

# **Attachment 3**

*City of Beverly Hills*

# **Shallow Well Drilling Project at Maple Yard**

## **CEQA Class 32 Categorical Exemption Report**



September 2015

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# Shallow Well Drilling Project at Maple Yard

## CEQA Class 32 Categorical Exemption Report

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*September 2015*

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# Shallow Well Drilling Project at Maple Yard

## CEQA Class 32 Categorical Exemption Report

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## CATEGORICAL EXEMPTION REPORT

This report serves as the technical documentation of an environmental analysis performed by Rincon Consultants, Inc., for the Shallow Well Drilling Project at Maple Yard in the City of Beverly Hills. The intent of the analysis is to document whether the project is eligible for a Class 32 Categorical Exemption (CE). The report provides an introduction, project description, and evaluation of the project's consistency with the requirements for a Class 32 exemption. This includes an analysis of the project's potential impacts in the areas of biological resources, traffic, air quality, noise, water quality, and historic resources. The report concludes that the project is eligible for a Class 32 CE.

### 1. INTRODUCTION

The California Environmental Quality Act (CEQA) states that a Class 32 CE is allowed when:

- (a) *The project is consistent with the applicable general plan designation and all applicable general plan policies as well as with applicable zoning designation and regulations.*
- (b) *The proposed development occurs within city limits on a project site of no more than five acres substantially surrounded by urban uses.*
- (c) *The project site has no value as habitat for endangered, rare or threatened species.*
- (d) *Approval of the project would not result in any significant effects relating to traffic, noise, air quality, or water quality.*
- (e) *The site can be adequately served by all required utilities and public services.*

Additionally, State CEQA Guidelines Section 15300.2 states that a categorical exemption "shall not be used for a project which may cause a substantial adverse change in the significance of a historical resource."

Rincon Consultants, Inc. evaluated the project's consistency with the above requirements, including its potential impacts in the areas of biological resources, traffic, noise, air quality, water quality, and historic resources to confirm the project's eligibility for the Class 32 exemption.

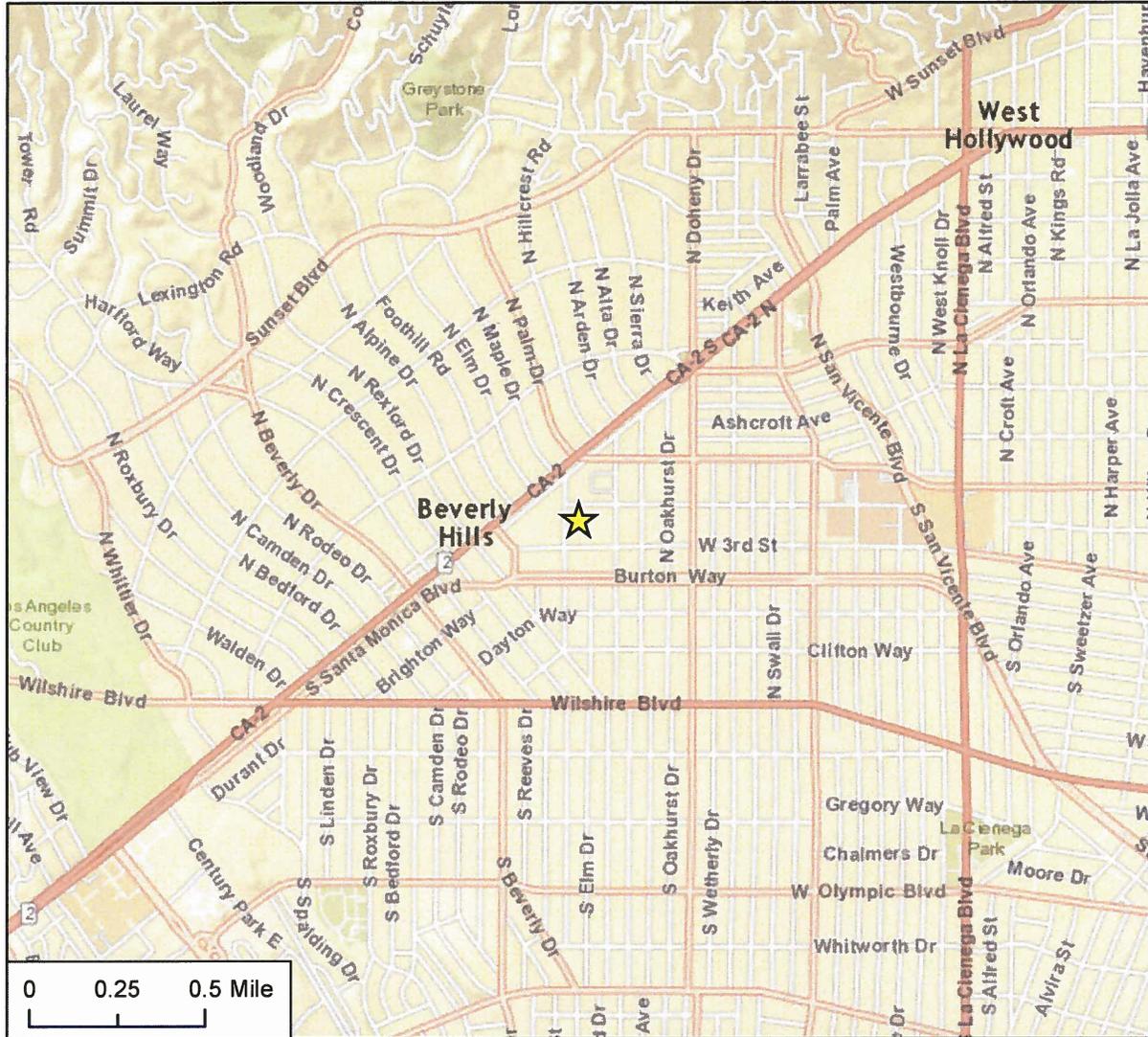
### 2. PROJECT DESCRIPTION

The proposed Shallow Well Drilling Project at Maple Yard ("proposed project") includes the drilling of two groundwater wells as well as construction of associated infrastructure to convey groundwater from the wells to an existing Water Treatment Plant (WTP) for treatment prior to distribution. The WTP is located approximately 500 feet west of Maple Yard.

As stated above, the two groundwater wells would be located on a City-owned public works facility (i.e. Maple Yard) (see Figures 1 and 2). The two wells would be drilled to about 200 feet below ground surface (bgs). Both wells are anticipated to produce between 200 to 300 gallons per minute (gpm) of shallow water from the underlying Hollywood



Shallow Well Drilling Project at Maple Yard  
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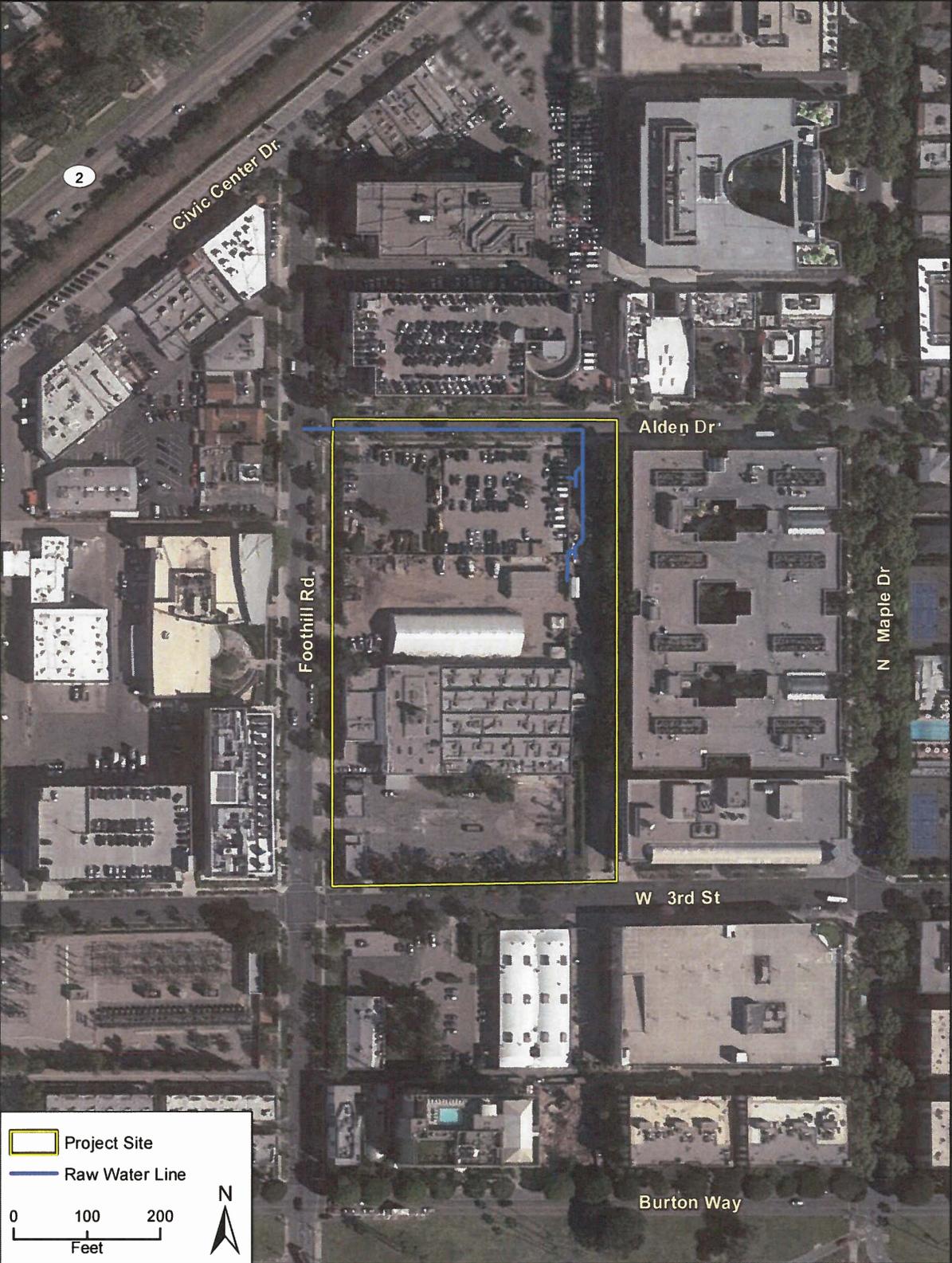
★ Project Location



Regional Location

Figure 1

City of Beverly Hills



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Maple Yard and  
Alden Drive Pipeline Alignment

Figure 2

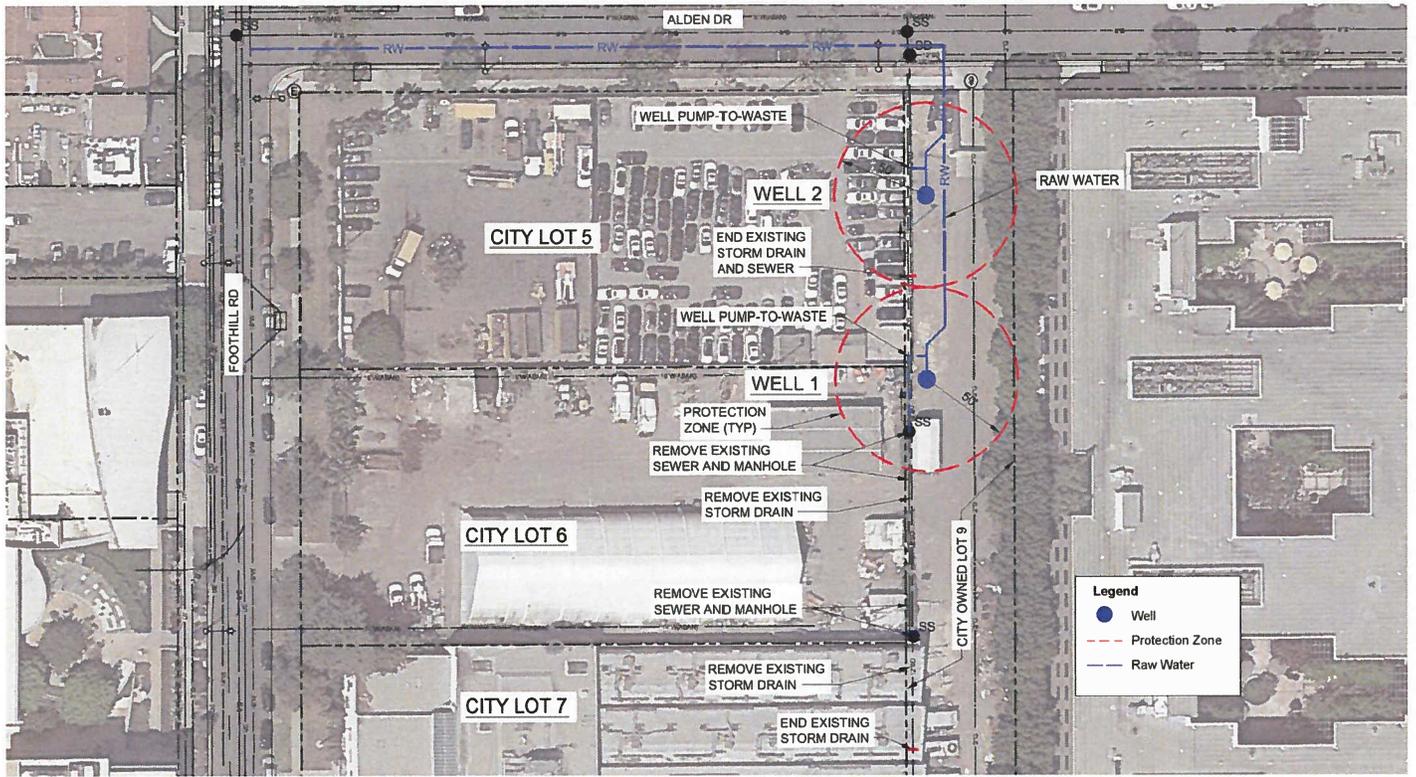
Subbasin, although actual production rates would vary depending on seasonal conditions and precipitation rates. Once the testing phase of the project is complete, permanent wellheads would be installed and may be enclosed within a structure of approximately 30 feet in length, 15 feet in width, and 10 feet in height. In order to provide a conservative analysis, this document will assess potential impacts associated with presence and absence of wellhead enclosures.

Included as part of the proposed project is a series groundwater monitoring wells, termed "sentinel wells", which would be located radially between 0.25 mile and 0.5 mile from the shallow groundwater wells. The distance from the site would be adjusted based on the nearby property utilization and availability of City-owned land/rights-of-way. These wells would not include any additional infrastructure aside from the well itself. The monitoring wells would either be designed to be flush with the ground surface or include a 3-foot high, above-ground post, depending on their location and the level of protection for the well head provided by adjacent buildings, fencing, etc. The number and placement of the wells would be determined based on the movement of groundwater in the area and location of known contaminant plumes in the shallow aquifers. The monitoring of these wells would be done in compliance with a Water Quality Plan, with testing for contaminants of concern completed on a monthly basis over the life of the shallow groundwater wells or until deemed no longer required by the City, in consultation with the relevant regulatory agencies. The Water Quality Plan would specify allowable limits of water quality constituents, which would be based on drinking water standards established by the State of California. If concentrations of monitored contaminants exceed state drinking water standards, pumping would be required to cease. Pumping would be allowed to resume once a groundwater remediation program can be designed and implemented that reduces the potential for further migration of contaminant plumes towards the shallow groundwater wells. Preparation of any groundwater remediation program in future would be done in consultation with the Regional Water Quality Control Board.

In addition, a new 550-foot long and six- or eight-inch diameter water pipeline would be constructed to convey raw well water to an existing 16-inch diameter pipe in Foothill Road. The water main would be aligned from the Maple Yard wells to the north, through Lot 9, then turning west on Alden Drive to Foothill Boulevard (as shown on Figure 3). An existing water main would then convey the raw water an additional 300 feet to the City's WTP. Part of the project includes construction of a short section of pipeline within Lot 9 which would connect to an existing sewer (as shown on Figure 3). This pipeline would facilitate testing and start-up of the wells to confirm production rates and be used to discharge pumped water during the testing phase prior to the wells becoming operational. The local sewer system is operated and maintained by the City of Beverly Hills, Public Works Department; the sewer system differs from the stormwater drainage system by conveying wastewater to Hyperion Treatment Plant for treatment prior to discharge, whereas the stormwater drainage system conveys surface runoff directly to the Pacific Ocean.

The total disturbance area associated with the proposed project site measures approximately 0.4 acres, including the well sites and water main. Additional above-ground improvements that would be implemented as part of the proposed project





Project Site Plan

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include electrical cabinets, above-ground piping, and pipe appurtenances such as valves, meters, sample ports, paving, and miscellaneous site improvements. All of the additional above ground improvements would be located within the fenced Lot 9 area and would not be visible from the surrounding public streets.

The construction and testing phases of the proposed project are anticipated to require a total of 19 months, including well drilling, well equipping, installation of the pipeline to the existing WTP and installation of the waste line to convey wastewater generated during testing to the existing sewer system. The well testing phase would occur during this time period and would last up to 12 months, as required by the Division of Drinking Water Programs (DDW). DDW is part of the State Water Resources Control Board (SWRCB).

Equipment used for constructing the wells, water mains, and above-ground improvements would include the following: drill rig, generator, baker tank, compressor, pumps, backhoe, concrete trucks, and materials delivery trucks. Trenching will be used to install the pipeline. Access to the site of the wells would be provided via Alden Drive, and possibly through the existing City yard via an access point on Foothill Drive. Hours of construction would be limited to between 8:00 a.m. to 6:00 p.m., Monday through Friday, although crews may work after-hours to comply with the construction schedule, pending City approval.

Construction of the proposed project may require temporary lane detours or closures during installation of the new water pipeline and possibly during transport of the well drilling rig to the site. As part of the proposed project, site access would be maintained to the proposed dog park, to be located at the corner of Alden Drive and Foothill Road, if operational during construction of the proposed project. Alternate means of pedestrian access would be provided if the main access to the dog park requires closure during construction activities along Alden Drive

Finally, the proposed project includes a number of components to address site specific soil conditions. Given the known presence of arsenic contamination at the dog park site, the proposed project includes a Soil Management Plan that would address the presence of arsenic contaminated soils should they be discovered during drilling of the groundwater wells or installation of the associated conveyance pipelines. In addition, the project includes implementation of Best Management Practices (BMPs) to address potential stormwater quality issues during construction. These include the following:

- Use of straw wattles, silt fences, or other sediment containment methods placed around active disturbance areas;
- Protection of drain inlets from receiving polluted stormwater through the use of filters such as fabrics, gravel bags, or straw wattles;
- Construction of a stabilized construction entrance/exit to prevent tracking onto roadways;
- Use of oil pans under stationary vehicles, and establishment of a vehicle storage, maintenance, and refueling area, if needed, to minimize the spread of oil, gas, and engine fluids;



- Establish a worker education program for all field personnel to provide training in the appropriate application and construction of BMPs; and
- Prescribe hazardous materials handling procedures for reducing the potential for a spill during construction, and define an emergency response program to ensure quick and safe cleanup of accidental spills.

Also, given the nature of the proposed project, i.e. groundwater extraction, the City has included a ground elevation monitoring program as part of the proposed project. This would include a survey of ground elevation within a radius of 0.25 mile of the proposed wells prior to the start of project construction to establish a baseline elevation for the site. During the pump test phase (anticipated to be 12 months), a survey of ground elevation at the boundaries of the site would be conducted on a monthly basis. Once the wells become operational a survey of ground elevation would be conducted once every 3 months for one year. If no subsidence is identified, ground survey elevations during that time, the frequency of elevation monitoring would be reduced to once per year for the life of the wells. Should a change in ground elevation be identified during the life of the project, pumping would be suspended until an engineering evaluation can be conducted to determine the maximum subsidence tolerance for the adjacent structures and subsurface infrastructure. Once the evaluation is completed and it is determined that the maximum tolerance limit has not been exceeded, pumping would be allowed to resume. If subsidence, approaches the tolerance threshold identified in the engineering evaluation, pumping would be required to cease permanently unless a subsequent evaluation determines that reduced pumping levels could be allowed without any further subsidence occurring.

### 3. EXISTING SITE CONDITIONS

The project site is located on a City of Beverly Hills owned lot. The area where the project would be located is used as an access road and materials storage area and occupies a portion of a larger public works yard; referred to as Maple Yard. The project site is located on the portion of Maple Yard designated as Lot 9. Lot 9 shares a street address of 336 Foothill Road with adjacent City owned Lots 5, 6, 7 and 8. In its entirety, Lot 9 is 0.82 acres in size, although the proposed groundwater wells would only occur on the northern portion of the lot. See Figure 4 for photographs illustrating existing conditions at the site.

Maple Yard is bounded by Alden Drive and an auto dealership to the north; a three-story office complex to the east; Third Street and commercial uses to the south; and a City-owned surface parking lot to the west. Adjacent land uses specific to Lot 9 include City-owned Lots 5, 6, 7, and 8. Access to Lot 9 is available directly from Alden Drive or from Foothill Road through Lot 6. A row of mature trees lines the eastern border of Lot 9. There are two synagogues located in proximity to the site. Chabad of Northern Beverly Hills is approximately 180 feet northwest of the project site and Young Israel of Beverly Hills is 70 feet to the northeast.





**Photo 1:** Looking north from within Lot 9, towards the proposed location of the southern well (to be located between the truck shelter in the foreground and the container on the right side of the frame). Existing sewer and manhole to be removed are located on the west side of the truck shelter.



**Photo 2:** Looking north from within Lot 9 towards the Lot 9 access point from Alden Drive. The location of the northern well would be in the vicinity of the existing soil stockpile. The proposed raw water line would be aligned through the center of this road, joining the two new wells and continuing to Alden Drive. Nearby commercial uses located on the north side of Alden Drive are visible above the existing fence.

Site Photos

Figure 4a





**Photo 3:** Looking west from within Lot 9, approximately midway between the two proposed new wells, looking towards the existing Lot 5 on the west side of the wall (western boundary of Lot 9). White structure in Lot 6 is on the left side of the frame.



**Photo 4:** Looking south from within Lot 9, away from the proposed wells, toward the existing line of mature trees along the eastern boundary of the site. The proposed raw water line would be aligned through the center of this road, joining the two new wells and continuing to Alden Drive to the north (not in view).

Site Photos

Figure 4b

City of Beverly Hills

## 4. ANALYSIS

**Criterion (a)** *The project is consistent with the applicable general plan designation and all applicable general plan policies as well as with applicable zoning designation and regulations.*

According to the City of Beverly Hills General Plan Land Use Map, the project site is designated for low-density general commercial and municipal uses. The project site also is zoned P-S, Public Services Zone. Pursuant to the City of Beverly Hills Municipal Code (BHMC) Section 10-3-2031, the P-S zone permits public services uses including, but not limited to, community athletic facilities, human resources centers, municipal facilities, parks, public auditoriums, and vehicular circulation. The proposed groundwater wells are an allowed use on the project site.

The General Plan has several land-use policies that are relevant to the proposed project, including the following specifically applicable policies related to community character and quality and economic sustainability. Table 1 presents an evaluation of the project’s consistency with applicable Beverly Hills General Plan policies.

**Table 1**  
**Consistency with Beverly Hills General Plan Policies**

<p><b>LU 8.3 Institutional Uses.</b> <i>Regulate institutional uses in and adjoining residential neighborhoods to prevent adverse traffic, noise, and other impacts.</i></p>	<p><u>Consistent.</u> The proposed project is not located in a residential area and would not have a significant impact on traffic, noise, or other impact areas within nearby residential areas.</p>
<p><b>LU 13.3 Compatibility of Public Buildings and Sites.</b> <i>Ensure that City-owned buildings, sites, and infrastructure are designed to be compatible in scale, mass, character, architecture, and landscape with the district or neighborhood in which they are located.</i></p>	<p><u>Consistent.</u> The proposed project would consist of groundwater wells and below ground pipelines within an existing City public works yard and below an existing road. The project would be compatible with the existing character of the neighborhood which consists primarily of institutional and commercial uses.</p>
<p><b>CON 1.3 Water Distribution System.</b> <i>Upgrade, maintain, and expand water supply, distribution, pumping, storage, and treatment including facilities to address potential shortages in water supply from the California State Water Project and the Colorado River.</i></p>	<p><u>Consistent.</u> The proposed project would expand the City’s current water supply and conveyance system by creating a new local groundwater source.</p>

As shown in Table 1, the proposed project would be generally consistent with applicable General Plan policies. The project would be consistent with applicable zoning designation and regulations and General Plan designation and policies.

**Criterion (b)** *The proposed development occurs within city limits on a project site of no more than five acres substantially surrounded by urban uses.*

The project site is located on a 0.82-acre parcel within a developed urban neighborhood. It is immediately surrounded by urban uses on all sides, as shown in Figure 2.



**Criterion (c)** *The project site has no value as habitat for endangered, rare, or threatened species.*

The project site is located within a highly developed urban area that lacks habitat that would be suitable for sensitive animal or plant species. In addition, the portion of the site within Maple Yard is graded and is primarily comprised of bare ground; the remainder of the site on Alden Drive is paved. The nearby ornamental trees located on the eastern boundary of Lot 9 would not be removed or altered as part of the proposed project.

**Criterion (d)** *Approval of the project would not result in any significant effects relating to traffic, noise, air quality, or water quality.*

The following discussion provides an analysis of the project's potential effects with respect to traffic, noise, air quality, and water quality.

#### A. TRAFFIC

Operations. The proposed project would not result in any new traffic trips during the operational phase or be regularly accessed, other than for maintenance. The project is expected to result in one daily trip to and from the site after completion of the wells for production.

Construction. Construction of the proposed project may require temporary lane detours or closures during installation of the new water pipeline and possibly during transport of the well drilling rig to the site. However, due to the small size of the project site, the temporary nature of the lane alterations and availability of alternate routes within a relatively short distance, temporary closures would not be expected to result in a change in traffic that is substantial in relation to existing traffic patterns or capacity. The proposed project would not introduce operational hazards such as sharp curves, dangerous intersections, or uses that would be incompatible with surrounding commercial, civic, and institutional properties.

Public transit, bikeways, and pedestrian facilities. The project would have no impact on adopted policies, plans, or programs regarding public transit, bikeways, or pedestrian facilities. Also, the proposed project would be limited to site-specific improvements and would not damage the performance or safety of any public transit or bikeway facilities. However, the site of the proposed dog park, which if approved would be located at the corner of Alden Drive and Foothill Road, is located approximately 50 feet at its closest point from the project footprint. The proposed access to the dog park is located on Alden Drive and could be affected during construction activities if sidewalk access is restricted. However, the project proposes to maintain access, or provide alternate access, to the proposed dog park if it is operational during the construction of the proposed project.

Conclusion. The project would not significantly impact traffic or transit in the area. The assessment of traffic impacts and construction impacts determined that there would be no significant impacts.



## B. NOISE

Noise Characteristics and Measurement. Noise level (or volume) is generally measured in decibels (dB) using the A-weighted sound pressure level (dBA). The A-weighting scale is an adjustment to the actual sound power levels to be consistent with that of human hearing response, which is most sensitive to frequencies around 4,000 Hertz (about the highest note on a piano) and less sensitive to low frequencies (below 100 Hertz).

One of the most frequently used noise metrics that considers duration as well as sound power level is the equivalent noise level ( $L_{eq}$ ). The  $L_{eq}$  is defined as the steady A-weighted level that is equivalent to the same amount of energy as that contained in the actual varying levels over a period of time (essentially,  $L_{eq}$  is the average sound level).

Noise Standards. The City of Beverly Hills' General Plan incorporates comprehensive goals, policies, and implementing actions related to noise and acceptable noise levels. These policies address unnecessary, excessive, and annoying noise levels and sources, such as vehicles, construction, special sources (e.g., radios, musical instrument, animals) and stationary sources (e.g., heating and cooling systems, mechanical rooms).

For traffic-related noise, impacts would be significant if project-generated traffic results in the exposure of sensitive receptors to a perceptible increase in roadway noise. Roughly a doubling of traffic volume would be necessary to generate a perceptible increase in roadway noise levels of 3 dBA or more.

Impacts relating to on-site activities would be significant when project-related activities create noise exceeding the standards as identified by the applicable noise zone for the project site. The project site is zoned for public services uses. The closest noise-sensitive uses are two synagogues. Chabad of Northern Beverly Hills is approximately 180 feet northwest of the project site and Young Israel of Beverly Hills is 70 feet to the northeast. It should be noted that neither synagogue has usable outdoor space such as playgrounds oriented towards the project site.

Existing Ambient Noise Levels. The most common sources of noise in the project vicinity are the industrial noises associated with the City public works yard on the lot where the project would occur. Other noise sources include surrounding commercial and industrial uses and noise from automobiles, trucks, and motorcycles traveling along Foothill Road, Alden Drive, and West 3<sup>rd</sup> Street. Motor vehicle noise is of concern because it is characterized by a high number of individual events, which often create a sustained noise level, and because of its proximity to areas sensitive to noise exposure.

On July 1, 2015, Rincon Consultants, Inc. performed one 15-minute weekday noise measurement using an ANSI Type II integrating sound level meter at the northern boundary of the project site adjacent to Alden Drive. As shown on Table 2, existing ambient noise levels at the project site were measured at 67.7 dBA Leq. The primary source of noise during this noise measurement was a truck unloading, which was recorded from a distance of approximately 30 feet. Secondary noise sources included a water truck and light aircraft noise.



**Table 2  
 Noise Measurement Results**

Measurement Location	Noise Sources	dBA Leq <sup>1</sup>
Alden Drive – Northern Boundary of Project Site	Primary: truck unloading; Secondary: light aircraft, back-up beeping from water truck	67.7

*Source: Rincon Consultants, Inc., July 1, 2015. Recorded during field visit using ANSI Type II Integrating sound level meter.*

<sup>1</sup> *The equivalent noise level (Leq) is defined as the single steady A-weighted level that is equivalent to the same amount of energy as that contained in the actual fluctuating levels over a period of time (essentially, the average noise level). For this measurement, the Leq was over a 15-minute period.*

Construction Noise. Noise from construction of the proposed project would result from construction of the groundwater wells and water main, as well as traffic noise from construction vehicles. Nearby noise-sensitive land uses, including the two synagogues approximately 70 feet northeast and 180 feet northwest of the project site, would be exposed to temporary construction noise during development of the proposed project. In addition, the site of the proposed dog park, which if approved would be located at the corner of Alden Drive and Foothill Road, is located approximately 50 feet at its closest point from the project footprint. Depending on when the dog park becomes operational, if approved, users could be exposed to temporary construction noise during installation of the pipework in Alden Drive.

Noise impacts are a function of the type of activity being undertaken and the distance to the receptor location. The grading and trenching phases of project construction tend to create the highest construction noise levels because of the operation of heavy equipment. As shown in Table 3, noise levels associated with construction equipment typically range from about 77 dBA to 82 dBA at 70 feet from the source (distance to the nearest sensitive receptor).



**Table 3  
 Typical Maximum Construction Equipment Noise Levels**

Equipment	Noise Level At 50 Feet (dBA)	Noise Level At 70 Feet (dBA)	Typical Duty Cycle (%)
Auger Drill Rig	85	82	20
Backhoe	80	77	40
Compressor (air)	80	77	40
Concrete Mixer Truck	85	82	40
Concrete Pump	82	79	20

*Source: Thalheimer 2000  
 KVA = kilovolt amps.*

Construction of the groundwater wells and conveyance infrastructure would result in short-term construction noise. Construction is expected to predominately occur between 8 AM and 6 PM Monday through Friday. The project would comply with the City's construction noise requirements (BHMC Section 5-1-202) and would acquire after-hours construction permits, if necessary. Although construction of the project could result in exterior noise levels of 82 dBA at 70 feet from the source, nearby sensitive receptors do not have outdoor useable spaces and the project would not expose people to excessive noise levels. With compliance with the City's construction noise ordinance, impacts from temporary construction noise would be less than significant.

Construction Vibration. Vibration energy is carried through buildings, structures, and the ground, whereas ambient noise is carried through the air. Thus, vibration is generally felt rather than heard. Some vibration effects can be caused by noise, such as the rattling of windows from truck pass-bys. This phenomenon is caused by the coupling of the acoustic energy at frequencies that are close to the resonant frequency of the material being vibrated. Typically, groundborne vibration generated by manmade activities attenuates rapidly as distance from the source of the vibration increases and vibration rapidly diminishes in amplitude with distance from the source. The ground motion caused by vibration is measured as particle velocity in inches per second and is referenced as vibration decibels (VdB) in the U.S.

The vibration velocity level threshold of perception for humans is approximately 65 VdB. A vibration velocity of 75 VdB is the approximate dividing line between barely perceptible and distinctly perceptible levels for many people. Most perceptible indoor vibration is caused by sources within buildings such as operation of mechanical equipment, movement of people, or the slamming of doors. Typical outdoor sources of perceptible groundborne vibration are construction equipment, steel wheeled trains, and traffic on rough roads. If a roadway is smooth, the groundborne vibration from traffic is barely perceptible. The range of interest is from approximately 50 VdB, which is the typical background vibration velocity, to 100 VdB, which is the general threshold where minor damage can occur in fragile buildings.



Significant impacts occur when vibration or groundborne noise levels exceed the Federal Railroad Administration (FRA) maximum acceptable level threshold of 65 VdB for buildings where low ambient vibration is essential for interior operations (such as hospitals and recording studios), 72 VdB for residences and buildings where people normally sleep, including hotels, and 75 VdB for institutional land uses with primary daytime use (such as churches and schools). Construction activities that would occur on the project site have the potential to generate groundborne vibration. Table 4 shows typical vibration levels for various pieces of construction equipment.

**Table 4  
Vibration Source Levels for Construction Equipment**

Equipment		Approximate L <sub>v</sub> <sup>1</sup> VdB at 25ft
Pile Driver (impact)	Upper Range	112
	Typical	104
Pile Driver (sonic)	Upper Range	105
	Typical	93
Hydromill (slurry wall)	Soil	66
	Rock	75
Clam shovel drop (slurry wall)		94
Vibratory Roller		94
Hoe Ram		87
Large Bulldozer		87
Caisson Drilling		87
Loaded Trucks		86
Jackhammer		79
Small bulldozer		58

<sup>1</sup> rms velocity in decibels (VdB) re 1 micro-inch/second  
Source: FTA 2006

As shown in Table 4, construction vibration is typically associated with large bulldozers, pile drivers, and rollers. Vibration levels shown in Table 4 are at 25 feet from the source. The closest vibration-sensitive uses are two synagogues. Chabad of Northern Beverly Hills is approximately 180 feet northwest of the project site and Young Israel of Beverly Hills is 70 feet to the northeast. Construction of the project would not include equipment that would result in high vibration levels, including vibration related to drilling activities. Equipment anticipated to be required for the proposed project include: small and large bulldozers, jackhammer, and loaded trucks. The caisson drilling equipment is representative of the level of vibration associated with well drilling activities. Impacts would be less than significant.

Operational Noise. Existing uses near the project site may periodically be subject to noises associated with operation of the proposed project. Operation of shallow groundwater wells typically generates noise from operation of pumps and generators. The project's proposed



equipment includes a submersible pump, which would not generate audible noise. In addition, the project would not include the use of generators.

The project site is entirely surrounded by commercial, civic, and institutional uses. The closest noise-sensitive receptors are two synagogues: Chabad of Northern Beverly Hills and Young Israel of Beverly Hills. There are no residential uses located within 500 feet of the project site. Operation of the groundwater well would occur 24 hours per day; however, the pumps would be entirely submerged and would not generate noise that would substantially increase current ambient noise levels at nearby sensitive receptors approximately 70 feet and 180 feet from the project site.

No increases in long term noise would be associated with the sentinel wells included in the proposed project, as they would not include any aboveground infrastructure for pumping. They would be periodically pumped, likely by hand or with a small battery powered pump, as part of the sampling regime. This activity would be short in duration and infrequent.

In addition, during operation the proposed project would result in one new vehicle trip to and from the site and would, therefore, not incrementally increase traffic noise on study area roadways or at neighboring uses. Overall operational noise impacts would be less than significant.

Conclusion. The proposed project is not expected to result in a significant long-term increase in traffic noise levels, and temporary construction noise would be less than significant, based on compliance with the City's time restrictions on construction activities, contained in the City's Municipal Code. The project does not propose operational changes that would be expected to have an effect on daily on-site operational noise generated at Maple Yard. Therefore, noise-related impacts resulting from implementation of the proposed project would be less than significant.

### C. AIR QUALITY

A significant adverse air quality impact may occur when a project individually or cumulatively interferes with progress toward the attainment of the ozone standard by releasing emissions that equal or exceed the established long term quantitative thresholds for pollutants, or causes an exceedance of a state or federal ambient air quality standard for any criteria pollutant. Because the project site is located within the South Coast Air Basin and falls under the jurisdiction of the South Coast Air Quality Management District (SCAQMD), this air quality analysis conforms to the methodologies recommended in SCAQMD's CEQA Air Quality Handbook (1993). The following significance thresholds have been recommended by the SCAQMD for project operations within the South Coast Air Basin:

- 55 pounds per day of ROG;
- 55 pounds per day of NO<sub>x</sub>;
- 550 pounds per day of CO;
- 150 pounds per day of PM<sub>10</sub>; and
- 55 pounds per day of PM<sub>2.5</sub>.



Construction-related air quality impacts are considered significant if emissions associated with construction activity would exceed adopted SCAQMD thresholds. Temporary construction emission thresholds have been recommended by the SCAQMD on a daily basis as follows:

- 75 pounds per day of ROG;
- 100 pounds per day of NO<sub>x</sub>;
- 550 pounds per day of CO;
- 150 pounds per day of PM<sub>10</sub>; and
- 55 pounds per day of PM<sub>2.5</sub>.

In addition to the regional air quality thresholds shown above, SCAQMD has developed Localized Significance Thresholds (LSTs) in response to the Governing Board's Environmental Justice Enhancement Initiative (1-4). LSTs were devised in response to concern regarding exposure of individuals to criteria pollutants in local communities. For the purposes of a CEQA analysis, SCAQMD considers a sensitive receptor to be a receptor, such as a residence, hospital, or convalescent facility, where it is possible that an individual could remain for 24 hours (SCAQMD, 2008). The nearest sensitive receptors are residences located approximately 500 feet northeast and approximately 1,000 feet south of the project site. The closest medical center is the Thaliens Community Mental Health Center, located approximately one mile east of the site. LSTs represent the maximum emissions from a project that would not cause or contribute to an air quality exceedance of the most stringent applicable federal or state ambient air quality standard at the nearest sensitive receptor, taking into consideration ambient concentrations in each Source Receptor Area (SRA), project size, and distance to the sensitive receptor. However, LSTs only apply to emissions within a fixed stationary location, including idling emissions during both project construction and operation. LSTs have only been developed for NO<sub>x</sub>, CO, PM<sub>10</sub> and PM<sub>2.5</sub>. LSTs are not applicable to mobile sources, such as cars on a roadway (SCAQMD, 2008). LSTs have been developed for emissions within project areas up to five acres in size, with air pollutant modeling recommended for activity within larger areas. The SCAQMD provides a lookup table for sites that measure one, two or five acres. The disturbance area within the project site measures approximately 0.4 acres, including the well sites and water main, and is located in Source Receptor Area 2 (SRA-2). SRA-2 is designated by SCAQMD as Northwest Coastal LA County and includes Beverly Hills. The construction emission LSTs shown in Table 5 are from the LST lookup tables for one-acre project sites. The thresholds in Table 5 were determined based on the distance from the project site to the nearest sensitive receptor, located 500 feet northeast of the project site.

Operational Emissions. Combustion of any type of fuel emits criteria pollutants directly into the atmosphere; when this occurs on a project site, the project is a direct emission source. Operation of the proposed project would not require the use of a generator or result in new vehicle trips that would generate long term criteria pollutant emissions; therefore, no direct criteria pollutants would result from pumping groundwater on the project site. Instead, the proposed project would be connected to the electricity grid and operation of the groundwater pumps would use electricity generated offsite and supplied by Southern California Edison. The proposed project would indirectly produce criteria pollutant emissions by using electricity; however, electricity generators are regulated separately by the SCAQMD as stationary sources.



Construction Emissions. Construction vehicles and equipment, grading, excavating, and stockpiled soils have the potential to generate fugitive dust (PM<sub>10</sub> and PM<sub>2.5</sub>) through the exposure of soil to wind erosion and dust entrainment. In addition, exhaust emissions associated with heavy construction equipment would potentially degrade air quality. Dust and exhaust emissions associated with construction activities are considered temporary air quality impacts.

Emissions associated with the proposed project were estimated using the California Emissions Estimator Model (CalEEMod) version 2013.2.2. Complete CalEEMod results and assumptions are included in Appendix A. The proposed project's construction-related impacts were calculated based on parameters such as the duration of construction activity, area of disturbance, and anticipated equipment use during construction. For the purposes of calculating emissions, compliance with the regulatory requirements of SCAQMD Rule 1113 regarding the use of low-VOC paint was assumed for the wellhead enclosure, if constructed. In addition, it was assumed that the project would comply with SCAQMD Rule 403, which identifies measures to reduce fugitive dust and is required to be implemented at all construction sites located within the Basin. Therefore, the following conditions, which would be required to reduce fugitive dust in compliance with SCAQMD Rule 403, were assumed for the grading/excavation phase of construction.

1. **Minimization of Disturbance.** Construction contractors shall minimize the area disturbed by clearing, grading, earth moving, or excavation operations to prevent excessive amounts of dust.
2. **Soil Treatment.** Construction contractors shall treat all graded and excavated material, exposed soil areas, and active portions of the construction site, including unpaved on-site roadways to minimize fugitive dust. Treatment shall include, but not necessarily be limited to, periodic watering, application of environmentally safe soil stabilization materials, and/or roll compaction as appropriate. Watering shall be done as often as necessary, and at least twice daily, preferably in the late morning and after work is done for the day.
3. **Soil Stabilization.** Construction contractors shall monitor all graded and/or excavated inactive areas of the construction site at least weekly for dust stabilization. Soil stabilization methods, such as water and roll compaction, and environmentally safe dust control materials, shall be applied to portions of the construction site that are inactive for over four days. If no further grading or excavation operations are planned for the area, the area shall be seeded and watered until landscape growth is evident, or periodically treated with environmentally safe dust suppressants, to prevent excessive fugitive dust.
4. **No Grading During High Winds.** Construction contractors shall stop all clearing, grading, earth moving, and excavation operations during periods of high winds (20 miles per hour or greater, as measured continuously over a one-hour period).
5. **Street Sweeping.** Construction contractors shall sweep all on-site driveways and adjacent streets and roads at least once per day, preferably at the end of the day, if visible soil material is carried over to adjacent streets and roads.

Complete CalEEMod results and assumptions are included in Appendix A. Table 3 summarizes the estimated maximum daily emissions of pollutants during construction. As shown in Table 5, project emissions would not exceed SCAQMD's regional construction thresholds.



**Table 5  
 Estimated Maximum Daily Construction Emissions**

Construction Year	Maximum Daily Emissions (lbs/day)					
	ROG	NO <sub>x</sub>	CO	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>x</sub>
<b>2015 Maximum Daily Emissions</b>	5.4	44.6	30.8	3.7	2.9	0.05
<b>2016 Maximum Daily Emissions</b>	4.4	35.8	25.6	2.9	2.2	0.04
<b>SCAQMD Regional Thresholds</b>	75	100	550	150	55	150
<b>Threshold Exceeded?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>

*Notes: All calculations were made using the CalEEMod. See Appendix A for calculations.*

Conclusion. The proposed project would not generate significant air quality impacts. Additionally, as discussed in the Traffic section, this project would not result in significant increases in traffic at intersections. Thus, the project would not require analysis for CO hotspots, based on the recommendations contained in Caltrans' Transportation Project CO Protocol Manual.

#### **D. GREENHOUSE GAS EMISSIONS**

Climate Change and Greenhouse Gases. Climate change is the observed increase in the average temperature of the Earth's atmosphere and oceans along with other substantial changes in climate (such as wind patterns, precipitation, and storms) over an extended period of time. Climate change is the result of numerous, cumulative sources of greenhouse gases (GHGs). GHGs contribute to the "greenhouse effect," which is a natural occurrence that helps regulate the temperature of the planet. The majority of radiation from the Sun hits the Earth's surface and warms it. The surface in turn radiates heat back towards the atmosphere, known as infrared radiation. Gases and clouds in the atmosphere trap and prevent some of this heat from escaping back into space and re-radiate it in all directions. This process is essential to supporting life on Earth because it warms the planet by approximately 60° Fahrenheit. Emissions from human activities since the beginning of the industrial revolution (approximately 250 years ago) are adding to the natural greenhouse effect by increasing the gases in the atmosphere that trap heat, thereby contributing to an average increase in the Earth's temperature.

GHGs occur naturally and from human activities. Human activities that produce GHGs are the burning of fossil fuels (coal, oil and natural gas for heating and electricity, gasoline and diesel for transportation); methane from landfill wastes and raising livestock, deforestation activities; and some agricultural practices. Greenhouse gases produced by human activities include carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF<sub>6</sub>). Since 1750, it is estimated that the concentrations of carbon dioxide, methane, and nitrous oxide in the atmosphere have increased over by 36%, 148%, and 18% respectively, primarily due to human activity. Emissions of GHGs affect the atmosphere directly by changing its chemical composition while changes to the land surface indirectly affect the atmosphere by changing the way in which the Earth absorbs gases from the atmosphere. Potential impacts in California of global warming may include loss in snow



pack, sea level rise, more extreme heat days per year, more high ozone days, more large forest fires, and more drought years (CEC, March 2009).

The adopted *CEQA Guidelines* provide regulatory guidance on the analysis and mitigation of GHG emissions in CEQA documents, while giving lead agencies the discretion to set quantitative or qualitative thresholds for the assessment and mitigation of GHGs and climate change impacts. The 2008 SCAQMD threshold considers emissions of over 10,000 metric tons carbon dioxide equivalent (CO<sub>2</sub>E) per year to be significant. However, the SCAQMD's threshold applies only to stationary sources and is expressly intended to apply only when the SCAQMD is the CEQA lead agency. Although not yet adopted, the SCAQMD has a recommended tiered GHG significance threshold (SCAQMD, 2010). Under Tier 2, proposed projects would be less than significant if the project is consistent with an approved GHG reduction plan. Tier 3 includes screening level quantitative thresholds. As the City of Beverly Hills does not have an adopted GHG reduction plan or Climate Action Plan, the proposed project was compared to Tier 3 quantitative thresholds. SCAQMD has a recommended Tier 3 screening level quantitative threshold for all land use types of 3,000 metric tons CO<sub>2</sub>E /year.

Proposed Project GHG Emissions. GHG emissions associated with the proposed project were estimated using CalEEMod. The analysis focuses on CO<sub>2</sub>, N<sub>2</sub>O, and CH<sub>4</sub> as these are the GHG emissions that onsite development would generate in the largest quantities. Emissions of fluorinated gases, such as HFCs, PFCs, and SF<sub>6</sub> would not be significant since fluorinated gases are primarily associated with industrial processes. Complete CalEEMod results and assumptions can be viewed in Appendix A.

Construction and Operational Emissions. Based on the CalEEMod modeling results, construction activity for the project would generate an estimated 313.5 metric tons CO<sub>2</sub>E. For the purpose of comparing construction emissions with annual emissions from operation of the proposed project, it is useful to amortize them over a 30-year period (the assumed life of the project) (SCAQMD, 2009). Thus, construction of the proposed project would generate an estimated 10.5 metric tons CO<sub>2</sub>E per year.

The project would install two shallow groundwater wells that would operate 24 hours a day. Each well is anticipated to produce 200 gallons per minute (gpm) to 300 gpm of water. Operation of the project would not generate vehicle trips or associated mobile GHG emissions, which typically make up the bulk of operational GHG emissions. The project would generate GHG emissions through operation of the shallow groundwater pumps; however, electricity consumption and associated GHG emissions would be offset by the energy reduction that would result from reducing the City's reliance on imported water obtained from Metropolitan. As the project would reduce reliance on imported water, it would subsequently reduce CO<sub>2</sub> emissions associated with the transfer of water from northern to southern California. The project's construction and operational GHG emissions would not exceed SCAQMD's recommended 3,000 metric tons CO<sub>2</sub>E per year threshold; therefore, the GHG impacts of the proposed project would be less than significant and no mitigation is required.

Conclusion. The proposed project is not expected to generate GHG emissions that would result in a significant impact.



## E. WATER QUALITY

Urban runoff can have a variety of deleterious effects. Oil and grease contain a number of hydrocarbon compounds, some of which are toxic to aquatic organisms at low concentrations. Heavy metals such as lead, cadmium, and copper are the most common metals found in urban stormwater runoff. These metals can be toxic to aquatic organisms, and have the potential to contaminate drinking water supplies. Nutrients from fertilizers, including nitrogen and phosphorous, can result in excessive or accelerated growth of vegetation or algae, resulting in oxygen depletion and additional impaired uses of water.

Currently, the project site is almost entirely covered with impervious surfaces. Stormwater runoff currently enters storm drains on west side of 331 No. Maple Drive and flows to existing City drainage facilities. Neither the permeability nor the hydrology of the site would substantially change with project implementation, as the amount of impervious surfaces with the proposed project would be comparable to existing conditions.

During construction of the proposed project, ground-disturbing activities and the use of heavy equipment and machinery would introduce the potential for water quality degradation to occur as a result of erosion/sedimentation, or the accidental leak or release of hazardous materials such as vehicle fuels and lubricants. This could occur as a result of the runoff of loose soils or the mobilization of released construction materials to local storm drains that eventually merge with downstream waters.

In accordance with National Pollutant Discharge Elimination System (NPDES) regulations specified in Section 402 of the federal Clean Water Act, if a project disturbs more than one acre of land, the project contractor is required to implement a Storm Water Pollution Prevention Plan (SWPPP) which specifies best management practices (BMPs) to be implemented as part of the project. These BMPs include erosion and sediment controls such as the use of silt fences and straw wattles to prevent loose soils from leaving the project disturbance area such as in the case of a precipitation event, as well as measures to prevent and contain accidental spills or leaks of potentially hazardous materials. The proposed project would disturb less than one acre of land; therefore, a SWPPP would not be required. However, the City has included implementation of SWPPP-equivalent BMPs as part of the project, as described in the *Project Description*.

In addition, as noted in the *Project Description*, wastewater generated during implementation of the testing phase of the proposed wells would be conveyed to an existing City sewer line via a short section of new well waste line. This activity would not require issuance of a Waste Discharge Requirement by the RWQCB because, per Division 7, Article 4 of the California Water Code, the conveyance of waste discharge to an existing community sewer line does not constitute a "point source" discharge. The nearest stormdrain to the proposed well locations is understood to be located along the west side of 331 No. Maple Drive; in accordance with NPDES requirements, no fluids or wastewater extracted from the proposed wells during drilling, development, and testing activities would be allowed to flow onto adjoining properties or directly into any stormdrains (City of Beverly Hills, 2009). As noted in the *Project Description*, wastewater conveyed in the City's sewer system is treated at Hyperion Treatment Plant prior to discharge.



The project is also proposing to include a series of sentinel monitoring wells and a water quality plan. The sentinel groundwater wells would be monitored for the lifetime of the project, and monthly reports would be produced to assess whether subsurface contaminants are migrating towards the new wells as a result of groundwater pumping. The water quality plan would specify limits of water quality constituents. Limits would be based on Drinking Water standards established by the State of California. See the *Project Description* for further detail.

There are no streams or rivers on or near the project site, and the project would not alter the course of any stream or river. There are existing stormwater drains in the project area and, although the project may contribute some construction-related surface runoff to an existing storm drain, it would not alter the course or alignment of existing drains.

Topography of the project site, including the pipeline route, is relatively flat, and precipitation runs off the project site in the form of sheet flow across the surface to the City's existing storm drain system. The introduction of new above-ground infrastructure to the project site could potentially alter site-specific drainage patterns by diverting surface flows around the new structures. However, if wellhead housing structures are included as part of the project, the footprint would be approximately 450 square feet, or 0.01 acre per structure, or 0.02 acres for two structures. The lot on which the proposed new wells would be located is 0.82 acre in size, although the wells themselves would be confined to the northern portion of the lot. The wellhead housing structures, if used, would comprise approximately 2.4 percent of the overall lot. This is not expected to introduce substantial drainage pattern alterations.

The pipeline included as part of the proposed project would be installed in an existing roadway, partially parallel to an existing below-grade pipeline. Following the completion of construction, drainage patterns along the pipeline route would be the same as under existing conditions.

Conclusion. The proposed project would not adversely affect underground aquifers, drainage patterns, or surface water quality. Impacts related to water quality would be less than significant.

**Criterion (e)** *The site can be adequately served by all required utilities and public services.*

The project would be located in an existing highly urban area served by existing public utilities and services. A substantial increase in demand for services or utilities would not be anticipated with implementation of the proposed project. The proposed project would not increase the amount of sewage or solid waste produced on the site. The City of Beverly Hills provides water, sewer, and solid waste collection services to the site and would continue to provide these services to the proposed project. Other services, including gas and electricity, would also continue to be provided to the proposed project by existing service providers. Thus, the project meets this criterion for exemption.

## F. HISTORIC RESOURCES

State CEQA Guidelines Section 15300.2 states that a categorical exemption "shall not be used for a project which may cause a substantial adverse change in the significance of a historical resource." The City of Beverly Hills General Plan Historic Preservation Element identifies the



Payne Furnace & Supply Co. as being on the State Historic Resources Inventory. This building is located on a different lot within Maple Yard, but shares the same street address as the project site. The proposed project would not result in a change to the structure or the character of its general setting. Therefore, while this building is located in proximity to the proposed project, the project would not result in a substantial adverse change to the significance of this historical resource as defined in §15064.5. The proposed project would not result in a substantial adverse change in the significance of a historic resource.

## **5. SUMMARY**

Based on this analysis, the proposed Shallow Well Drilling Project at Maple Yard meets all criteria for a Class 32 Categorical Exemption pursuant to Section 15332 of the *State CEQA Guidelines*.



## 6. REFERENCES

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## **Appendix A**

*CalEEMod Calculation Sheets*



**New City Groundwater Wells  
South Coast AQMD Air District, Winter**

**1.0 Project Characteristics**

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**1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Parking Lot	0.40	Acre	0.40	17,424.00	0

**1.2 Other Project Characteristics**

<b>Urbanization</b>	Urban	<b>Wind Speed (m/s)</b>	2.2	<b>Precipitation Freq (Days)</b>	31
<b>Climate Zone</b>	11			<b>Operational Year</b>	2017
<b>Utility Company</b>	Southern California Edison				
<b>CO2 Intensity (lb/MW hr)</b>	630.89	<b>CH4 Intensity (lb/MW hr)</b>	0.029	<b>N2O Intensity (lb/MW hr)</b>	0.006

**1.3 User Entered Comments & Non-Default Data**

Project Characteristics -

Land Use -

Construction Phase - construction phases based on schedule prepared for the project

Off-road Equipment - Hours/day based on City's specific hours allowable for construction activities

Off-road Equipment - Based on equipment list provided for project construction

Grading -

Off-road Equipment - From equipment list provided for the project

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	1.00	60.00
tblConstructionPhase	NumDays	1.00	100.00
tblConstructionPhase	PhaseEndDate	4/29/2016	10/17/2016
tblConstructionPhase	PhaseStartDate	12/12/2015	5/31/2016
tblOffRoadEquipment	HorsePower	205.00	174.00
tblOffRoadEquipment	HorsePower	78.00	174.00
tblOffRoadEquipment	HorsePower	84.00	97.00
tblOffRoadEquipment	LoadFactor	0.50	0.41
tblOffRoadEquipment	LoadFactor	0.48	0.41
tblOffRoadEquipment	LoadFactor	0.74	0.37
tblOffRoadEquipment	OffRoadEquipmentType	Graders	Bore/Drill Rigs
tblOffRoadEquipment	OffRoadEquipmentType	Graders	Air Compressors
tblOffRoadEquipment	OffRoadEquipmentType	Tractors/Loaders/Backhoes	Generator Sets
tblOffRoadEquipment	OffRoadEquipmentType		Air Compressors
tblOffRoadEquipment	OffRoadEquipmentType		Generator Sets
tblOffRoadEquipment	OffRoadEquipmentType		Pumps
tblOffRoadEquipment	OffRoadEquipmentType		Pumps
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tblProjectCharacteristics	OperationalYear	2014	2017
tblTripsAndVMT	WorkerTripNumber	18.00	15.00
tblTripsAndVMT	WorkerTripNumber	15.00	13.00

**2.0 Emissions Summary**

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**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	0.3483	0.0000	4.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000		9.0000e-005	9.0000e-005	0.0000		9.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
<b>Total</b>	<b>0.3483</b>	<b>0.0000</b>	<b>4.0000e-005</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>9.0000e-005</b>	<b>9.0000e-005</b>	<b>0.0000</b>	<b>0.0000</b>	<b>9.0000e-005</b>

**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	0.3483	0.0000	4.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000		9.0000e-005	9.0000e-005	0.0000		9.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
<b>Total</b>	<b>0.3483</b>	<b>0.0000</b>	<b>4.0000e-005</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>9.0000e-005</b>	<b>9.0000e-005</b>	<b>0.0000</b>	<b>0.0000</b>	<b>9.0000e-005</b>

	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
Percent Reduction	0.00	0.00	0.00	0.00	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

#### Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Drilling	Site Preparation	9/21/2015	12/11/2015	5	60	
2	Well Equipping	Site Preparation	5/31/2016	10/17/2016	5	100	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Well Equipping	Air Compressors	1	10.00	174	0.41
Well Equipping	Generator Sets	1	10.00	97	0.37
Drilling	Air Compressors	1	10.00	78	0.48
Drilling	Bore/Drill Rigs	1	10.00	174	0.41
Drilling	Generator Sets	1	10.00	84	0.74
Drilling	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Drilling	Pumps	2	10.00	84	0.74
Well Equipping	Pumps	2	10.00	84	0.74
Well Equipping	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Drilling	Graders	1	8.00	174	0.41
Well Equipping	Graders	1	8.00	174	0.41

**Trips and VMT**

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Drilling	7	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Well Equipping	6	13.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

**3.1 Mitigation Measures Construction**

**3.2 Drilling - 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					0.5303	0.0000	0.5303	0.0573	0.0000	0.0573			0.0000			0.0000
Off-Road	5.3282	44.5306	29.8854	0.0467		2.9972	2.9972		2.9047	2.9047		4,603.4680	4,603.4680	0.8445		4,621.2031
<b>Total</b>	<b>5.3282</b>	<b>44.5306</b>	<b>29.8854</b>	<b>0.0467</b>	<b>0.5303</b>	<b>2.9972</b>	<b>3.5274</b>	<b>0.0573</b>	<b>2.9047</b>	<b>2.9620</b>		<b>4,603.4680</b>	<b>4,603.4680</b>	<b>0.8445</b>		<b>4,621.2031</b>

**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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0710	0.0954	0.9954	1.9900e-003	0.1677	1.4800e-003	0.1691	0.0445	1.3500e-003	0.0458		173.3491	173.3491	9.9500e-003		173.5581
<b>Total</b>	<b>0.0710</b>	<b>0.0954</b>	<b>0.9954</b>	<b>1.9900e-003</b>	<b>0.1677</b>	<b>1.4800e-003</b>	<b>0.1691</b>	<b>0.0445</b>	<b>1.3500e-003</b>	<b>0.0458</b>		<b>173.3491</b>	<b>173.3491</b>	<b>9.9500e-003</b>		<b>173.5581</b>

**3.2 Drilling - 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					0.5303	0.0000	0.5303	0.0573	0.0000	0.0573			0.0000			0.0000
Off-Road	5.3282	44.5306	29.8854	0.0467		2.9972	2.9972		2.9047	2.9047	0.0000	4,603.4680	4,603.4680	0.8445		4,621.2031
<b>Total</b>	<b>5.3282</b>	<b>44.5306</b>	<b>29.8854</b>	<b>0.0467</b>	<b>0.5303</b>	<b>2.9972</b>	<b>3.5274</b>	<b>0.0573</b>	<b>2.9047</b>	<b>2.9620</b>	<b>0.0000</b>	<b>4,603.4680</b>	<b>4,603.4680</b>	<b>0.8445</b>		<b>4,621.2031</b>

**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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0710	0.0954	0.9954	1.9900e-003	0.1677	1.4800e-003	0.1691	0.0445	1.3500e-003	0.0458		173.3491	173.3491	9.9500e-003		173.5581
<b>Total</b>	<b>0.0710</b>	<b>0.0954</b>	<b>0.9954</b>	<b>1.9900e-003</b>	<b>0.1677</b>	<b>1.4800e-003</b>	<b>0.1691</b>	<b>0.0445</b>	<b>1.3500e-003</b>	<b>0.0458</b>		<b>173.3491</b>	<b>173.3491</b>	<b>9.9500e-003</b>		<b>173.5581</b>

**3.3 Well Equipping - 2016**

**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					0.5303	0.0000	0.5303	0.0573	0.0000	0.0573			0.0000			0.0000
Off-Road	4.3135	35.7705	24.7909	0.0400		2.3134	2.3134		2.2467	2.2467		3,874.1390	3,874.1390	0.5593		3,885.8849
<b>Total</b>	<b>4.3135</b>	<b>35.7705</b>	<b>24.7909</b>	<b>0.0400</b>	<b>0.5303</b>	<b>2.3134</b>	<b>2.8437</b>	<b>0.0573</b>	<b>2.2467</b>	<b>2.3040</b>		<b>3,874.1390</b>	<b>3,874.1390</b>	<b>0.5593</b>		<b>3,885.8849</b>

**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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0555	0.0745	0.7786	1.7300e-003	0.1453	1.2100e-003	0.1465	0.0385	1.1200e-003	0.0397		145.0430	145.0430	7.9300e-003		145.2096
<b>Total</b>	<b>0.0555</b>	<b>0.0745</b>	<b>0.7786</b>	<b>1.7300e-003</b>	<b>0.1453</b>	<b>1.2100e-003</b>	<b>0.1465</b>	<b>0.0385</b>	<b>1.1200e-003</b>	<b>0.0397</b>		<b>145.0430</b>	<b>145.0430</b>	<b>7.9300e-003</b>		<b>145.2096</b>

**3.3 Well Equipping - 2016**

**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					0.5303	0.0000	0.5303	0.0573	0.0000	0.0573			0.0000			0.0000
Off-Road	4.3135	35.7705	24.7909	0.0400		2.3134	2.3134		2.2467	2.2467	0.0000	3,874.1390	3,874.1390	0.5593		3,885.8849
<b>Total</b>	<b>4.3135</b>	<b>35.7705</b>	<b>24.7909</b>	<b>0.0400</b>	<b>0.5303</b>	<b>2.3134</b>	<b>2.8437</b>	<b>0.0573</b>	<b>2.2467</b>	<b>2.3040</b>	<b>0.0000</b>	<b>3,874.1390</b>	<b>3,874.1390</b>	<b>0.5593</b>		<b>3,885.8849</b>

**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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0555	0.0745	0.7786	1.7300e-003	0.1453	1.2100e-003	0.1465	0.0385	1.1200e-003	0.0397		145.0430	145.0430	7.9300e-003		145.2096
<b>Total</b>	<b>0.0555</b>	<b>0.0745</b>	<b>0.7786</b>	<b>1.7300e-003</b>	<b>0.1453</b>	<b>1.2100e-003</b>	<b>0.1465</b>	<b>0.0385</b>	<b>1.1200e-003</b>	<b>0.0397</b>		<b>145.0430</b>	<b>145.0430</b>	<b>7.9300e-003</b>		<b>145.2096</b>

**4.0 Operational Detail - Mobile**

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**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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

**4.2 Trip Summary Information**

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Parking Lot	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

**4.3 Trip Type Information**

Land Use	Miles			Trip %			Trip Purpose %		
	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	Primary	Diverted	Pass-by
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.512163	0.060173	0.180257	0.139094	0.042244	0.006664	0.016017	0.031880	0.001940	0.002497	0.004356	0.000592	0.002122

**5.0 Energy Detail**

Historical Energy Use: N

**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	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

**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/yr	lb/day										lb/day					
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

**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/yr	lb/day										lb/day					
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

**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	0.3483	0.0000	4.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000		9.0000e-005	9.0000e-005	0.0000		9.0000e-005
Unmitigated	0.3483	0.0000	4.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000		9.0000e-005	9.0000e-005	0.0000		9.0000e-005

**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	3.3200e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.3450					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	0.0000	0.0000	4.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000		9.0000e-005	9.0000e-005	0.0000		9.0000e-005
<b>Total</b>	<b>0.3483</b>	<b>0.0000</b>	<b>4.0000e-005</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>9.0000e-005</b>	<b>9.0000e-005</b>	<b>0.0000</b>		<b>9.0000e-005</b>

**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					
Consumer Products	0.3450					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	0.0000	0.0000	4.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000		9.0000e-005	9.0000e-005	0.0000		9.0000e-005
Architectural Coating	3.3200e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
<b>Total</b>	<b>0.3483</b>	<b>0.0000</b>	<b>4.0000e-005</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>9.0000e-005</b>	<b>9.0000e-005</b>	<b>0.0000</b>		<b>9.0000e-005</b>

**7.0 Water Detail**

**7.1 Mitigation Measures Water**

**8.0 Waste Detail**

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**8.1 Mitigation Measures Waste**

**9.0 Operational Offroad**

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Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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**10.0 Vegetation**

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**New City Groundwater Wells**  
**South Coast AQMD Air District, Summer**

**1.0 Project Characteristics**

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**1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Parking Lot	0.40	Acre	0.40	17,424.00	0

**1.2 Other Project Characteristics**

<b>Urbanization</b>	Urban	<b>Wind Speed (m/s)</b>	2.2	<b>Precipitation Freq (Days)</b>	31
<b>Climate Zone</b>	11			<b>Operational Year</b>	2017
<b>Utility Company</b>	Southern California Edison				
<b>CO2 Intensity (lb/MWhr)</b>	630.89	<b>CH4 Intensity (lb/MWhr)</b>	0.029	<b>N2O Intensity (lb/MWhr)</b>	0.006

**1.3 User Entered Comments & Non-Default Data**

Project Characteristics -

Land Use -

Construction Phase - construction phases based on schedule prepared for the project

Off-road Equipment - Hours/day based on City's specific hours allowable for construction activities

Off-road Equipment - Based on equipment list provided for project construction

Grading -

Off-road Equipment - From equipment list provided for the project

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	1.00	60.00
tblConstructionPhase	NumDays	1.00	100.00
tblConstructionPhase	PhaseEndDate	4/29/2016	10/17/2016
tblConstructionPhase	PhaseStartDate	12/12/2015	5/31/2016
tblOffRoadEquipment	HorsePower	205.00	174.00
tblOffRoadEquipment	HorsePower	78.00	174.00
tblOffRoadEquipment	HorsePower	84.00	97.00
tblOffRoadEquipment	LoadFactor	0.50	0.41
tblOffRoadEquipment	LoadFactor	0.48	0.41
tblOffRoadEquipment	LoadFactor	0.74	0.37
tblOffRoadEquipment	OffRoadEquipmentType	Graders	Bore/Drill Rigs
tblOffRoadEquipment	OffRoadEquipmentType	Graders	Air Compressors
tblOffRoadEquipment	OffRoadEquipmentType	Tractors/Loaders/Backhoes	Generator Sets
tblOffRoadEquipment	OffRoadEquipmentType		Air Compressors
tblOffRoadEquipment	OffRoadEquipmentType		Generator Sets
tblOffRoadEquipment	OffRoadEquipmentType		Pumps
tblOffRoadEquipment	OffRoadEquipmentType		Pumps
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tblProjectCharacteristics	OperationalYear	2014	2017
tblTripsAndVMT	WorkerTripNumber	18.00	15.00
tblTripsAndVMT	WorkerTripNumber	15.00	13.00

**2.0 Emissions Summary**

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**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	0.3483	0.0000	4.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000		9.0000e-005	9.0000e-005	0.0000			9.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000		0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000			0.0000
<b>Total</b>	<b>0.3483</b>	<b>0.0000</b>	<b>4.0000e-005</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>9.0000e-005</b>	<b>9.0000e-005</b>	<b>0.0000</b>	<b>0.0000</b>		<b>9.0000e-005</b>

**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	0.3483	0.0000	4.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000		9.0000e-005	9.0000e-005	0.0000			9.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000		0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000			0.0000
<b>Total</b>	<b>0.3483</b>	<b>0.0000</b>	<b>4.0000e-005</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>9.0000e-005</b>	<b>9.0000e-005</b>	<b>0.0000</b>	<b>0.0000</b>		<b>9.0000e-005</b>

	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
Percent Reduction	0.00	0.00	0.00	0.00	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**

**Construction Phase**

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Drilling	Site Preparation	9/21/2015	12/11/2015	5	60	
2	Well Equipping	Site Preparation	5/31/2016	10/17/2016	5	100	

**Acres of Grading (Site Preparation Phase): 0**

**Acres of Grading (Grading Phase): 0**

**Acres of Paving: 0**

**Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)**

**OffRoad Equipment**

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Well Equipping	Air Compressors	1	10.00	174	0.41
Well Equipping	Generator Sets	1	10.00	97	0.37
Drilling	Air Compressors	1	10.00	78	0.48
Drilling	Bore/Drill Rigs	1	10.00	174	0.41
Drilling	Generator Sets	1	10.00	84	0.74
Drilling	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Drilling	Pumps	2	10.00	84	0.74
Well Equipping	Pumps	2	10.00	84	0.74
Well Equipping	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Drilling	Graders	1	8.00	174	0.41
Well Equipping	Graders	1	8.00	174	0.41

**Trips and VMT**

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Drilling	7	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Well Equipping	6	13.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

**3.1 Mitigation Measures Construction**

**3.2 Drilling - 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					0.5303	0.0000	0.5303	0.0573	0.0000	0.0573			0.0000			0.0000
Off-Road	5.3282	44.5306	29.8854	0.0467		2.9972	2.9972		2.9047	2.9047		4,603.4680	4,603.4680	0.8445		4,621.2031
<b>Total</b>	<b>5.3282</b>	<b>44.5306</b>	<b>29.8854</b>	<b>0.0467</b>	<b>0.5303</b>	<b>2.9972</b>	<b>3.5274</b>	<b>0.0573</b>	<b>2.9047</b>	<b>2.9620</b>		<b>4,603.4680</b>	<b>4,603.4680</b>	<b>0.8445</b>		<b>4,621.2031</b>

**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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0694	0.0869	1.0769	2.1300e-003	0.1677	1.4800e-003	0.1691	0.0445	1.3500e-003	0.0458		184.7848	184.7848	9.9500e-003		184.9937
<b>Total</b>	<b>0.0694</b>	<b>0.0869</b>	<b>1.0769</b>	<b>2.1300e-003</b>	<b>0.1677</b>	<b>1.4800e-003</b>	<b>0.1691</b>	<b>0.0445</b>	<b>1.3500e-003</b>	<b>0.0458</b>		<b>184.7848</b>	<b>184.7848</b>	<b>9.9500e-003</b>		<b>184.9937</b>

**3.2 Drilling - 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					0.5303	0.0000	0.5303	0.0573	0.0000	0.0573			0.0000			0.0000
Off-Road	5.3282	44.5306	29.8854	0.0467		2.9972	2.9972		2.9047	2.9047	0.0000	4,603.4680	4,603.4680	0.8445		4,621.2031
<b>Total</b>	<b>5.3282</b>	<b>44.5306</b>	<b>29.8854</b>	<b>0.0467</b>	<b>0.5303</b>	<b>2.9972</b>	<b>3.5274</b>	<b>0.0573</b>	<b>2.9047</b>	<b>2.9620</b>	<b>0.0000</b>	<b>4,603.4680</b>	<b>4,603.4680</b>	<b>0.8445</b>		<b>4,621.2031</b>

**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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0694	0.0869	1.0769	2.1300e-003	0.1677	1.4800e-003	0.1691	0.0445	1.3500e-003	0.0458		184.7848	184.7848	9.9500e-003		184.9937
<b>Total</b>	<b>0.0694</b>	<b>0.0869</b>	<b>1.0769</b>	<b>2.1300e-003</b>	<b>0.1677</b>	<b>1.4800e-003</b>	<b>0.1691</b>	<b>0.0445</b>	<b>1.3500e-003</b>	<b>0.0458</b>		<b>184.7848</b>	<b>184.7848</b>	<b>9.9500e-003</b>		<b>184.9937</b>

**3.3 Well Equipping - 2016**

**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					0.5303	0.0000	0.5303	0.0573	0.0000	0.0573			0.0000			0.0000
Off-Road	4.3135	35.7705	24.7909	0.0400		2.3134	2.3134		2.2467	2.2467		3,874.1390	3,874.1390	0.5593		3,885.8849
<b>Total</b>	<b>4.3135</b>	<b>35.7705</b>	<b>24.7909</b>	<b>0.0400</b>	<b>0.5303</b>	<b>2.3134</b>	<b>2.8437</b>	<b>0.0573</b>	<b>2.2467</b>	<b>2.3040</b>		<b>3,874.1390</b>	<b>3,874.1390</b>	<b>0.5593</b>		<b>3,885.8849</b>

**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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0543	0.0679	0.8450	1.8400e-003	0.1453	1.2100e-003	0.1465	0.0385	1.1200e-003	0.0397		154.6296	154.6296	7.9300e-003		154.7962
<b>Total</b>	<b>0.0543</b>	<b>0.0679</b>	<b>0.8450</b>	<b>1.8400e-003</b>	<b>0.1453</b>	<b>1.2100e-003</b>	<b>0.1465</b>	<b>0.0385</b>	<b>1.1200e-003</b>	<b>0.0397</b>		<b>154.6296</b>	<b>154.6296</b>	<b>7.9300e-003</b>		<b>154.7962</b>

**3.3 Well Equipping - 2016**

**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					0.5303	0.0000	0.5303	0.0573	0.0000	0.0573			0.0000			0.0000
Off-Road	4.3135	35.7705	24.7909	0.0400		2.3134	2.3134		2.2467	2.2467	0.0000	3,874.1390	3,874.1390	0.5593		3,885.8849
<b>Total</b>	<b>4.3135</b>	<b>35.7705</b>	<b>24.7909</b>	<b>0.0400</b>	<b>0.5303</b>	<b>2.3134</b>	<b>2.8437</b>	<b>0.0573</b>	<b>2.2467</b>	<b>2.3040</b>	<b>0.0000</b>	<b>3,874.1390</b>	<b>3,874.1390</b>	<b>0.5593</b>		<b>3,885.8849</b>

**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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0543	0.0679	0.8450	1.8400e-003	0.1453	1.2100e-003	0.1465	0.0385	1.1200e-003	0.0397		154.6296	154.6296	7.9300e-003		154.7962
<b>Total</b>	<b>0.0543</b>	<b>0.0679</b>	<b>0.8450</b>	<b>1.8400e-003</b>	<b>0.1453</b>	<b>1.2100e-003</b>	<b>0.1465</b>	<b>0.0385</b>	<b>1.1200e-003</b>	<b>0.0397</b>		<b>154.6296</b>	<b>154.6296</b>	<b>7.9300e-003</b>		<b>154.7962</b>

**4.0 Operational Detail - Mobile**

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**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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

**4.2 Trip Summary Information**

Land Use	Average Daily Trip Rate			Unmitigated Annual VMT	Mitigated Annual VMT
	Weekday	Saturday	Sunday		
Parking Lot	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

**4.3 Trip Type Information**

Land Use	Miles			Trip %			Trip Purpose %		
	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	Primary	Diverted	Pass-by
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.512163	0.060173	0.180257	0.139094	0.042244	0.006664	0.016017	0.031880	0.001940	0.002497	0.004356	0.000592	0.002122

**5.0 Energy Detail**

2.4 Fleet Mix  
 Historical Energy Use: N

**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	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

**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/yr	lb/day										lb/day					
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

**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/yr	lb/day										lb/day					
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

**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	0.3483	0.0000	4.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000		9.0000e-005	9.0000e-005	0.0000		9.0000e-005
Unmitigated	0.3483	0.0000	4.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000		9.0000e-005	9.0000e-005	0.0000		9.0000e-005

**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					
Consumer Products	0.3450					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	0.0000	0.0000	4.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000		9.0000e-005	9.0000e-005	0.0000		9.0000e-005
Architectural Coating	3.3200e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
<b>Total</b>	<b>0.3483</b>	<b>0.0000</b>	<b>4.0000e-005</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>9.0000e-005</b>	<b>9.0000e-005</b>	<b>0.0000</b>		<b>9.0000e-005</b>

**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					
Consumer Products	0.3450					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	0.0000	0.0000	4.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000		9.0000e-005	9.0000e-005	0.0000		9.0000e-005
Architectural Coating	3.3200e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
<b>Total</b>	<b>0.3483</b>	<b>0.0000</b>	<b>4.0000e-005</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>9.0000e-005</b>	<b>9.0000e-005</b>	<b>0.0000</b>		<b>9.0000e-005</b>

**7.0 Water Detail**

**7.1 Mitigation Measures Water**

**8.0 Waste Detail**

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**8.1 Mitigation Measures Waste**

**9.0 Operational Offroad**

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Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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**10.0 Vegetation**

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**New City Groundwater Wells  
South Coast AQMD Air District, Annual**

**1.0 Project Characteristics**

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**1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Parking Lot	0.40	Acre	0.40	17,424.00	0

**1.2 Other Project Characteristics**

<b>Urbanization</b>	Urban	<b>Wind Speed (m/s)</b>	2.2	<b>Precipitation Freq (Days)</b>	31
<b>Climate Zone</b>	11			<b>Operational Year</b>	2017
<b>Utility Company</b>	Southern California Edison				
<b>CO2 Intensity (lb/MWhr)</b>	630.89	<b>CH4 Intensity (lb/MWhr)</b>	0.029	<b>N2O Intensity (lb/MWhr)</b>	0.006

**1.3 User Entered Comments & Non-Default Data**

Project Characteristics -

Land Use -

Construction Phase - construction phases based on schedule prepared for the project

Off-road Equipment - Hours/day based on City's specific hours allowable for construction activities

Off-road Equipment - Based on equipment list provided for project construction

Grading -

Off-road Equipment - From equipment list provided for the project

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	1.00	60.00
tblConstructionPhase	NumDays	1.00	100.00
tblConstructionPhase	PhaseEndDate	4/29/2016	10/17/2016
tblConstructionPhase	PhaseStartDate	12/12/2015	5/31/2016
tblOffRoadEquipment	HorsePower	205.00	174.00
tblOffRoadEquipment	HorsePower	78.00	174.00
tblOffRoadEquipment	HorsePower	84.00	97.00
tblOffRoadEquipment	LoadFactor	0.50	0.41
tblOffRoadEquipment	LoadFactor	0.48	0.41
tblOffRoadEquipment	LoadFactor	0.74	0.37
tblOffRoadEquipment	OffRoadEquipmentType	Graders	Bore/Drill Rigs
tblOffRoadEquipment	OffRoadEquipmentType	Graders	Air Compressors
tblOffRoadEquipment	OffRoadEquipmentType	Tractors/Loaders/Backhoes	Generator Sets
tblOffRoadEquipment	OffRoadEquipmentType		Air Compressors
tblOffRoadEquipment	OffRoadEquipmentType		Generator Sets
tblOffRoadEquipment	OffRoadEquipmentType		Pumps
tblOffRoadEquipment	OffRoadEquipmentType		Pumps
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tblProjectCharacteristics	OperationalYear	2014	2017
tblTripsAndVMT	WorkerTripNumber	18.00	15.00
tblTripsAndVMT	WorkerTripNumber	15.00	13.00

**2.0 Emissions Summary**

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**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	0.0636	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0000e-005	1.0000e-005	0.0000	0.0000	1.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.3878	4.3878	2.0000e-004	4.0000e-005	4.4050
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>0.0636</b>	<b>0.0000</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>4.3878</b>	<b>4.3878</b>	<b>2.0000e-004</b>	<b>4.0000e-005</b>	<b>4.4050</b>

**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	0.0636	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0000e-005	1.0000e-005	0.0000	0.0000	1.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.3878	4.3878	2.0000e-004	4.0000e-005	4.4050
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>0.0636</b>	<b>0.0000</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>4.3878</b>	<b>4.3878</b>	<b>2.0000e-004</b>	<b>4.0000e-005</b>	<b>4.4050</b>

	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
<b>Percent Reduction</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

**3.0 Construction Detail**

**Construction Phase**

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Drilling	Site Preparation	9/21/2015	12/11/2015	5	60	
2	Well Equipping	Site Preparation	5/31/2016	10/17/2016	5	100	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

**OffRoad Equipment**

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Well Equipping	Air Compressors	1	10.00	174	0.41
Well Equipping	Generator Sets	1	10.00	97	0.37
Drilling	Air Compressors	1	10.00	78	0.48
Drilling	Bore/Drill Rigs	1	10.00	174	0.41
Drilling	Generator Sets	1	10.00	84	0.74
Drilling	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Drilling	Pumps	2	10.00	84	0.74
Well Equipping	Pumps	2	10.00	84	0.74
Well Equipping	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Drilling	Graders	1	8.00	174	0.41
Well Equipping	Graders	1	8.00	174	0.41

**Trips and VMT**

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Drilling	7	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Well Equipping	6	13.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

**3.1 Mitigation Measures Construction**

**3.2 Drilling - 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					0.0159	0.0000	0.0159	1.7200e-003	0.0000	1.7200e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1599	1.3359	0.8966	1.4000e-003		0.0899	0.0899		0.0871	0.0871	0.0000	125.2859	125.2859	0.0230	0.0000	125.7686
<b>Total</b>	<b>0.1599</b>	<b>1.3359</b>	<b>0.8966</b>	<b>1.4000e-003</b>	<b>0.0159</b>	<b>0.0899</b>	<b>0.1058</b>	<b>1.7200e-003</b>	<b>0.0871</b>	<b>0.0889</b>	<b>0.0000</b>	<b>125.2859</b>	<b>125.2859</b>	<b>0.0230</b>	<b>0.0000</b>	<b>125.7686</b>

**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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0100e-003	2.9500e-003	0.0306	6.0000e-005	4.9400e-003	4.0000e-005	4.9800e-003	1.3100e-003	4.0000e-005	1.3500e-003	0.0000	4.7910	4.7910	2.7000e-004	0.0000	4.7967
<b>Total</b>	<b>2.0100e-003</b>	<b>2.9500e-003</b>	<b>0.0306</b>	<b>6.0000e-005</b>	<b>4.9400e-003</b>	<b>4.0000e-005</b>	<b>4.9800e-003</b>	<b>1.3100e-003</b>	<b>4.0000e-005</b>	<b>1.3500e-003</b>	<b>0.0000</b>	<b>4.7910</b>	<b>4.7910</b>	<b>2.7000e-004</b>	<b>0.0000</b>	<b>4.7967</b>

**3.2 Drilling - 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					0.0159	0.0000	0.0159	1.7200e-003	0.0000	1.7200e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1599	1.3359	0.8966	1.4000e-003		0.0899	0.0899		0.0871	0.0871	0.0000	125.2857	125.2857	0.0230	0.0000	125.7684
<b>Total</b>	<b>0.1599</b>	<b>1.3359</b>	<b>0.8966</b>	<b>1.4000e-003</b>	<b>0.0159</b>	<b>0.0899</b>	<b>0.1058</b>	<b>1.7200e-003</b>	<b>0.0871</b>	<b>0.0889</b>	<b>0.0000</b>	<b>125.2857</b>	<b>125.2857</b>	<b>0.0230</b>	<b>0.0000</b>	<b>125.7684</b>

**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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0100e-003	2.9500e-003	0.0306	6.0000e-005	4.9400e-003	4.0000e-005	4.9800e-003	1.3100e-003	4.0000e-005	1.3500e-003	0.0000	4.7910	4.7910	2.7000e-004	0.0000	4.7967
<b>Total</b>	<b>2.0100e-003</b>	<b>2.9500e-003</b>	<b>0.0306</b>	<b>6.0000e-005</b>	<b>4.9400e-003</b>	<b>4.0000e-005</b>	<b>4.9800e-003</b>	<b>1.3100e-003</b>	<b>4.0000e-005</b>	<b>1.3500e-003</b>	<b>0.0000</b>	<b>4.7910</b>	<b>4.7910</b>	<b>2.7000e-004</b>	<b>0.0000</b>	<b>4.7967</b>

**3.3 Well Equipping - 2016**

**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					0.0265	0.0000	0.0265	2.8600e-003	0.0000	2.8600e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2157	1.7885	1.2396	2.0000e-003		0.1157	0.1157		0.1123	0.1123	0.0000	175.7280	175.7280	0.0254	0.0000	176.2608
<b>Total</b>	<b>0.2157</b>	<b>1.7885</b>	<b>1.2396</b>	<b>2.0000e-003</b>	<b>0.0265</b>	<b>0.1157</b>	<b>0.1422</b>	<b>2.8600e-003</b>	<b>0.1123</b>	<b>0.1152</b>	<b>0.0000</b>	<b>175.7280</b>	<b>175.7280</b>	<b>0.0254</b>	<b>0.0000</b>	<b>176.2608</b>

**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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.6100e-003	3.8400e-003	0.0399	9.0000e-005	7.1300e-003	6.0000e-005	7.1900e-003	1.8900e-003	6.0000e-005	1.9500e-003	0.0000	6.6812	6.6812	3.6000e-004	0.0000	6.6887
<b>Total</b>	<b>2.6100e-003</b>	<b>3.8400e-003</b>	<b>0.0399</b>	<b>9.0000e-005</b>	<b>7.1300e-003</b>	<b>6.0000e-005</b>	<b>7.1900e-003</b>	<b>1.8900e-003</b>	<b>6.0000e-005</b>	<b>1.9500e-003</b>	<b>0.0000</b>	<b>6.6812</b>	<b>6.6812</b>	<b>3.6000e-004</b>	<b>0.0000</b>	<b>6.6887</b>

**3.3 Well Equipping - 2016**

**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					0.0265	0.0000	0.0265	2.8600e-003	0.0000	2.8600e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2157	1.7885	1.2395	2.0000e-003		0.1157	0.1157		0.1123	0.1123	0.0000	175.7278	175.7278	0.0254	0.0000	176.2606
<b>Total</b>	<b>0.2157</b>	<b>1.7885</b>	<b>1.2395</b>	<b>2.0000e-003</b>	<b>0.0265</b>	<b>0.1157</b>	<b>0.1422</b>	<b>2.8600e-003</b>	<b>0.1123</b>	<b>0.1152</b>	<b>0.0000</b>	<b>175.7278</b>	<b>175.7278</b>	<b>0.0254</b>	<b>0.0000</b>	<b>176.2606</b>

**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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.6100e-003	3.8400e-003	0.0399	9.0000e-005	7.1300e-003	6.0000e-005	7.1900e-003	1.8900e-003	6.0000e-005	1.9500e-003	0.0000	6.6812	6.6812	3.6000e-004	0.0000	6.6887
<b>Total</b>	<b>2.6100e-003</b>	<b>3.8400e-003</b>	<b>0.0399</b>	<b>9.0000e-005</b>	<b>7.1300e-003</b>	<b>6.0000e-005</b>	<b>7.1900e-003</b>	<b>1.8900e-003</b>	<b>6.0000e-005</b>	<b>1.9500e-003</b>	<b>0.0000</b>	<b>6.6812</b>	<b>6.6812</b>	<b>3.6000e-004</b>	<b>0.0000</b>	<b>6.6887</b>

**4.0 Operational Detail - Mobile**

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**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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

**4.2 Trip Summary Information**

Land Use	Average Daily Trip Rate			Unmitigated Annual VMT	Mitigated Annual VMT
	Weekday	Saturday	Sunday		
Parking Lot	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

**4.3 Trip Type Information**

Land Use	Miles			Trip %			Trip Purpose %		
	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	Primary	Diverted	Pass-by
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.512163	0.060173	0.180257	0.139094	0.042244	0.006664	0.016017	0.031880	0.001940	0.002497	0.004356	0.000592	0.002122

**5.0 Energy Detail**

Historical Energy Use: N



**5.2 Energy by Land Use - Natural Gas**

**Mitigated**

	Natural Gas 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/yr	tons/yr										MT/yr						
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>								

**5.3 Energy by Land Use - Electricity**

**Unmitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Parking Lot	15333.1	4.3878	2.0000e-004	4.0000e-005	4.4050
<b>Total</b>		<b>4.3878</b>	<b>2.0000e-004</b>	<b>4.0000e-005</b>	<b>4.4050</b>

**5.3 Energy by Land Use - Electricity**

**Mitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Parking Lot	15333.1	4.3878	2.0000e-004	4.0000e-005	4.4050
<b>Total</b>		<b>4.3878</b>	<b>2.0000e-004</b>	<b>4.0000e-005</b>	<b>4.4050</b>

**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	0.0636	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0000e-005	1.0000e-005	0.0000	0.0000	1.0000e-005
Unmitigated	0.0636	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0000e-005	1.0000e-005	0.0000	0.0000	1.0000e-005

**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	6.1000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0630					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0000e-005	1.0000e-005	0.0000	0.0000	0.0000	1.0000e-005
<b>Total</b>	<b>0.0636</b>	<b>0.0000</b>	<b>1.0000e-005</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>1.0000e-005</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>1.0000e-005</b>

**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						
Consumer Products	0.0630					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0000e-005	1.0000e-005	0.0000	0.0000	0.0000	1.0000e-005
Architectural Coating	6.1000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>0.0636</b>	<b>0.0000</b>	<b>1.0000e-005</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>1.0000e-005</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>1.0000e-005</b>

**7.0 Water Detail**

**7.1 Mitigation Measures Water**

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

**7.2 Water by Land Use**

**Unmitigated**

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

**7.2 Water by Land Use**

**Mitigated**

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

**8.0 Waste Detail**

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**8.1 Mitigation Measures Waste**

**Category/Year**

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

**8.2 Waste by Land Use**

**Unmitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

**Mitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

**9.0 Operational Offroad**

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Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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## 10.0 Vegetation

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