aquatic organisms that are temporary inhabitants of waters within the region.
- Shell Fish Harvesting (SHELL): Uses of water that support habitats suitable for the collection of crustaceans and filter-feeding shellfish (e.g., clams, oysters, and mussels) for human consumption, commercial, or sport purposes.

Beneficial uses for groundwater in the Central Basin include:

- Agricultural Supply (AGR): Uses of water for farming, horticulture, or ranching including, but not limited to, irrigation, stock watering, or support of vegetation for range grazing.
- Municipal and Domestic Supply (MUN): Uses of water for community, military, or individual water.
- Industrial Service Supply (IND): Uses of water for industrial activities that do not depend primarily on water quality, including, but not limited to, mining, cooling water supply, hydraulic conveyance, gravel washing, fire protection, and oil well re-pressurization.
- Industrial Process Supply (PROC): Uses of water for industrial activities that depend primarily on water quality.

3. REGULATORY SETTING

3.1 Clean Water Act

In 1972, the Federal Water Pollution Control Act [later referred to as the Clean Water Act (CWA)] was amended to require National Pollutant Discharge Elimination System (NPDES) permits for the discharge of pollutants to waters of the United States from any point source. In 1987, the CWA was amended to require that the United States Environmental Protection Agency (USEPA) establish regulations for permitting municipal and industrial stormwater

discharges under the NPDES permit program. The USEPA published final regulations regarding stormwater discharges on November 16, 1990. The regulations require that municipal separate storm sewer system (MS4) discharges to surface waters be regulated by a NPDES permit.

In addition, the CWA requires each state to adopt water quality standards approved by the USEPA for receiving water bodies. Water quality standards consist of designated beneficial uses for a particular receiving water body (e.g. wildlife habitat, agricultural supply, fishing etc.) along with water quality criteria necessary to support those uses. Water quality criteria are prescribed concentrations, or levels, of constituents – such as lead, suspended sediment, and fecal coliform bacteria – or narrative statements which represent the quality of water that support a particular use.

CWA Section 303(d) - TMDLs

When designated beneficial uses of a particular receiving water body are being compromised by water quality, Section 303(d) of the CWA requires identifying and listing that water body as "impaired". Once a water body has been deemed impaired, a Total Maximum Daily Load (TMDL) must be developed for the impairing pollutant(s). A TMDL is an estimate of the total load of pollutants from point, non-point, and natural sources that a water body may receive without exceeding applicable water quality standards (with a "factor of safety" included). Once established, the TMDL allocates the loads among current and future pollutant sources to the water body.

The US EPA has delegated implementation and enforcement of the CWA in California to the State of California.

CWA Section 401 and 404 – Dredge and Fill Materials

Section 404 of the Clean Water Act is a program that regulates the discharge of dredged and fill material into waters of the United States, including wetlands. Activities in waters of the United States that are regulated under this program include fill for development (including physical alterations to drainages to accommodate storm drainage, stabilization, and flood control improvements), water resource projects (such as dams and levees), infrastructure development (such as highways and airports), and conversion of wetlands to uplands for farming and forestry.

Any person applying for a federal permit or license that may result in a discharge of pollutants into waters of the United States must obtain a state water quality certification that the activity complies with all applicable water quality standards, limitations, and restrictions. Subject to

certain limitations, no license or permit may be issued by a federal agency until the Section 401 certification has been granted. Further, no license or permit may be issued if certification has been denied. CWA Section 404 permits and authorizations are subject to section 401 certification by the RWQCBs. It is expected that this project will qualify for a Nationwide 43 404 Permit (Stormwater Management Facility) because it involves less than ½ acre of nontidal waters and less than 300 linear feet of stream bed.

CWA Section 408 - Alteration of Corps Project

Any proposed alteration/modification to an existing United States Army Corps of Engineers' (USACE) structure (ie: levee, flood risk reduction project) must obtain a Section 408 Permit to ensure that the project will not compromise the hydraulic capacity of the structure. There are two levels of review under Section 408: Major 408 and Minor 408. Major 408 reviews are for projects that involve a modification of the physical characteristics or the hydraulic capacity of the levee. Minor 408 reviews are for projects that either result in temporary impacts to levees or are within the critical area of the levee, but do not permanently change the physical characteristics or hydraulic conditions of the levee.

3.2 California Porter-Cologne Act

California's primary statute governing water quality and water pollution issues with respect to both surface waters and groundwater is the Porter-Cologne Water Quality Control Act of 1970 (Porter-Cologne Act). The Porter-Cologne Act grants the State Water Resources Control Board (SWRCB) and RWQCBs power to protect water quality; it is the primary vehicle for implementing California's responsibilities under the federal Clean Water Act. The Porter-Cologne Act grants the SWRCB and RWQCBs authority and responsibility to adopt plans and policies to regulate discharges of waste to surface and groundwater, to regulate waste disposal sites, and to require cleanup of discharges of hazardous materials and other pollutants. The Porter-Cologne Act also establishes reporting requirements for unintended discharges of any hazardous substance, sewage, or oil or petroleum product.

Each RWQCB must formulate and adopt a water quality control plan (Basin Plan) for its region. The Basin Plan must conform to the policies set forth in the Porter-Cologne Act and state water policy established by the SWRCB. To implement state and federal law, the Basin Plan establishes beneficial uses for surface and groundwaters in the region and sets forth narrative and numeric water quality objectives to protect those beneficial uses. The Porter-Cologne Act also allows a RWQCB to include water discharge prohibitions within its regional plan applicable to particular conditions, areas, or types of waste.

The Project Site is located within the boundary of the Los Angeles RWQCB (Region 4). The Basin Plan for the Los Angeles Region (LARWQCB, 1994, as amended) designates beneficial uses for receiving waters and provides numeric and narrative criteria for a range of water quality constituents applicable to certain receiving water bodies and groundwater basins within the Los Angeles region. Specific criteria are provided for the larger, designated water bodies within the region as well as general criteria or guidelines for ocean waters, bays and estuaries, inland surface waters, and groundwaters. Waters not specifically listed (generally smaller tributaries) are assumed to have the same beneficial uses as the streams, lakes, or reservoirs to which they are tributary. In general, the narrative criteria require that degradation of water quality does not occur due to increases in pollutant loads that will adversely impact the designated beneficial uses of a water body. For example, the Los Angeles Basin Plan requires that "inland surface waters shall not contain suspended or settleable solids in amounts which cause a nuisance or adversely affect beneficial uses as a result of controllable water quality factors."

The Basin Plan also contains water quality criteria for groundwater basins. For example, the Basin Plan requires that "groundwaters shall not contain taste or odor producing substances in concentrations that cause nuisance or adversely affect beneficial uses."

3.2 MS4 Permit Planning and Land Development Program

In 2012, the Los Angeles RWQCB issued an NPDES Permit and Waste Discharge Requirements (Permit No. CAS004001, Order No. R4-2012-0175) under the CWA and the Porter-Cologne Act for discharges of urban runoff in public storm drains in Los Angeles County. The Permittees are the Los Angeles County cities and the County (collectively "the Co-Permittees").

The 2012 NPDES Permit includes design requirements for new development and significant redevelopment in Part VI.D.7.c (New Development/Redevelopment Project Performance Criteria).

3.4 Construction General Permit

Pursuant to the CWA Section 402(p), requiring regulations for permitting certain stormwater discharges, the SWRCB issued a statewide general NPDES Permit for stormwater discharges from construction sites [(NPDES No. CAR000002) Water Quality Order 2009-0009-DWQ, SWRCB NPDES General Permit for Stormwater Discharges Associated with Construction Activity (adopted by the SWRCB on September 2, 2009)]. Discharges of stormwater from construction sites with a disturbed area of one or more acres are required to either obtain individual NPDES permits for stormwater discharges or to be covered by the Construction

General Permit. Due to the complexity of obtaining an individual permit, virtually all construction projects utilize the Construction General Permit. Coverage under the Construction General Permit is accomplished by completing a construction site risk assessment to determine appropriate coverage level as well as preparing a Stormwater Pollution Prevention Plan (SWPPP), including site maps, a Construction Site Monitoring Program (CSMP), and sediment basin design calculation. All of these documents must be electronically submitted to the SWRCB for General Permit coverage. The primary objective of the SWPPP is to identify and apply proper construction, implementation, and maintenance of BMPs to reduce or eliminate pollutants in stormwater discharges and authorized non-stormwater discharges from the construction site during construction. The SWPPP also outlines the monitoring and sampling program required for the construction site to verify compliance with discharge Numeric Action Levels (NALs) set by the Construction General Permit.

3.5 General Waste Discharge Requirements for Dischargers of Groundwater From Construction and Project Dewatering

The Los Angeles Regional Water Quality Control Board has issued a General NPDES Permit and General Waste Discharge Requirements (WDRs) (Order No. R4-2008-0032, NPDES No. CAG994004) governing construction-related dewatering discharges within the Project development areas (the "General Dewatering Permit.") This permit addresses discharges from temporary dewatering operations associated with construction and permanent dewatering operations associated with development. The discharge requirements include provisions mandating notification, sampling and analysis, and reporting of dewatering and testing-related discharges. The General Dewatering Permit authorizes such construction-related activities so long as all conditions of the permit are fulfilled. Compliance with the requirements of the General Dewatering Permit is used as one method to evaluate Project construction-related impacts on surface water quality.

3.6 Discharge of Fill or Dredge Materials

3.7 Lake or Streambed Alteration Agreement (LSAA)

The California Department of Fish and Wildlife (CDFW) is responsible for conserving, protecting, and managing California's fish, wildlife, and native plant resources. To meet this responsibility, the law requires the proponent of a Project that may impact a river, stream, or lake to notify the CDFW before beginning the Project. This includes rivers or streams that flow at least periodically or permanently through a bed or channel with banks that support fish or other aquatic life and watercourses having a surface or subsurface flow that support or have supported riparian vegetation.

Section 1602 of the Fish and Game Code requires any person who proposes a Project that will substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake or use materials from a streambed to notify the CDFW before beginning the Project. Similarly, under section 1602 of the Fish and Game Code, before any State or local governmental agency or public utility begins a construction Project that will: 1) divert, obstruct, or change the natural flow or the bed, channel, or bank of any river, stream, or lake; 2) use materials from a streambed; or 3) result in the disposal or deposition of debris, waste, or other material containing crumbled, flaked, or ground pavement where it can pass into any river, stream, or lake, it must first notify the CDFW of the proposed Project. If the CDFW determines that the Project may adversely affect existing fish and wildlife resources, a Lake or Streambed Alteration Agreement is required.

3.8 City of Los Angeles Low Impact Development Ordinance

Los Angeles' LID ordinance became effective in May 2012. The main purpose of this law is to ensure that development and redevelopment projects mitigate runoff in a manner that captures rainwater at its source, while utilizing natural resources. Project applicants are required to prepare and implement a stormwater mitigation plan when their projects fall into any of these categories:

- Single-family hillside residential developments
- Housing developments of 10 or more dwelling units (including single family tract developments)
- Industrial/Commercial developments with one acre or more of impervious surface area
- Automotive service facilities
- Retail gasoline outlets
- Restaurants
- Parking lots of 5,000 square feet or more of surface area or with 25 or more parking spaces
- Projects with 2,500 square feet or more of impervious area that are located in, adjacent to, or draining directly to designated Environmentally Sensitive Areas (ESA)

4. SIGNIFICANCE CRITERIA

Criteria for determining the significance of impacts are based upon criteria contained in Appendix G of the CEQA Guidelines. The Project could have a significant effect upon hydrology and water quality if the Project:

a) Violates any water quality standards or waste discharge requirements.
b) Substantially depletes groundwater supplies or interferes substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted).
c) Substantially alters the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site.
d) Substantially alters the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site.
e) Creates or contributes runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.
f) Otherwise substantially degrades water quality.
g) Places housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map.
h) Places within a 100-year flood hazard area structures which would impede or redirect flood flows.
i) Exposes people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam.
j) Exposes people to inundation by seiche, tsunami, or mudflow?

5. HYDROLOGIC AND WATER QUALITY IMPACTS

The Project will not place housing within the 100-year flood hazard area. Additionally, because the Project is located well away from steeply sloped areas and large water bodies, there is no opportunity for mudflows or seiche in the Project area. Consequently, these effects (Criteria g and j) are found have no impacts and are not evaluated further within this report.

5.1 Violate Water Quality Standards or Waste Discharge Requirements, or Degrade Water Quality (Criteria a and f)

Construction

The greatest potential to violate water quality standards or degrade water quality during construction would result from discharges of soil, spills or other constituents directly into the river, uncontrolled runoff of contaminated storm water into the river and discharges of contaminated water from dewatering into the river.

Project construction will be in and adjacent to the river channel. Consequently, there is a potential for siltation and sedimentation in the river channel from earthwork associated with construction. There is also the potential that fuel leaks and spills from construction equipment could enter the waterway. However, in order to receive authorization for the CWA Section 404 permit, the project applicant will have to demonstrate that it has (1) taken steps to avoid wetland impacts; (2) minimized potential impacts on wetlands; (3) provided compensation for any remaining unavoidable impacts.

In areas of active construction, soil erosion may also result in discharges of sediment-laden stormwater runoff into receiving waters if not properly controlled. Additional sediment input to the downstream surface water bodies from construction of the Project could contribute to degradation of downstream water quality and impairment of beneficial uses. Sediment can also be a carrier for other pollutants, such as heavy metals, nutrients, pathogens, oil and grease, fuels and other petroleum products. In addition to sediment, other pollutants associated with the various phases of construction, such as trash, paint, solvents, sanitary waste from portable restrooms, and concrete curing compounds, can discharge into and impair receiving waters if released during construction.

Therefore, Project construction period activities could generate stormwater runoff that may cause or contribute to a violation of water quality standards or waste discharge requirements, provide substantial additional sources of polluted runoff, or otherwise substantially degrade the receiving water quality.

The General Construction Permit includes conditions and requirements with the specific purpose of minimizing the discharge of contaminants from a construction site into surface and ground water.

Measures will also be implemented to protect receiving waters from dewatering and construction related non-stormwater discharges. Such discharges will be implemented in compliance with the Los Angeles RWQCB's General Waste Discharge Requirements (WDRs) under Order No. R4-2008-0032 (NPDES No. CAG994004) governing construction-related dewatering discharges within the Project development areas. Typical BMPs for construction dewatering include infiltration of clean groundwater; on-site treatment using suitable treatment technologies; on-site or transport offsite for sanitary sewer discharge with local sewer district approval; or use of a sedimentation bag for small volumes of localized dewatering.

Implementing specific measures highlighted in Mitigation Measure Hyd-1 would mitigate impacts that could result in violating water quality standards or waste discharge requirements from Project construction to a less than significant level.

Project Operation

The Project would result in a new side channel carrying river water through the project site. The operation of the proposed Project could change pollutant load through alteration of stormwater chemistry due to a change in land use. The property is currently being used for maintenance of MTA vehicles. While some maintenance will be required during the operation of the wheel and the water treatment system, it expected to be less frequent than current maintenance activities and fewer vehicles entering and exiting the site. This could potentially decrease the load of metals and petroleum hydrocarbons in stormwater runoff.

Additionally, the 80 gallons per minute of water in the Los Angeles River that gets pumped out of the channel by the Water Wheel will undergo filtration and UV treatment to remove particles and pathogens. The water will be treated to level to allow it to be safely used for spray irrigation. As such, conditions resulting in violating water quality standards or waste discharge requirements are not expected as a result of the Project.

5.2 Deplete Groundwater Supplies or Interfere with Recharge (Criteria b)

Dewatering activities may be required during excavation both for the side channel in the LA River and the Water Wheel housing pit. However, this activity will only remove shallow groundwater for a short period of time during construction of the Project and would not impact groundwater supplies which are drawn from deeper segments of the aquifer.

The proposed Site overlays the Central Los Angeles groundwater basin. Redeveloping the mostly paved site will not impact recharge as natural recharge to the basin.

Consequently there would be no impact on groundwater supplies.

5.3 Drainage Pattern Alteration Resulting in Erosion or Siltation on or Offsite (Criteria c)

During construction of the Project, construction activities would result in land-disturbing activities such as demolition of existing pavement, excavation, and trenching for utility infrastructure installation. These types of construction activities could result in minor temporary alterations of drainage patterns that expose soil to increased rates of erosion during Project construction periods. These minor alterations to drainage patterns would not result in significant erosion or siltation on or offsite, especially with the implementation of Hyd-1.

Post-construction (e.g., operational), though a new side channel to the river will be present on the project site, the overall drainage patterns will not be greatly altered from their current state. The post-construction flows through the side channel will not substantially increase

rates of erosion or siltation. Additionally erosion from storm water runoff will not increase due to the fact that the impermeable area of the site will remain the same or be reduced. Impacts would be less-than-significant.

5.4 Drainage Pattern Alteration Resulting in Flooding or Exceedance of Existing Stormwater Facility Capacity (Criteria d and e)

As stated above, the proposed Project would not substantially change the current drainage pattern or increase runoff volume. The flows to the existing storm water drainage system will stay the same or slightly decrease so the capacity of the existing system will not be exceeded as a result of the Project. There are no new storm water pollution sources associated with the project so the Project would not result in substantional additional polluted runoff. Therefore, Project impacts associated with storm water quantity and quality would be less than significant.

5.5 Places Structures Within a 100-yr Flood Hazard Area Which Would Impede or Redirect Flows (Criteria h)

No structures associated with the Project will be located in the 100-year flood hazard area other than the inflatable dam and new side channel that will connect to the LA River, The inflatable dam that will be placed in the LA River as part of this project will be designed to pool water during low flow conditions. When storms are predicted to occur in the contributing area to the Project Site, programed controls will automatically lower the dam and release stored water so that flood flows can pass unimpeded with no impact to the pre-project water surface elevations. Controls will be programmed to have redundancy to ensure the dam is in the lowered position when elevated river flows reach the area of the Site.

All proposed designs will be approved by the USACE through the Section 408 permit process. It is anticipated that this project will qualify for a Minor 408 because it is not expected to permanently altar the hydraulic capacity of the river. The USACE's existing HEC-RAS model, which is used by FEMA to determine flood hazard areas, will be used to evaluate all channel alterations to ensure they will not result in changes to the water surface elevation during flood conditions. Potential impacts related to impeding or redirecting flood flows would be less than significant.

5.6 Exposes People or Structures to a Significant Risk of Loss, Injury or Death Involving Flooding, Including Flooding as a Result of the Failure of A Levee or Dam (Criteria i)

As discussed in Section 2.1, the Project Site is located at the edge of a dam failure inundation zone. This is not expected to create a significant risk for visitors to the site, because inundation depths are shallower at the borders of inundation areas, and areas outside of the inundation area are within less than one half mile from the project site in a direction that is easily accessible by foot.

The structures that would be installed within the dam failure inundation area could sustain flood damage in the event of a dam failure. The water wheel structure will be exposed to water during operations and the damage to this structure from being exposed to flood waters would likely be minor. Ancillary buildings and facilities would have water damage that could be costly, especially the electronics associated with the project. These structures would not be considered critical infrastructure and this impact would be considered less than significant.

6. MITIGATION MEASURES

The following mitigation measures will serve to reduce potential hydrology and water quality impacts associated with the Project to a less than significant level:

Hyd-1: Consistent with the requirements of the statewide Construction General Permit, the Project applicant shall prepare and implement a SWPPP designed to reduce potential adverse impacts to surface water quality through the Project construction period. The SWPPP shall be designed based on the assessed Project Risk Level to address the following objectives: (1) all pollutants and their sources, including sources of sediment associated with construction, construction site erosion and all other activities associated with construction activity are controlled; (2) where not otherwise required to be under a RWQCB permit, all non-storm water discharges are identified and either eliminated, controlled, or treated; (3) site BMPs are effective and result in the reduction or elimination of pollutants in stormwater discharges and authorized non-stormwater discharges from construction activity to the BAT/BCT standard; (4) calculations and design details as well as BMP controls for site run-on are complete and correct; and (5) stabilization BMPs installed to reduce or eliminate pollutants after construction are completed.

The SWPPP shall prepared by a Qualified SWPPP Developer. The SWPPP shall include the minimum BMPs required in Attachment D for the assessed Project Risk Level. The Project Risk Level would be determined as part of the Notice of Intent for coverage under the Construction General Permit. These include: BMPs for erosion and sediment control, site

management/housekeeping/waste management, management of non-stormwater discharges, infiltration and runoff controls, and BMP inspection/maintenance/repair activities.

The SWPPP shall include a construction site monitoring program that identifies requirements for dry weather visual observations of pollutants at all discharge locations, and as appropriate (depending on the Risk Level), sampling of the site effluent and receiving waters (receiving water monitoring is only required for some Risk Level 3 dischargers). A Qualified SWPPP Practitioner shall be responsible for implementing the BMPs at the site and performing all required monitoring and inspection/maintenance/repair activities. If the Project is Risk Level 2 or 3, the Project applicant shall also prepare a Rain Event Action Plan as part of the SWPPP.

The following are the types of BMPs that shall be implemented for the Project:

- Erosion Control BMPs
- Sediment Control BMPs
- Wind Erosion Control BMPs
- Tracking Controls
- Non-Stormwater Controls
- Waste Management and Materials Pollution Control BMPs

7. REFERENCES

FEMA, 2008. Flood Insurance Rate Map Community Panel 060137C1628F. September 26, 2008.

LACDPW, 2009. Los Angeles County Low Impact Development Standards Manual. Prepared by County of Los Angeles, Department of Public Works, January 2009.

California Department of Water Resources, 2004. California's Groundwater Bulletin 118 – Los Angeles County Coastal Plain Central Basin. Updated 2/27/04.

Metropolitan Water District, 2007. Groundwater Assessment Study, Report Number 1308.

RCRWQCB, 1995. Water Quality Control Plan, Los Angeles Region - Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties.

Appendix **H**
Native American Consultation

July 14, 2012

Mr. Dave Singleton
Program Analyst
Native American Heritage Commission
915 Capital Mall, Room 364
Sacramento, CA 95814

Dear Mr. Singleton:

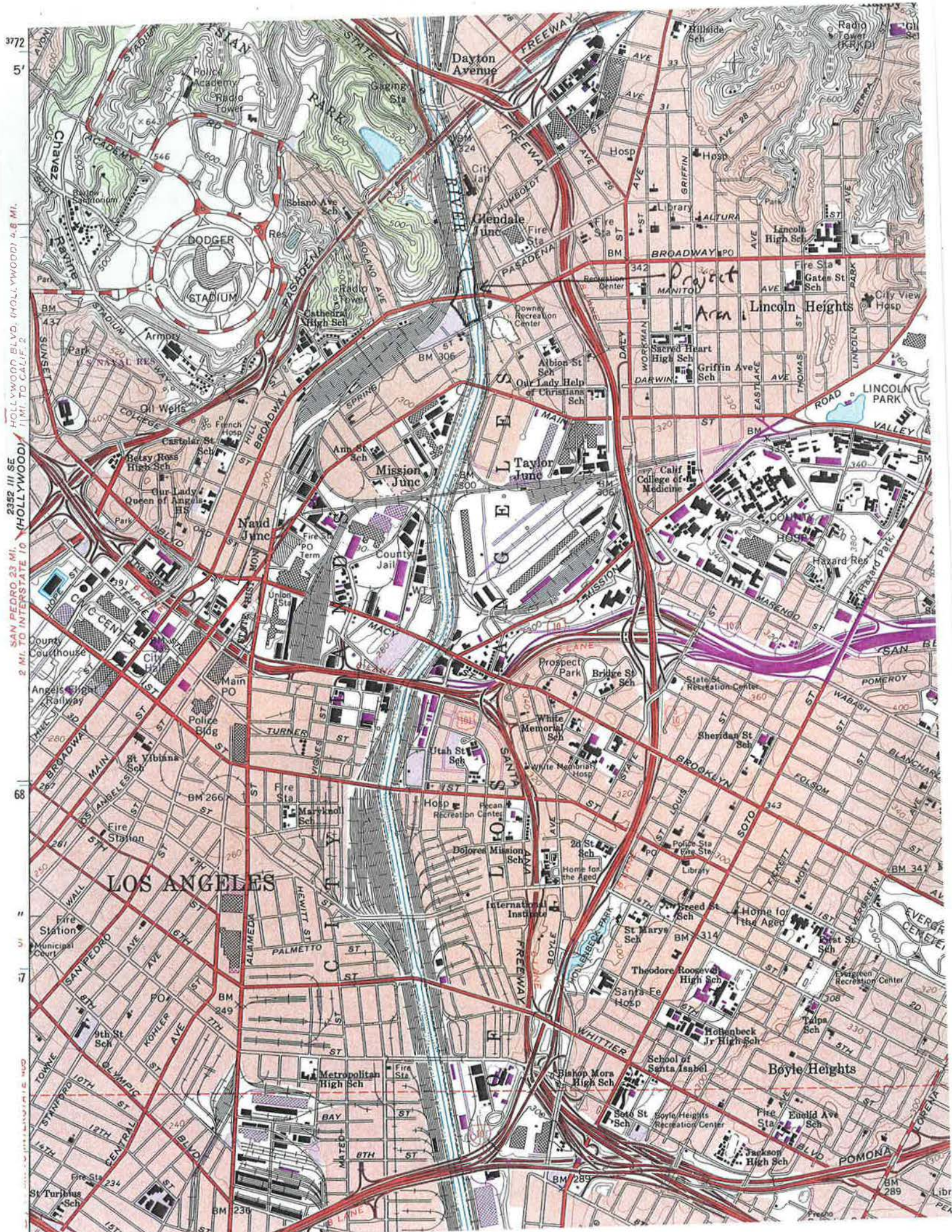
ICF requests a search of the Sacred Lands files for the proposed Los Angeles River Water Wheel Project located in Los Angeles, California. The project area is depicted on the attached portion of the Los Angeles 7.5-minute USGS Quadrangle map in an unsectioned portion of the Pueblo de Los Angeles, T 1 S, R 13 W, E, San Bernardino Baseline and Meridian.

Please provide a list of Native American individuals and organizations that may have additional information about sacred sites or Native American traditional cultural properties in or near the project area.

If you have any questions or need additional information, please call me at (213) 312-7154 or email at Mark.Robinson@icfi.com. Thank you.

Sincerely,

Mark Robinson
Senior Archaeologist, RPA


LOS ANGELES
Dodger Stadium
Dayton Avenue
Glendale Junc
Mission Junc
Taylor Junc
Naud Junc
Project Area
Lincoln Heights
Boyle Heights
Broadway
Hill Street
Spring Street
Main Street
Los Angeles River
Pasadena Freeway
Hollywood Freeway
Santa Ana Freeway
Harbor Freeway
Glendale Fire Sta
Police Academy
Radio Tower
Gaging Sta
Cathedral High Sch
Downey Recreation Center
Albion St Sch
Our Lady Help of Christians Sch
Sacred Heart High Sch
Griffin Ave Sch
Lincoln High Sch
Gates St Sch
City View Hosp
Lincoln Park
Ann St Sch
Betsy Ross High Sch
Our Lady Queen of Angels HS
Castelar St Sch
French Hosp
Oil Wells
Armory
Calif College of Medicine
County Hosp
Hazard Park
Hazard Res
County Jail
Union Sta
The Slot
Civic Center
County Courthouse
City Hall
Angels Flight Railway
Main PO
Police Bldg
Prospect Park
Bridge St Sch
State St Recreation Center
White Memorial Sch
White Memorial Hosp
Sheridan St Sch
Utah St Sch
St Vibiana Sch
Fire Station
Marvknoll Sch
Hosp
Pecan Recreation Center
Dolores Mission Sch
2d St Sch
Home for the Aged
International Institute
Police Sta
Library
Breed St Sch
St Marys Sch
First St Sch
Theodore Roosevelt High Sch
Evergreen Recreation Center
Santa Fe Hosp
Hollenbeck Jr High Sch
Talpa Sch
School of Santa Isabel
Bishop Mora High Sch
Soto St Sch
Boyle Heights Recreation Center
Euclid Ave Sch
Jackson High Sch
Metropolitan High Sch
9th St Sch
St Turibius Sch
Municipal Court
Fire Station
Fire Sta
Police Academy
Radio Tower
Solano Ave Sch
Chavez Ravine
Elysian Park
Arroyo Seco
Hillside Sch
Radio Tower (KRKD)
Griffin Ave
Broadway
Soto
Pomona Blvd
Whittier Blvd
Olympic Blvd
Sunset Blvd
Stadium Way
Academy Rd
Macy St
Mission Rd
Alameda St
Lyon Ave
Boyle Ave
Evergreen Cemetery
HOLLYWOOD BLVD, (HOLLYWOOD) 4.8 MI.
11 MI. TO CALIF. 2
SAN PEDRO 23 MI.
2 MI. TO INTERSTATE 10
2352 III SE
(HOLLYWOOD)
3772
5'

August 28, 2013

Gabrieleno Band of Mission Indians
Andrew Salas, Chairperson
P.O. Box 393
Covina, CA 91723

RE: Los Angeles River Water Wheel Project

Dear Mr. Salas:

ICF International is conducting archaeological research for the proposed Los Angeles River Water Wheel Project. The project area is located in the City of Los Angeles, and is depicted on the attached portion of the Los Angeles 7.5-minute USGS Quadrangle map. The project site occurs at the Broadway Bridge crossing, north of the Spring Street Bridge, near Los Angeles State Historic Park.

The purpose of the proposed project is to divert water from the LA River to create an aesthetic focal point for the surrounding neighborhood. The proposed project location is near the site of a historic water wheel that operated in the mid 19th century to deliver water to the Pueblo de Los Angeles.

As part of our research, ICF International is contacting interested parties, including Native American groups and individuals, to help identify any prehistoric sites, sacred sites, or traditional cultural properties located in the vicinity of the project area. ICF International has contacted the Native American Heritage Commission (NAHC) for a review of the Sacred Lands files; no sacred lands in this vicinity are recorded in the NAHC files. Archaeological survey of the area found no prehistoric sites.

If you have comments, questions, or need additional information about this project, please contact me at (213) 312-1754 or email at Mark.Robinson@icfi.com. We request to receive your comments by September 30th, 2013. Thank you for your time and assistance.

Sincerely,

Mark C. Robinson, RPA
Senior Archaeologist

Encl: Project Location Map

August 28, 2013

Gabrieleno/Tongva San Gabriel Band of Mission Indians
Anthony Morales, Chairperson
P.O. Box 693
San Gabriel, CA 91778

RE: Los Angeles River Water Wheel Project

Dear Mr. Morales:

ICF International is conducting archaeological research for the proposed Los Angeles River Water Wheel Project. The project area is located in the City of Los Angeles, and is depicted on the attached portion of the Los Angeles 7.5-minute USGS Quadrangle map. The project site occurs at the Broadway Bridge crossing, north of the Spring Street Bridge, near Los Angeles State Historic Park.

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Sincerely,

Mark C. Robinson, RPA
Senior Archaeologist

Encl: Project Location Map

August 28, 2013

Gabrielino Tongva Tribe
Bernie Acuna, Co-Chairperson
Linda Candelaria, Co-Chairperson
P.O. Box 180
Bonsall, CA 92003

RE: Los Angeles River Water Wheel Project

Dear Ms. Acuna and Ms. Candelaria:

ICF International is conducting archaeological research for the proposed Los Angeles River Water Wheel Project. The project area is located in the City of Los Angeles, and is depicted on the attached portion of the Los Angeles 7.5-minute USGS Quadrangle map. The project site occurs at the Broadway Bridge crossing, north of the Spring Street Bridge, near Los Angeles State Historic Park.

The purpose of the proposed project is to divert water from the LA River to create an aesthetic focal point for the surrounding neighborhood. The proposed project location is near the site of a historic water wheel that operated in the mid 19th century to deliver water to the Pueblo de Los Angeles.

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Sincerely,

Mark C. Robinson, RPA
Senior Archaeologist

Encl: Project Location Map

August 28, 2013

Ti'At Society/Inter-Tribal Council of Pimu
Cindi M. Alvitre, Chairwoman-Manisar
3094 Mace Avenue, Apt. B
Costa mesa, CA 92626

RE: Los Angeles River Water Wheel Project

Dear Ms. Alvitre:

ICF International is conducting archaeological research for the proposed Los Angeles River Water Wheel Project. The project area is located in the City of Los Angeles, and is depicted on the attached portion of the Los Angeles 7.5-minute USGS Quadrangle map. The project site occurs at the Broadway Bridge crossing, north of the Spring Street Bridge, near Los Angeles State Historic Park.

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Sincerely,

Mark C. Robinson, RPA
Senior Archaeologist

Encl: Project Location Map

August 28, 2013

Gabrielino Tongva Indians of California Tribal Council
Robert F. Dorame, Tribal Chair/Cultural Resources
P.O. Box 490
Bellflower, CA 90707

RE: Los Angeles River Water Wheel Project

Dear Mr. Dorame:

ICF International is conducting archaeological research for the proposed Los Angeles River Water Wheel Project. The project area is located in the City of Los Angeles, and is depicted on the attached portion of the Los Angeles 7.5-minute USGS Quadrangle map. The project site occurs at the Broadway Bridge crossing, north of the Spring Street Bridge, near Los Angeles State Historic Park.

The purpose of the proposed project is to divert water from the LA River to create an aesthetic focal point for the surrounding neighborhood. The proposed project location is near the site of a historic water wheel that operated in the mid 19th century to deliver water to the Pueblo de Los Angeles.

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Sincerely,

Mark C. Robinson, RPA
Senior Archaeologist

Encl: Project Location Map

August 28, 2013

LA City/County Native American Indian Commission
Ron Andrade, Director
3175 West 6th Street, Rm. 403
Los Angeles, CA 90020

RE: Los Angeles River Water Wheel Project

Dear Mr. Andrade:

ICF International is conducting archaeological research for the proposed Los Angeles River Water Wheel Project. The project area is located in the City of Los Angeles, and is depicted on the attached portion of the Los Angeles 7.5-minute USGS Quadrangle map. The project site occurs at the Broadway Bridge crossing, north of the Spring Street Bridge, near Los Angeles State Historic Park.

The purpose of the proposed project is to divert water from the LA River to create an aesthetic focal point for the surrounding neighborhood. The proposed project location is near the site of a historic water wheel that operated in the mid 19th century to deliver water to the Pueblo de Los Angeles.

As part of our research, ICF International is contacting interested parties, including Native American groups and individuals, to help identify any prehistoric sites, sacred sites, or traditional cultural properties located in the vicinity of the project area. ICF International has contacted the Native American Heritage Commission (NAHC) for a review of the Sacred Lands files; no sacred lands in this vicinity are recorded in the NAHC files. Archaeological survey of the area found no prehistoric sites.

If you have comments, questions, or need additional information about this project, please contact me at (213) 312-1754 or email at Mark.Robinson@icfi.com. We request to receive your comments by September 30th, 2013. Thank you for your time and assistance.

Sincerely,

Mark C. Robinson, RPA
Senior Archaeologist

Encl: Project Location Map

August 28, 2013

Gabrielino Tongva Nation
Sam Dunlap, Cultural Resources Director
P.O. Box 86908
Los Angeles, CA 90086

RE: Los Angeles River Water Wheel Project

Dear Mr. Dunlap:

ICF International is conducting archaeological research for the proposed Los Angeles River Water Wheel Project. The project area is located in the City of Los Angeles, and is depicted on the attached portion of the Los Angeles 7.5-minute USGS Quadrangle map. The project site occurs at the Broadway Bridge crossing, north of the Spring Street Bridge, near Los Angeles State Historic Park.

The purpose of the proposed project is to divert water from the LA River to create an aesthetic focal point for the surrounding neighborhood. The proposed project location is near the site of a historic water wheel that operated in the mid 19th century to deliver water to the Pueblo de Los Angeles.

As part of our research, ICF International is contacting interested parties, including Native American groups and individuals, to help identify any prehistoric sites, sacred sites, or traditional cultural properties located in the vicinity of the project area. ICF International has contacted the Native American Heritage Commission (NAHC) for a review of the Sacred Lands files; no sacred lands in this vicinity are recorded in the NAHC files. Archaeological survey of the area found no prehistoric sites.

If you have comments, questions, or need additional information about this project, please contact me at (213) 312-1754 or email at Mark.Robinson@icfi.com. We request to receive your comments by September 30th, 2013. Thank you for your time and assistance.

Sincerely,

Mark C. Robinson, RPA
Senior Archaeologist

Encl: Project Location Map

August 28, 2013

Tongva Ancestral Territorial Tribal Nation
John Tommy Rosas, Tribal Administrator

RE: Los Angeles River Water Wheel Project

Dear Mr. Rosas:

ICF International is conducting archaeological research for the proposed Los Angeles River Water Wheel Project. The project area is located in the City of Los Angeles, and is depicted on the attached portion of the Los Angeles 7.5-minute USGS Quadrangle map. The project site occurs at the Broadway Bridge crossing, north of the Spring Street Bridge, near Los Angeles State Historic Park.

The purpose of the proposed project is to divert water from the LA River to create an aesthetic focal point for the surrounding neighborhood. The proposed project location is near the site of a historic water wheel that operated in the mid 19th century to deliver water to the Pueblo de Los Angeles.

As part of our research, ICF International is contacting interested parties, including Native American groups and individuals, to help identify any prehistoric sites, sacred sites, or traditional cultural properties located in the vicinity of the project area. ICF International has contacted the Native American Heritage Commission (NAHC) for a review of the Sacred Lands files; no sacred lands in this vicinity are recorded in the NAHC files. Archaeological survey of the area found no prehistoric sites.

If you have comments, questions, or need additional information about this project, please contact me at (213) 312-1754 or email at Mark.Robinson@icfi.com. We request to receive your comments by September 30th, 2013. Thank you for your time and assistance.

Sincerely,

Mark C. Robinson, RPA
Senior Archaeologist

Encl: Project Location Map

Appendix I
Comments and Responses

COMMENTS AND RESPONSES

A draft initial study/mitigated negative declaration (IS/MND) for the Bending the River Back into the City Project was circulated for a 30-day public review period beginning on October 14, 2013, and ending on November 14, 2013. Four comment letters were received and are included in this final IS/MND. No new significant environmental impacts or issues were raised during the comment period. A Notice of Intent to Adopt the IS/MND was published in the *Los Angeles Times* on October 17, 2013.

Parties who submitted comments on the draft IS/MND during the public review period are listed below.

LIST OF COMMENTERS

ID	Commenter	Date
1	Joyce Dillard	November 14, 2013
2	Lewis MacAdams, President/Founder Friends of the Los Angeles River	October 24, 2013
3	Nick Saponara, Development Review Manager Los Angeles County Metropolitan Transportation Authority	November 14, 2013
4	Patricia McPherson Grassroots Coalition	November 14, 2013

Comment Letter 1

Jim Doty <jim.doty@lacity.org>

Comments to 2013101041-MND Bending the River Back into the City Project due 11.14.2013

1 message

Joyce Dillard <dillardjoyce@yahoo.com> Thu, Nov 14, 2013 at 1:31 PM
Reply-To: Joyce Dillard <dillardjoyce@yahoo.com>
To: James Doty <Jim.Doty@lacity.org>

The properties listed are not under the City jurisdiction:

5409-001-900
5409-001-901
5414-016-903
5447-032-900

1-1

Metropolitan Transportation Authority MTA has a Memorandum of Understanding MOU with Southern California Regional Rail Authority SCRRA for inter-county rail transportation including a maintenance facility. (See CF 07-1656.)

1-2

Metrolink Maintenance Facility at Midway Yard occupies part of the proposed project.

1-3

There have been several Environmental Impact Reports on this property:

- Pasadena-Los Angeles Rail Transit Project
- Burbank-Glendale-Los Angeles Rail Transit Project
- Gold Line Phase II

1-4

You have cited none. There should be an Addendum to an existing Environmental Impact Report, not a separate Mitigated Negative Declaration with a different Lead Agency.

1-5

Federal Railroad Administration has not approved the use of this project nor have they approved entrance to railroad right-of-ways.

1-6

You state:

Project Description:

The proposed project would involve construction and operation of a water wheel, loosely modeled after the historic wheel that existed near the project location and would include excavation of a 1,300-cubic-yard pit and maintenance area for installation of the water wheel. It would also include construction of a side channel to the LA River, connecting the LA River to the water wheel pit and installation of an inflatable dam within the LA River channel, creating a water impoundment area upstream of the proposed inflatable dam. The purpose of the proposed project is to physically divert water from the LA River and create an aesthetic/educational statement, showing that the LA River can be used as a source of water. Additional purposes include enhancing connections between the surrounding community and the LA River; and providing a viable long-term non-potable irrigation water source for the State Park and other local demands.

1-7

Comments:

We see no legal jurisdiction for the City of Los Angeles Bureau of Engineering, as Lead Agency, for this project. The Authorities needed, both Federal and State, are limited, and frankly, deceptive to all the uses of these properties.

1-8

This is an art installation not a public works project. If the Project was a legal Water Public Works project, side channeling to the LA River would require the California Department of Fish and Wildlife to approve a change in the streambed. An inflatable dam would change the flow of the LA River.

1-9

LA River is not a source point for water in Los Angeles. It is a Flood Control Channel. The Upper LA River Watermaster has jurisdiction over the flow releases.

1-10

LA River has Total Daily Maximum Load TMDL established. It is not a source of non-potable irrigation source for water. The flow of the river is also regulated for fish and wildlife.

1-11

The LA River is under ORDER NO. R4-2012-0175 NPDES NO. CAS004001 (MS4 permit) including the LA County Flood Control District and 84 cities

1-12

including the City of Los Angeles. 1-12 cont'd.

California State Parks has jurisdiction over the State Park for decisions on irrigation on State property. 1-13

You state:

Purpose

The purpose of the proposed project is to support water conservation by providing a source of irrigation water for the Los Angeles State Historic Park (State Park) and other non-potable water demands. The proposed project will also create an aesthetic focal point for the surrounding neighborhood.

The proposed project aims to: 1-14

- *Physically divert water from the Los Angeles River (LA River) and create an aesthetic/educational statement, showing that the LA River can be used as a source of water;*
- *Create a water wheel, which would be loosely modeled after the historic wheel that existed near the project location;*
- *Enhance connections between the surrounding community, and the LA River; and*
- *Provide a viable long-term non-potable irrigation water source for the State Park and other nearby local demands.*

Comments:

We see no attempt to inquire on permitting, whether State of Federal, The design appears to be by an artist, not a qualified engineer. 1-15

Water treatment is under the jurisdiction of the California Department of Public Health. 1-16

This project is NOT an on-site water collection. This type of off-site collection is not defined in the California Building Safety Standards 2013 California Plumbing Code. 1-17

You state:

Project Elements

The proposed project would divert water from the LA River, lift the water by use of the water wheel, treat the water through filtration and UV disinfection, and then distribute the water for use. The diversion would require an approximately 6-foothigh inflatable dam to be installed in the LA River. The dam would be controlled by a computerized system. For operating the dam, it is anticipated that dual air blowers would be required to inflate/deflate the dam. Pooled water would extend approximately 1,220 feet upstream, creating a surface impoundment of approximately 16 acre-feet. The dam (and associated ponded water) would extend across the entire width of the LA River channel. During rain events, the dam would automatically be lowered, allowing stormwater flows to pass unimpeded. During low-flow conditions, the dam would be raised and pool water to a depth of 6 feet. When the dam is raised, pooled water would be diverted through a side channel that would be bored into the west bank of the river, immediately upstream of the dam. The side channel would direct LA River water to the water wheel, which would be entirely powered by the force of the diverted LA River flows. A small portion of these flows, approximately 80 gallons per minute, would be raised from the inlet tunnel in buckets that would be attached to the wheel. These buckets would lift the water approximately 60 feet and empty it into a collection trough. The collection trough would convey the water under gravity to storage tanks, which would connect to a distribution and treatment system. When demand for irrigation water exists, water would be directed through a 6-inch-diameter pipe, making it available for irrigation. When irrigation water is not required, the water would be diverted back to the LA River. After impacting the blades, more than 99% of the water would be directed into a return-side channel pipe and flow back into the LA River downstream of the dam.

Flows from the pipe would re-enter the channel less than 100 feet downstream from the diversion point.

1-18

Comments:

There is no consideration for the Public Health and Safety of individuals.

1-19

There is no consideration for potential spread of disease. There is no consideration for birds and wildlife. **1-20**

Other cities down river and the LA County Flood Control District would also have to deal with Public Health and Safety issues on the down flow as well as liability issues. **1-21**

<u>You state effects on the following categories:</u>

- Biological Resources
- Cultural Resources
- Geology/Soils
- Hydrology/Water Quality
- Mandatory Findings of Significance

1-22

<u>Comments:</u>

You affect most categories listed, not just the above. You have not considered the Methane Buffer Zone of the area or the oil and gas below the surface of the properties. **1-23**

The following categories would also be affected:

- Aesthetics
- Air Quality
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Land Use/Planning
- Mineral Resources
- Noise
- Public Services
- Transportation/Traffic
- Utilities/Service Systems

1-24

There should be a NO PROJECT ALTERNATIVE and that alternative should be chosen. **1-25**

The project is under the jurisdiction of the incorrect LEAD AGENCY for **1-26**

existing Environmental Impact Reports nor does it have the legal jurisdiction to proceed. **1-26 cont'd.**

Native Americans have not been consulted. **1-27**

Joyce Dillard
P.O. Box 31377
Los Angeles, CA 90031

Responses to Comment Letter 1

Comment 1-1

The properties listed are not under City jurisdiction:

5409-001-900

5409-001-901

5414-016-903

5447-032-900

Response: The water wheel site is located entirely within the city of Los Angeles. The parcel numbers listed by the commenter are under the following ownership:

- 5409-001-900 and 5409-001-901—Owned by the Los Angeles County Metropolitan Transportation Authority (Metro) (site of the proposed water wheel)
- 5414-016-903—Los Angeles State Historic Park (State Park) (not a part of the project)
    - 5447-032-900—Los Angeles River (LA River) parcels, owned by the City of Los Angeles (City), with permission granted to the U.S. Army Corps of Engineers (USACE) and Los Angeles County Flood Control District to operate flood protection structures..

The commenter does not raise an environmental concern that would change the findings of the IS/MND.

Comment 1-2

The commenter states that Metro has a Memorandum of Understanding (MOU) with the Southern California Regional Rail Authority (SCRRA) (for inter-county rail transportation, including a maintenance facility (see CF 07- 1656).

Response: Comment noted. According to City Council File 07-165, in 1992, the City entered into an agreement with the Los Angeles County Transportation Commission, now Metro, and SCRRA related to resolving SCRRA's and Metro's conformity with California Environmental Quality Act (CEQA) requirement at the Taylor Yard. The agreement imposed requirements on Metro to address the light rail facility at the Taylor Yard/Cornfields in the future. These requirements were not fulfilled, and the City investigated legal remedies to obtain enforcement of the obligations of Metro set forth in the 1992 agreement related to conformity with CEQA requirements. It is unclear whether these legal remedies were ever pursued, and the City Clerk closed the file in 2011 because of inactivity.

The commenter does not explain the relevance of this agreement to the project site and does not raise an environmental concern that would change the findings of the IS/MND.

Comment 1-3

The commenter states that the Metrolink maintenance facility at Midway Yard occupies part of the site for the proposed project.

Response: There is a Metro Gold Line maintenance facility located adjacent to the north side of the project site. This property is also owned by Metro. However, this property is not part of the project site,

and the proposed project would not result in any impacts that would impair use of the adjacent property or operations at the maintenance facility. The Midway Yard facility mentioned by the commenter is located farther to the north, near the intersection of the 5 and 110 freeways. The upper limits of the impoundment are located adjacent to this facility, but again, this property is not part of the project, and the project would not result in any significant impacts on this facility.

The commenter does not raise an environmental concern that would change the findings of the IS/MND. No changes to the IS/MND are required.

Comment 1-4

The commenter states that there have been several environmental impact reports (EIRs) for this property:

- *Pasadena-Los Angeles Rail Transit Project*
- *Burbank-Glendale-Los Angeles Rail Transit Project*
- *Gold Line Phase II*

The IS/MND cited none.

Response: The Pasadena-Los Angeles Rail Transit Project EIR dates back to 1989, and the Burbank-Glendale-Los Angeles Rail Transit Project EIR dates to 1992. Both contain minimal analysis of potential environmental impacts on properties at or near the project site. The more recent Gold Line Phase II EIR analyzes impacts of rail operations between Pasadena and Montclair, which is far from the project site. Therefore, these EIRs do not provide informative value to support the findings of the IS/MND.

The commenter does not raise an environmental concern that would change the findings of the IS/MND.

Comment 1-5

The commenter states there should be an Addendum to an existing environmental impact report, not a separate MND with a different lead agency.

Response: Under State CEQA Guidelines Section 15164, the lead agency may prepare an addendum to a previously certified EIR for a previously approved project if changes or additions to the project are necessary, provided the changes do not result in new significant impacts or an increase in the severity of previously identified significant impacts. The Bending the River Back into the City Project, however, is a new project and not a change to a previously approved project with a certified EIR (such as the rail projects mentioned by the commenter). Therefore, an addendum is not the appropriate CEQA document. Further, an addendum is not circulated to the public; therefore, the IS/MND offers a greater opportunity for public involvement in the CEQA process than an addendum.

The commenter does not raise an environmental concern that would change the findings of the IS/MND.

Comment 1-6

The commenter states that the Federal Railroad Administration has not approved the use of this project, nor has the agency approved entrance to railroad rights-of-way.

Response: The Federal Railroad Administration does not have approval authority over the project. The railroad rights-of-way adjacent to the project site would remain undisturbed because construction activities would either take place at a safe distance from the tracks or far enough underneath the tracks so

as not to cause interfere with track operations.

The commenter does not raise an environmental concern that would change the findings of the IS/MND.

Comment 1-7

The commenter reiterates a portion of the Project Description from the IS/MND.

Response: The commenter does not raise an environmental concern that would change the findings of the IS/MND. No change to the IS/MND is required.

Comment 1-8

The commenter states that there is no legal jurisdiction for the City of Los Angeles Bureau of Engineering, as lead agency, for this project. The authorities needed, both federal and state, are limited and deceptive.

Response: As stated in response to comment 1-1, above, the project is located entirely within the boundaries of the city of Los Angeles. There are a number of agencies with permitting authority over the project, including USACE, the California Department of Fish and Wildlife (CDFW), and the Regional Water Quality Control Board (RWQCB).

The Los Angeles Department of Public Works, Bureau of Engineering (LABOE), and USACE, along with the Los Angeles County Department of Public Works (LACDPW), have historically been responsible for overseeing the various functional aspects of the LA River. They have been engaged, separately or cooperatively, in ongoing efforts to maintain and improve water quality, restore natural ecosystem functions of the river, or enhance the quality of life along the river. LABOE served as the CEQA lead agency for the Los Angeles River Revitalization Master Plan EIR. Therefore, LABOE has the legal jurisdiction and precedent for serving as CEQA lead agency for this project.

The commenter does not raise an environmental concern that would change the findings of the IS/MND. No changes to the IS/MND are required.

Comment 1-9

The commenter states that this is an art installation, not a public works project. If the project were a legal public works project, side channeling to the LA River would require the California Department of Fish and Wildlife to approve a change in the streambed. An inflatable dam would change the flow of the LA River.

Response: As stated in the IS/MND, the project has both artistic and utilitarian functions. Although the project water collection and treatment system is privately funded and not tied to any city services (e.g., sewer, storm drain), it would serve a public purpose by providing a source of non-potable irrigation water to the State Park To draw water from the river, the project would require a Lake and Streambed Alteration Agreement under Section 1602 of the California Fish and Game Code.

An inflatable dam would temporarily impound approximately 16 acre-feet of water within the LA River channel. The detention time of this water would be approximately 2 hours, which would not significantly change the flow of the river.

The commenter does not raise an environmental concern that would change the findings of the IS/MND.

Comment 1-10

The commenter states that the LA River is not a source point for water in Los Angeles. It is a flood control channel. The Upper LA River Watermaster has jurisdiction over flow releases.

Response: The LA River has served as a water supply for the city of Los Angeles since the city was founded. Currently, surface water is diverted from the LA River's largest tributary, the Tujunga Wash, for indirect potable use through groundwater recharge. By diverting LA River water for non-potable irrigation use, the project is serving a valuable function and bringing awareness to the city's history of using locally occurring water as a source of urban water supply. The project is not within the boundary of the Upper LA River Area and the Upper LA River Watermaster has no jurisdiction over the flow releases under this reach of the LA river.

The commenter does not raise an environmental concern that would change the findings of the IS/MND.

Comment 1-11

LA River has a Total Daily Maximum Load (TMDL) established. It is not a source of non-potable irrigation water. The flow of the river is also regulated for fish and wildlife.

Response: The project would comply with TDMLs established for the LA River. The LA River has served as a water supply for the city of Los Angeles. Currently, surface water is diverted from the LA River's largest tributary, the Tujunga Wash, for indirect potable use through groundwater recharge. This project would continue the long tradition of using locally occurring water as a source of urban water supply. The project would be required to meet current code requirements related to CDFW and USFWS; both agencies would be consulted during the design and permitting process.

The commenter does not raise an environmental concern that would change the findings of the IS/MND.

Comment 1-12

The commenter states that the LA River is under Order No. R4-2012-Q175 NPDES No. CAS004001 (MS4 permit), which includes the Los Angeles *County Flood Control District and 84 cities, including the city of Los Angeles.*

Response: The *Hydrology and Water Quality Technical Memorandum* (Appendix G of the IS/MND) confirms that the Los Angeles RWQCB issued a National Pollutant Discharge Elimination System (NPDES) permit and Waste Discharge Requirements (WDRs) (Permit No. CAS004001, Order No. R4-2012-0175) under the Clean Water Act (CWA) and the Porter-Cologne Act for discharges of urban runoff in public storm drains in Los Angeles County. The permittees are Los Angeles County and cities within the county, including the City of Los Angeles. The 2012 NPDES permit includes design requirements for new development and significant redevelopment in Part VI.D.7.c (New Development/Redevelopment Project Performance Criteria). The project would comply with all applicable requirements of this permit and order.

In addition, Section 9, Hydrology and Water Quality, of the draft IS/MND states that the project would implement best management practices (BMPs) to comply with the standards outlined in the State Water Resources Control Board's NPDES General Permits for Discharges of Stormwater Associated with Construction Activity (Order No. 2009-0009-DWQ) and Discharges of Groundwater from Construction Dewatering to Surface Waters (Order No. R4-2008-0032-WDR). Measures would also be implemented to

protect receiving waters from dewatering and construction-related non-stormwater discharges. Such discharges would be implemented in compliance with the Los Angeles RWQCB's general WDRs under Order No. R4-2008-0032 (NPDES No. CAG994004), which govern construction-related dewatering discharges within project development areas.

The commenter does not raise an environmental concern that would change the findings of the IS/MND.

Comment 1-13

The commenter states that California State Parks has jurisdiction over the State Park for decisions on irrigation on state property.

Response: The project would provide a source of non-potable irrigation water for use by the State Park, but the State Park would determine how to use the water.

The commenter does not raise an environmental concern that would change the findings of the IS/MND.

Comment 1-14

The commenter reiterates a portion of the Project Description from the IS/MND.

Response: The commenter does not raise an environmental concern that would change the findings of the IS/MND. No change to the IS/MND is required.

Comment 1-15

The commenter states that she sees no attempt to inquire on permitting, whether state of federal. The design appears to be by an artist, not a qualified engineer.

Response: As stated in the IS/MND, the following regulatory permits would be required from federal and state agencies:

- Section 408 permit from USACE under the CWA;
- CWA Section 404 Nationwide Permit;
- CDFW Section 1602 Lake and Streambed Alteration Agreement Notification;
- RWQCB Section 401 Water Quality Certification Application; and
- Native American consultation.

Design of the water wheel and its appurtenant water diversion structures and treatment system is managed by Geosyntec Consultants, which specializes in engineering and design work for environmental, water resources, geotechnical, and structural infrastructure.

The commenter does not raise an environmental concern that would change the findings of the IS/MND.

Comment 1-16

The commenter states that water treatment is under the jurisdiction of the California Department of Public Health.

Response: Comment noted. The California Department of Public Health's Drinking Water Program regulates public water systems; oversees water recycling projects; permits water treatment devices; certifies drinking water treatment and distribution operators; supports and promotes water system security; provides support for small water systems and improving technical, managerial, and financial

capacity; and provides funding opportunities for water system improvements.

The commenter does not raise an environmental concern that would change the findings of the IS/MND.

Comment 1-17

The commenter states that this project is NOT an on-site water collection project. This type of off-site collection is not defined in the 2013 California Plumbing Code of the California Building Standards Code.

Response: The commenter is correct in that the project is considered an off-site collection project. Off-site water collection systems are defined in the County of Los Angeles Department of Public Health (DPH) guidelines for harvesting rainwater, stormwater, and urban runoff for outdoor non-potable uses (Los Angeles 2011). The guidelines contain four collection tiers, each with different requirements, uses, minimum water quality standards, and treatment processes. Off-site collection from locations zoned as high-use transportation corridors or industrial, agricultural, or manufacturing site, such as the project site, falls under the category of Tier IV. The treatment process includes pre-screening and disinfection.

Requirements:

1. Prior review by DPH and the local building and safety department

2. Stormwater monitoring plan for three events per year

3. An overflow device and screened openings

4. Quarterly water quality compliance testing

Minimum Water Quality Standards:

1. Total coliforms < 10,000 Most Probable Number (MPN)/100 milliliters (ml)

2. Fecal coliforms < 400 MPN/100 ml

3. Enterococcus < 104 MPN/100 ml

4. All California Maximum Contaminant Levels and California Toxic Rule Standards

In addition to the guidelines mentioned above, the project must also conform to City of Los Angeles building standards, as permitted by the Department of Building and Safety. Also, the point of connection would have the appropriate backflow prevention device. The specific type of backflow prevention device is permitted by DPH.

The commenter does not raise an environmental concern that would change the findings of the IS/MND. No change to the IS/MND is required.

Comment 1-18

The commenter reiterates a portion of the Project Description from the IS/MND.

Response: The commenter does not raise an environmental concern that would change the findings of the IS/MND. No change to the IS/MND is required.

Comment 1-19

The commenter states that there is no consideration for public health and the safety of individuals.

Response: See response to comment 1-17. The project team has been meeting regularly with DPH and is

working to meet DPH requirements to obtain permission to construct and operate the project.

Comment 1-20

The commenter states that there is no consideration for the potential spread of disease. There is no consideration for birds and wildlife.

Response: See responses to comments 1-17 and 1-19.

Comment 1-21

Other cities downriver and the Los Angeles County Flood Control District also have to deal with public health and safety issues on the downflow as well as liability issues.

Response: There are no appropriated water rights downstream of the project site. As discussed in the IS/MND, the project would not result in any significant downstream impacts related to flooding and water quality.

The commenter does not raise an environmental concern that would change the findings of the IS/MND.

Comment 1-22

The commenter states that there are effects on the following categories:

- *Biological Resources*
- *Cultural Resources*
- *Geology/Soils*
- *Hydrology/Water Quality*
- *Mandatory Findings of Significance;*

The IS/MND affects most categories, not just the above.

Response: Comment noted. Section IV of the Draft IS/MND identifies resources that would have a significant impact followed by summary of all environmental factors affected by the project. Analysis to each of the categories is provided in Appendix A.

The commenter does not raise an environmental concern that would change the findings of the IS/MND. No change to IS/MND.

Comment 1-23

The commenter states that the IS/MND does not consider the Methane Buffer Zone of the area or the oil and gas below the surface of the properties.

Response: According to the City of Los Angeles Department of Planning's Zone Information and Map Access System (ZIMAS), the project site is not located in an area identified by the City of Los Angeles as either a Methane Zone or a Methane Buffer Zone, nor is it located in or close to a formerly active oil drilling area that would be subject to developmental regulations related to guidelines to mitigate oil drilling area hazards.

The commenter does not raise an environmental concern that would change the findings of the IS/MND.

No change to the IS/MND is required.

Comment 1-24

The commenter states that the following categories are also affected:

- *Aesthetics*
- *Air Quality*
- *Greenhouse Gas Emissions*
- *Hazards and Hazardous Materials*
- *Land Use/Planning*
- *Mineral Resources*
- *Noise*
- *Public Services*
- *Transportation/Traffic*
- *Utilities/Service Systems*

Response: See response No. 1-22.

The commenter does not raise an environmental concern that would change the findings of the IS/MND. No change to the IS/MND is required.

Comment 1-25

The commenter states there should be a No-Project Alternative and that that alternative should be chosen.

Response: Under CEQA, an IS/MND is not required to analyze alternatives to the proposed project.

The commenter does not raise an environmental concern that would change the findings of the IS/MND.

Comment 1-26

The commenter restates that the project is under the jurisdiction of the incorrect lead agency for existing environmental impact reports and does not have the legal jurisdiction to proceed.

Response: Please refer to the response to comment 1-8.

Comment 1-27

The commenter states that Native Americans have not been consulted.

Response: Consultation with the Native American Heritage Commission (NAHC) was initiated on July 14, 2013, with a request for the NAHC to search its Sacred Lands Files for records of sacred sites in the vicinity of the project site. Outreach was conducted on August 28, 2013. At that time, Native American

individuals and organizations that may have additional information about sacred sites or Native American traditional cultural properties in or near the project area were contacted. The IS/MND has been revised to include copies of correspondence regarding these consultation/outreach efforts (Appendix I).

Comment Letter 2

Friends of the Los Angeles River

October 24th, 2013

Jim Doty, Environmental Affairs
City of Los Angeles DPW
1149 S. Broadway, Suite 600
Los Angeles, CA 90012

RE: Support for Bending the River back into the City

Dear Mr. Doty,

As President and Founder of Friends of the Los Angeles River (FoLAR), I fully support Bending the River Back into the City Project. The potential of this project could set the bar for what we can do as a city to reclaim much of the L.A. River's fresh water that is wasted into the bay. The described scope of this project includes an aesthetic/educational component that is intended to show that the L.A. River can be used as a source of water, should also include some sort of historic element that will let people know that the Los Angeles River and the several waterwheels and zanja systems were the only source of water for the City of Los Angeles long before William Mulholland envisioned his controversial aqueduct. **2-1**

The movement to restore the L.A. River has changed a lot over the last quarter-century. We are finally witness to results and this is project is one of them. **2-2**

Sincerely,

Lewis MacAdams
President/Founder

FoLAR
Los Angeles River Center
570 W. Ave 26 Suite 250 Los Angeles, CA 90065-1047
Tel: 323-223-0585
Fax: 323-223-2289
WWW.folar.org
E-Mail: mail@folar.org

Responses to Comment Letter 2

Comment 2-1

The commenter supports the project and states that the described scope of this project includes an aesthetic/educational component that intends to show that the LA River can be used as a source of water. It should also include some sort of historic element that will let people know that the LA River and the several waterwheels and zanja systems were the only source of water for the city of Los Angeles long before William Mulholland envisioned his controversial aqueduct.

Response: Comment noted. Those who are interested in learning about the history of the project site will be directed to the project website, which will provide information on the historic use of water from the L.A. River and the water conveyance systems that were utilized in the past. Private tours of the water wheel will also be available by appointment.

The commenter does not raise an environmental concern that would change the findings of the IS/MND. No change to the IS/MND is required.

Comment 2-2

The commenter states that the project supports efforts to restore the LA River.

Response: Comment noted. The commenter does not raise an environmental concern that would change the findings of the IS/MND. No change to the IS/MND is required.

Comment Letter 3

Metropolitan Transportation Authority
One Gateway Plaza
Los Angeles, CA 90012-2952
213.922.2000 Tel
metro.net

Metro

November 14, 2013

Jim Doty, Environmental Affairs Officer
City of Los Angeles Department of Public Works
Bureau of Engineering, EMG
1149 S. Broadway, Suite 600
Los Angeles, CA 90015

RE: Mitigated Negative Declaration (MND) for the Bending the River Back into the City Project

Dear Mr. Doty,

Thank you for the opportunity to comment on the proposed project, the Bending the River Back into the City project, also known as "The Water Wheel" project, located at 1796 N. Baker Street, adjacent to the LA River and in the vicinity of the Los Angeles State Historic Park (State Park). This letter conveys recommendations from the Los Angeles County Metropolitan Transportation Authority (LACMTA) concerning issues relative to our facilities and services that may be affected by the proposed project. **3-1**

1. *Access to Metro Gold Line Maintenance Yard*

Baker Street provides the sole access to the Metro Gold Line Maintenance Yard (Division 21), which is a crucial maintenance facility for the Metro Gold Line. The construction staging area and installation of the delivery pipe that would connect the project site to the State Park may affect Metro Division 21 access. It is critical for access to remain unimpeded during all phases of construction and operation of proposed project. **3-2**

2. *Pedestrian and Vehicular Access*

The project claims that it will enhance pedestrian connections through its implementation but it is not clear how pedestrian access will be designed. The project should create safe connections for pedestrians to access the project, especially from the State Park, and mitigate potential conflicts with service vehicles entering Metro Division 21. Vehicular access is necessary for operations vehicles entering the maintenance yard, and pedestrian access design should take this into consideration and avoid any impediments to vehicular access. Additionally, vehicular access to this limited area should be analyzed to ensure that in the event of an emergency, emergency services can access the site adequately, and evacuation of the site can happen in a timely manner. **3-3**

3. *Flooding Risk*

Considering the proximity of Metro Division 21 which is a critical piece of infrastructure to the regional transportation network, any potential risk of flooding posed by the proposed project could be detrimental to crucial facilities for the transit network. The project should therefore conduct necessary analysis to ensure that any risk of flooding that could impact Metro Division 21 is avoided and mitigated. **3-4**

4. *Environmental Considerations*

a. The project proposes new recreational and water oriented uses adjacent to LACMTA's property. Despite any change in the ecological nature and use of the parcel, including but not limited to establishment of new habitats or development of community recreational uses on currently unused land, LACMTA will retain ownership of its parcels and the right to operate on those parcels for the maintenance and operation of transportation related activities, without obligation to mitigate impacts on evolved adjacent uses. The project sponsor should also be aware of any new habitat that is expected to be formed and how it will affect the overall ecology of the greater impacted area. **3-5**

b. The project sponsor should consider the impacts of the inflatable dam on stormwater infrastructure and run off. LACMTA will be responsible for stormwater impacts to the Metro Division 21 associated with its operations, but will not mitigate for any improvements to water quality that is inconsistent with current existing uses of such resources unless a mutual agreement among all affected parties is executed. **3-6**

c. It should be recognized that there may be cultural discoveries during the project construction that may result in potential impacts and mitigations. The project sponsor should consider possible effects of potentially discovered cultural resources, especially if they may impact Metro Division 21 operations. **3-7**

d. Determination of a Stormwater Pollution Prevention Plan (SWPPP) Risk Level 2/3 is recommended. LACMTA will not mitigate any stormwater that could flow onto the project construction site resulting from the design, construction, and operation of the project. **3-8**

If you have any questions regarding this response, please contact Marie Sullivan at 213-922-5667 or by email at SullivanMa@metro.net.

Sincerely,



Nick Saponara
Development Review Manager, Countywide Planning

Responses to Comment Letter 3

Comment 3-1

This letter conveys recommendations from Metro concerning issues relative to its facilities and services that may be affected by the proposed project.

Response: Comment noted. The commenter does not raise an environmental concern that would change the findings of the IS/MND. No change to the IS/MND is required.

Comment 3-2

The commenter states that Baker Street is the sole access route to the Metro Gold Line Maintenance Yard (Division 21), which is a crucial maintenance facility for the Metro Gold Line. The construction staging area and installation of the delivery pipe that would connect the project site to the State Park may affect Metro Division 21 access. It is critical for access to remain unimpeded during all phases of construction and operation of proposed project.

Response: Comment noted. The section of the draft IS/MND concerning the construction schedule and equipment, page 14 of 83, discusses access during construction of the project, acknowledging that access would be provided at Baker Street but only one half of the street would be closed at any given time, thereby allowing continuous use of the street. Furthermore, coordination would be required between the project contractor and Metro.

The commenter does not raise an environmental concern that would change the findings of the IS/MND. No change to the IS/MND is required.

Comment 3-3

The commenter states that the project claims to enhance pedestrian connections, but it is not clear how pedestrian access will be designed. The project should create safe connections for pedestrians to access the project, especially from the State Park, and mitigate potential conflicts with service vehicles when entering Metro Division 21. Vehicular access is necessary for operations vehicles when entering the maintenance yard, and pedestrian access design should take this into consideration and avoid any impediments to vehicular access. Additionally, vehicular access to this limited area should be analyzed to ensure that, in the event of an emergency, emergency services can access the site adequately, and evacuation of the site can happen in a timely manner.

Response: Comment noted. The cul-de-sac at Baker Street includes a sidewalk along the boundary of the State Park and the proposed water wheel site that would provide a safe route to and from the park for those who wish to view the wheel. The wheel will also be visible from existing view points, such as from the Broadway Bridge and inside the State Park. A separate viewing area on the wheel site that may attract additional visitors is not proposed at this time. Therefore, the water wheel is not anticipated to attract large numbers of visitors to the site, who may interfere with vehicles entering the maintenance yard on Baker St.

The section of the draft IS/MND concerning the construction schedule and equipment, page 14 of 83, discusses access during construction of the project, acknowledging that access would be provided at Baker Street but only one half of the street would be closed at any given time, thereby allowing continuous use of the street.

Section 8g of Appendix A, Hazards and Hazardous Materials, page 65 of 83, specifies that traffic detour plans would address issues related to emergency response or emergency evacuation during construction. The project design would ensure that the water surface elevation would not be altered during flood conditions (as modeled with USACE's HEC-RAS model, which is what the Federal Emergency Management Agency [FEMA] uses to establish flood hazard areas). The project would not interfere with any emergency response plan established by FEMA for the river floodplain. FEMA review of project plans would not be required.

Section 14a of Appendix A, Public Services, page 77 of 83, the Fire and Police Services discussion, states that the nearest local fire responders and the police station would be notified of traffic control plans during construction to coordinate emergency response routes.

Section 16a of Appendix A, page 79 of 83, Transportation/Traffic, states that the applicant is committed to implementing construction traffic controls as required by the *Work Area Traffic Control Handbook.* Temporary traffic control elements would be subject to review, including a safety review, and approval by the Los Angeles Department of Transportation. It is not anticipated that the proposed project would prohibit emergency access to existing facilities in the area.

The commenter does not raise an environmental concern that would change the findings of the IS/MND. No change to the IS/MND is required.

Comment 3-4

The commenter states that, considering the proximity of Metro Division 21, which is a critical piece of infrastructure to the regional transportation network, any potential risk of flooding posed by the proposed project could be detrimental to crucial facilities for the transit network. The project should therefore conduct the necessary analysis to ensure that any risk of flooding that could affect Metro Division 21 is avoided and mitigated.

Response: The water wheel site is located within FEMA's unshaded Zone X, which is defined as an area outside the 0.2% annual chance floodplain (i.e., the 500-year floodplain). However, the diversion site, being within the LA River, which is designed as a flood control channel, is by necessity within a Special Flood Hazard Area and subject to a 1% annual chance of flooding. Further, dry-weather flows would be ponded behind the inflatable dam and wholly contained within the LA River channel. During storm conditions, the inflatable dam would be deflated, allowing rainfall runoff to pass unimpeded to the Pacific Ocean. This critical component would be taken into consideration during the USACE permitting process.

No change to the IS/MND is required.

Comment 3-5

The commenter states that the project proposes new recreational and water-oriented uses adjacent to Metro's property. Despite any change in the ecological nature and use of the parcel, including, but not limited to, establishment of new habitats or development of community recreational uses on currently unused land, Metro will retain ownership of its parcels and the right to operate on those parcels for the maintenance and operation of transportation-related activities without obligation to mitigate impacts on evolved adjacent uses. The project sponsor should also be aware of any new habitat that is expected to be formed and how it will affect the overall ecology of the greater affected area.

Response: As described in Appendix A, the LA River area that would be affected by the project is not a federally protected wetland. However, USACE, RWQCB and CDFW have jurisdictional permitting authority over activities in open water and the streambed within the LA River. If, after consultation with the permitting agencies, it is determined that project activities would result in significant impacts on jurisdictional waters, then compensation may be required. Such compensation would be specified and approved prior to the issuance of the USACE 404 permit, RWQCB 401 permit, and CDFW 1602 streambed alteration agreement.

No change to the IS/MND is required.

Comment 3-6

The commenter states that the impacts of the inflatable dam on stormwater infrastructure and runoff should be considered. Metro will be responsible for stormwater impacts on Metro Division 21 associated with its operations but will not mitigate for any improvements to water quality that are inconsistent with current existing uses of such resources unless a mutual agreement among all affected parties is executed.

Response: The LA River serves as storage for high water flows from the adjacent area during storm events. The design of the proposed project would maintain flood storage capacity, thereby not affecting this flood control function. The project would be required to meet current code requirements, including standards outlined in the State Water Resources Control Board's NPDES General Permits for Discharges of Stormwater Associated with Construction Activity (Order No. 2009-0009-DWQ) and Discharges of Groundwater from Construction Dewatering to Surface Waters (Order No. R4-2008-0032-WDR) as well as the requirements of the statewide Construction General Permit. Furthermore, the project applicant would prepare and implement a Stormwater Pollution Prevention Plan (SWPPP) and BMPs to reduce potential adverse impacts on surface water quality.

All proposed designs would be approved by USACE through the Section 408 permitting process.

The commenter does not raise an environmental concern that would change the findings of the IS/MND.

Comment 3-7

The commenter states that there could be cultural resource discoveries during project construction, resulting in potential impacts and mitigation. The project sponsor should consider the possible effects of cultural resource discoveries, especially if they affect Metro Division 21 operations.

Response: Because significant cultural resources may be buried in the project area and that archaeological materials could be unearthed during project excavation, construction of the proposed project may have the potential to disturb or destroy an archaeological resource. Therefore, Section 5 of Appendix A, Cultural Resources, provides mitigation in case the disturbance of significant archaeological resources results in a significant adverse impact. Please refer to mitigation measure CR-1, found on page 59 of 83 of the draft IS/MND.

No change to the IS/MND is required.

Comment 3-8

The commenter states that SWPPP Risk Level 2/3 is recommended. Metro will not mitigate any

stormwater that flows onto the project construction site resulting from design, construction, or operation of the project.

Response: The project applicant shall prepare and implement a SWPPP and BMPs to reduce potential adverse impacts on surface water quality. The project would comply with construction and post-construction stormwater management practices to avoid adversely affecting adjacent properties.

The commenter does not raise an environmental concern that would change the findings of the IS/MND.

Jim Doty <jim.doty@lacity.org>

Fwd: Comments to 2013101041-MND Bending the River Back into the City Project due 11.14.2013

1 message

patricia mc pherson <patriciamcpherson1@verizon.net> Thu, Nov 14, 2013 at 5:40 PM
To: Jim.Doty@lacity.org
Cc: Hanscom Marcia <wetlandact@earthlink.net>, Joe Young <joengeri@ca.rr.com>, jd@johnanthonydavis.com, jeanette@culverevents.com, Knight Kathy <kathy.knight@verizon.net>

Grassroots Coalition supports and agrees with the comments made by Ms. Dillard. Please provide responses to the comments supplied below as this is a matter of great public concern. 4-1

Patricia McPherson, Grassroots Coalition

Begin forwarded message:

From: Joyce Dillard <dillardjoyce@yahoo.com>
Subject: Comments to 2013101041-MND Bending the River Back into the City Project due 11.14.2013
Date: November 14, 2013 1:31:54 PM PST
To: James Doty <Jim.Doty@lacity.org>

The properties listed are not under the City jurisdiction:

5409-001-900
5409-001-901
5414-016-903
5447-032-900

Metropolitan Transportation Authority MTA has a Memorandum of Understanding MOU with Southern California Regional Rail Authority SCRRA for inter-county rail transportation including a maintenance facility. (See CF 07-1656.)

Metrolink Maintenance Facility at Midway Yard occupies part of the proposed project.

There have been several Environmental Impact Reports on this property:

Responses to Comment Letter 4

Comment 4-1

Commenter states that the Grassroots Coalition supports and agrees with the comments made by Ms. Dillard and asks to provide responses (commenter references the letter from Joyce Dillard).

Response: Comment noted. Please see responses to comments 1-1 through 1-27. The commenter does not raise an environmental concern that would change the findings of the IS/MND. No change to the IS/MND is required.

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Appendix **J**
Mitigation Monitoring Program

MITIGATION MONITORING PROGRAM

FOR THE

Bending the River Back into the City Project

Initial Study/Mitigated Negative Declaration

Prepared By

CITY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS
BUREAU OF ENGINEERING

January 2013

Introduction

The California Environmental Quality Act (CEQA) requires public agencies to adopt a reporting or monitoring program for changes to the project that have been adopted to mitigate or avoid significant effects on the environment. The program must be adopted by the public agency at the time findings are made regarding the project (Public Resources Code Section 21081.6). The State CEQA Guidelines (Section 15097(c)) allow public agencies to choose whether its program will monitor mitigation or report on mitigation, or both. This mitigation monitoring program contains the elements required by CEQA for the Bending the River Back into the City Project (proposed project).

Project Description

The Bending the River Back into the City Project would be located at 1796 N. Baker Street, Los Angeles. The property, which is currently owned by the Los Angeles County Metropolitan Transportation Authority (Metro), is located approximately 0.4 mile west of the Golden State Freeway and approximately 0.8 mile east of Dodger Stadium. The project area is approximately 2 miles north of downtown Los Angeles.

The proposed project would involve construction and operation of a water wheel, loosely modeled after the historic wheel that existed near the project location, as well as excavation of a 1,300-cubic-yard pit and maintenance area for installation of the water wheel. It would also include construction of a side channel to the Los Angeles River (LA River), connecting the LA River to the water wheel pit, and installation of an inflatable dam within the LA River channel, creating a water impoundment area upstream of the proposed inflatable dam. The purpose of the proposed project is to divert water from the LA River and create an aesthetic/educational statement, showing that the LA River can be used as a source of water. Additional purposes include enhancing connections between the surrounding community and the LA River and providing a viable long-term source of non-potable irrigation water for the Los Angeles State Historic Park (State Park) and other local demands.

In compliance with the requirements of CEQA, an initial study has been prepared to assess the potential environmental impacts of this project. Mitigation measures have been incorporated into the project to ensure that any impacts are reduced to a less-than-significant level. As such, the City of Los Angeles (City) proposes to adopt a mitigated negative declaration.

The analysis in this document assumes that, unless otherwise stated, the project will be designed, constructed, and operated in accordance with all applicable laws, regulations, ordinances, and formally adopted City standards (e.g., Los Angeles Municipal Code and Bureau of Engineering Standard Plans). Also, the analysis in this document assumes that construction will follow the uniform practices established by the Southern California Chapter of the American Public Works Association (e.g., *Standard Specifications for Public Works Construction* and the *Work Area Traffic Control Handbook*) as adapted by the City (e.g., The City of Los Angeles Department of Public Works *Additions and Amendments to the Standard Specifications for Public Works Construction* (AKA "The Brown Book," formerly Standard Plan S-610).

Mitigation Measures

The mitigation measures described on the following pages are taken from the initial study and mitigated negative declaration as well as related documents. The measures are listed according to the stage of the project when mitigation will be implemented (i.e., design, construction, operation). Within each project phase, the following information is provided for each mitigation measure:

(1) An “identifier,” providing a nexus between the listed mitigation measure and the source document. The source document should be consulted whenever there is any question regarding the intent or implementation of the mitigation measure.

(2) A description of the mitigation measure.

(3) The party who is responsible for the necessary implementing actions.

(4) The necessary implementing vehicle.

(5) The party who is responsible for verifying that the necessary implementing action is taken.

(6) The primary record documenting the necessary implementing action.

The mechanisms for verifying that mitigation measures have been implemented include design drawings, construction documents (intended for use by construction contractors and managers), field inspections, field reports, and other periodic or special reports. All records pertaining to this mitigation program will be maintained and made available for inspection by the public in accordance with City record management policies.

CONSTRUCTION PHASE

Identifier	Mitigation Measures	Implementation Responsibility	Implementation Vehicle	Enforcement Responsibility	Record of Implementation
Biological Resources					
BIO-1	If construction occurs during the nesting period (February 15 through September 15, or as otherwise defined by the California Department of Fish and Wildlife [CDFW]), a preconstruction nesting bird survey must be performed by a qualified biologist. The survey shall be performed within 7 days of any ground-disturbing activities. If active nests are found, the following buffers are recommended until a qualified biologist determines that nesting activities have ceased: 500 feet for raptors and any listed species; 100 feet for all other bird species unless otherwise authorized by CDFW. This will provide adequate protection for native nesting birds per the Migratory Bird Treaty Act and California Fish and Game Code. If there is no nesting within 100 feet of the limits of disturbance (500 feet for raptors), no further action is necessary. If project-related ground disturbance occurs outside of the nesting season, a nesting bird survey is not necessary.	Department of Building and Safety	Project plans and specifications will ensure that the construction contractor will retain a qualified biologist who is capable of conducting the necessary bird surveys prior to construction.	Department of Building and Safety	Project plans and specifications.
		Construction Contractor (qualified biologist)	Preconstruction bird survey, a report on which will be provided to the Department of Building and Safety prior to the initiation of construction.	Department of Building and Safety	Report on the results of the preconstruction bird survey.
BIO-2	If work is expected to occur within 100 feet of trees or other structures with bat roost potential during the maternity season (April 15 through August 15), a qualified bat biologist shall conduct a one-night emergence survey during acceptable weather conditions (i.e., no rain or high winds, night temperatures above 45˚F) or, if conditions permit, physically examine (e.g., with lift equipment) the tree or structure to determine the presence or absence of bats before the start of construction. If it is determined that the roost is occupied during that time, the tree or structure will be avoided until after the maternity season when the young are self-sufficient and volant. If trees or structures with bat roost potential require removal during the winter months when bats are in torpor (October 31 through February 15, depending on specific weather conditions), a qualified bat biologist shall physically examine (e.g., with lift equipment) the tree or	Department of Building and Safety	Project plans and specifications will ensure that the construction contractor will retain a qualified biologist who is capable of conducting the necessary bat roost survey and tree examinations.	Department of Building and Safety	Project plans and specifications.
		Construction Contractor (qualified biologist)	The qualified biologist will conduct an examination of any trees with bat roost potential and supervise tree removal.	Department of Building and Safety	Report on the findings of the bat roost examination.

Identifier	Mitigation Measures	Implementation Responsibility	Implementation Vehicle	Enforcement Responsibility	Record of Implementation
	structure (if conditions permit) to determine the presence or absence of bats before the start of construction. If it is determined that the tree or structure is occupied during that time, the tree or structure shall be avoided until after the winter season when bats are once again active.				
Cultural Resources					
CR-1	A qualified professional archaeologist shall monitor the initial phase of ground-disturbing activities associated with the project. If buried cultural resources, such as historic debris, building foundations, non-human bone, flaked or ground stone, are discovered during ground-disturbing activities, work shall stop in that area and within 50 feet of the find until a qualified archaeologist can assess the significance of the find and, if necessary, develop appropriate treatment measures. Treatment measures typically include development of avoidance strategies, capping with fill material, or mitigation of impacts through data recovery programs, including excavation or detailed documentation. If, during cultural resources monitoring, the qualified archaeologist determines that the sediments being excavated are previously disturbed or unlikely to contain significant cultural materials, the qualified archaeologist can specify that monitoring be reduced or eliminated.	Department of Building and Safety	Project plans and specifications will ensure that the construction contractor will retain a qualified archeologist and that work will stop in the event that archeological resources are discovered.	Department of Building and Safety	Project plans and specifications.
		Construction Contractor	The construction contractor will stop work if any items that may be considered archeological resources are discovered.	Department of Building and Safety	The construction contractor will provide written notification to the Department of Building and Safety in the event of work stoppages due to archeological resources.
		Construction Contractor (qualified archeologist)	The qualified archeologist will assess the significance of any findings and develop appropriate treatment measures, if necessary.	Department of Building and Safety	The qualified archeologist will provide a closeout report detailing the actions taken with respect to archeological resources that are discovered.

Identifier	Mitigation Measures	Implementation Responsibility	Implementation Vehicle	Enforcement Responsibility	Record of Implementation
CR-2	Project plans shall specify that a qualified paleontologist shall monitor initial ground disturbances at depths greater than 10 feet below the ground surface. The qualified paleontologic monitor shall retain the option of reducing monitoring if, in his or her professional opinion, the monitored sediments were previously disturbed. Monitoring may also be reduced if potentially fossiliferous units are not present or, if present, qualified paleontologic personnel determine that they have low potential for containing fossil resources. The monitor shall be equipped to salvage fossils and samples of sediments as they are unearthed to avoid construction delays and empowered to halt or divert equipment temporarily to allow removal of abundant or large specimens. Recovered specimens shall be prepared to a point of identification and permanent preservation, including washing to recover small invertebrates and vertebrates. Specimens shall be curated into a professional, accredited museum repository with permanent retrievable storage. A report of findings, with an appended itemized inventory of specimens, shall be prepared, signifying completion of the program to mitigate impacts on paleontological resources.	Department of Building and Safety	Project plans and specifications will ensure that the construction contractor will retain a qualified paleontologist and that work will stop in the event that paleontological resources are discovered.	Department of Building and Safety	Project plans and specifications
		Construction Contractor	The construction contractor will halt or divert work if any items that may be considered paleontological resources are discovered.	Department of Building and Safety	The construction contractor will provide written notification to the Department of Building and Safety in the event of work stoppages due to paleontological resources.
		Construction Contractor (qualified paleontologist)	The qualified paleontologist will oversee specimen preparation and recovery and ensure placement in a professional, accredited museum repository with permanent retrievable storage.	Department of Building and Safety	The qualified paleontologist will provide a report of findings, with an appended itemized inventory of specimens.
CR-3	Should human remains be uncovered during construction, project plans shall specify that construction shall halt in the area of discovery, the area shall be protected, and no further disturbance shall occur, as specified by State Health and Safety Code Section 7050.5. The county coroner shall	Department of Building and Safety	Project plans and specifications will ensure that the construction contractor will stop work if human remains are discovered.	Department of Building and Safety	Project plans and specifications.

Identifier	Mitigation Measures	Implementation Responsibility	Implementation Vehicle	Enforcement Responsibility	Record of Implementation
	determine the origin and disposition of the human remains pursuant to Public Resources Code Section 5097.98. If the coroner recognizes the remains to be Native American, he or she shall contact the Native American Heritage Commission (NAHC) within 24 hours. For remains of Native American origin, no further excavation or disturbance shall take place until the most likely descendant of the deceased Native American(s) has made a recommendation to the landowner or the person responsible for the excavation work regarding the means for treating or disposing of the human remains and any associated grave goods, with appropriate dignity, as provided in Public Resources Code Section 5097.9. In consultation with the most likely descendant, the project archaeologist and the project proponent shall determine a course of action regarding preservation or excavation of Native American human remains, and this recommendation shall be implemented expeditiously. If the NAHC is unable to identify a most likely descendant or the descendant fails to make a recommendation within 48 hours after being notified by the commission, the project archaeologist and the project proponent shall determine a course of action regarding preservation or excavation of Native American human remains, which shall be submitted to the NAHC for review prior to implementation.	Construction Contractor	If human remains are discovered, the construction contractor will contact the county coroner to determine the origin and disposition of the human remains pursuant to Public Resources Code Section 5097.98.	Department of Building and Safety	The construction contractor will provide written notification to the Department of Building and Safety in the event of work stoppages due to the discovery of human remains.
		Construction Contractor (county coroner and qualified archeologist, if necessary)	If the coroner recognizes the remains to be Native American, he or she shall contact the NAHC within 24 hours for a recommendation regarding handling the remains. If the NAHC is unable to make a recommendation within 48 hours, a course of action regarding preservation or excavation shall be made by a qualified archeologist and submitted to the NAHC for review.	Department of Building and Safety	The construction contractor, county coroner, and qualified archeologist, if necessary, will provide a closeout report detailing the actions taken with respect to the discovery of human remains.
Geology and Soils					
GEO-1	Potential liquefaction hazards shall be mitigated effectively using commonplace foundation design features that will be incorporated into the design of the final structures, as discussed in the geotechnical investigation report. The retaining wall type and foundation system selected during design will determine which design features will be selected.	Department of Building and Safety	Project plans and specifications will ensure that the construction contractor will follow the recommendations of the geotechnical engineering reports completed for the project.	Department of Building and Safety	Project plans and specifications.

Identifier	Mitigation Measures	Implementation Responsibility	Implementation Vehicle	Enforcement Responsibility	Record of Implementation
	The process of selection for design features will be "performance-based" in that the project geotechnical engineer and structural engineer will work together to understand the response of the proposed construction to the design seismic event, including the effects of liquefaction. Within this framework, the performance (i.e., physical damage) of the proposed structures under the anticipated seismic loading, including liquefaction, will be evaluated. This evaluation will be an iterative process, with additional liquefaction mitigation measures (e.g., pile foundations, stiffened structural elements) added as necessary to achieve the desired results. This process will be in conformance with California Building Code seismic design standards.	Construction Contractor	The construction contractor will follow the recommendations laid out in the geotechnical engineering reports completed for the project.	Department of Building and Safety	The construction contractor will provide a closeout report regarding actions taken to reduce the risk of liquefaction.
Hydrology and Water Quality					
HYD-1	Consistent with the requirements of the statewide Construction General Permit, the project applicant shall prepare and implement a Stormwater Pollution Prevention Plan (SWPPP) to reduce potential adverse impacts on surface water quality through the project construction period. The SWPPP shall be designed to the assessed Project Risk Level to meet the following objectives: (1) all pollutants and their sources, including sources of sediment associated with construction, construction site erosion, and all other activities associated with construction activity, shall be controlled; (2) where not otherwise required under a Regional Water Quality Control Board permit, all non-stormwater discharges shall be identified and eliminated, controlled, or treated; (3) site best management practices (BMPs) shall be effective and shall reduce or eliminate pollutants in stormwater discharges and authorized non-stormwater discharges from construction activity to the Best Available Technology/Best Conventional Pollutant Control Technology standard; (4) calculations and design details, as well as BMP controls for site runon, shall be complete and correct; and (5) stabilization BMPs shall be installed to reduce or eliminate pollutants after construction is completed.	Department of Building and Safety	Project plans and specifications will ensure that the construction contractor will follow the recommendations of the SWPPP completed for the project.	Department of Building and Safety	Project plans and specifications.

Identifier	Mitigation Measures	Implementation Responsibility	Implementation Vehicle	Enforcement Responsibility	Record of Implementation
	The SWPPP shall be prepared by a qualified SWPPP developer. The SWPPP shall include the minimum BMPs required in Attachment D for the assessed Project Risk Level, which shall be determined as part of the Notice of Intent for coverage under the Construction General Permit. Included shall be BMPs for erosion and sediment control, site management/housekeeping/waste management, management of non-stormwater discharges, infiltration and runoff controls, and BMP inspection/maintenance/repair activities. The SWPPP shall include a construction site monitoring program that identifies requirements for dry-weather visual observations of pollutants at all discharge locations and, as appropriate (depending on the Project Risk Level), sampling of site effluent and receiving waters (receiving water monitoring is required only for some Risk Level 3 dischargers). The qualified SWPPP practitioner shall be responsible for implementing the BMPs at the site and performing all required monitoring and inspection/maintenance/repair activities. If the project is Risk Level 2 or 3, the project applicant shall also prepare a Rain Event Action Plan as part of the SWPPP. The following types of BMPs shall be implemented for the project: • Erosion control BMPs, • Sediment control BMPs, • Wind erosion control BMPs, • Tracking controls, • Non-stormwater controls, and • Waste management and materials pollution control BMPs.	Construction Contractor	The construction contractor will follow the recommendations laid out in the SWPPP completed for the project.	Department of Building and Safety	The construction contractor will provide a closeout report regarding actions taken to reduce risks to surface water quality.

Identifier	Mitigation Measures	Implementation Responsibility	Implementation Vehicle	Enforcement Responsibility	Record of Implementation
		Construction Contractor (qualified SWPPP practitioner)	The qualified SWPPP practitioner shall be responsible for implementing the BMPs at the site and performing all required monitoring and inspection/maintenance/ repair activities.	Department of Building and Safety	The qualified SWPPP practitioner will provide a closeout report detailing the actions taken with respect to BMP implementation and mitigation.