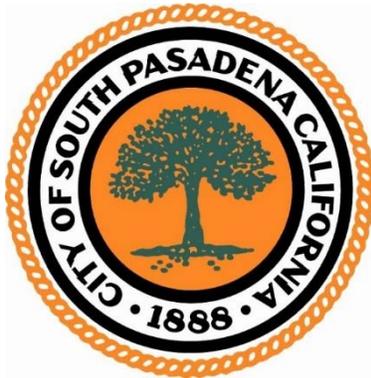


# GRAVES RESERVOIR REPLACEMENT PROJECT

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## INITIAL ENVIRONMENTAL STUDY AND PROPOSED MITIGATED NEGATIVE DECLARATION



### CITY OF SOUTH PASADENA

CITY HALL  
1414 MISSION STREET  
SOUTH PASADENA, CA 91030-3298

*PREPARED BY:*

**MWH Americas, Inc.**  
300 NORTH LAKE AVE., SUITE 400  
PASADENA, CA 91101

March 2016



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# Section 1

## Project and Agency Information

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### 1.1 PROJECT TITLE AND LEAD AGENCY

<b>Project Title:</b>	Graves Reservoir Replacement Project
<b>Lead Agency Name:</b>	City of South Pasadena, Public Works Department
<b>Lead Agency Address:</b>	1414 Mission Street South Pasadena, California 91030
<b>Contact Person:</b>	Mr. John Wolitarsky
<b>Contact Phone Number:</b>	(626) 403-7383
<b>Project Sponsor's Name:</b>	Same as Lead Agency
<b>Project Sponsor's Address:</b>	Same as Lead Agency
<b>General Plan Land Use Designation:</b>	City of San Marino, Low Density Residential (0-6 dwelling units/acre)
<b>Zoning:</b>	R-1

### 1.2 BACKGROUND AND OBJECTIVES

The City of South Pasadena, Public Works Department (the City) has prepared this Initial Study (IS) and Proposed Mitigated Negative Declaration to address the impacts of construction and operation of Graves Reservoir (proposed project). The IS serves to identify the site-specific environmental impacts, evaluate their potential significance, and determine the appropriate document needed to comply with the California Environmental Quality Act (CEQA).

#### 1.2.1 Project Background

The Graves Reservoir, owned and operated by the City of South Pasadena, is located at 2225 El Molino Avenue in the City of San Marino. Built in approximately the 1920s, the reservoir is constructed on a concrete floor and is covered with a wood-framed roof. Water comes from an onsite groundwater well (Well No. 2). Two submersible pumps and a small water chlorination system are also located on the reservoir site. Treated water is pumped from the Graves Reservoir into the potable water distribution system at the intersection of El Molino Avenue and Pasqualito Drive right outside the reservoir site.

In recent years, the roof of the 90-year-old reservoir has begun to deteriorate and sag in several areas. An inspection of the roof was performed and it was concluded that a severe roof collapse could occur at any time. Because of its age, the reservoir does not meet current earthquake

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resistance code standards. For these reasons, based on the inspection of the reservoir, a complete replacement of the existing Graves Reservoir was recommended.

### 1.2.2 Project Objective

The objective of the proposed project is to remove the existing Graves Reservoir, pumps, and support facilities and replace the existing structures with a new cast-in-place concrete reservoir, attached pump station and support facilities.

## 1.3 PROJECT LOCATION AND SETTING

### 1.3.1 Project Location

The Graves Reservoir project site is located in the City of San Marino, Los Angeles County, at the southwest corner of Pasqualito Drive and El Molino Avenue. The reservoir is located in San Marino, and not South Pasadena, since the city of South Pasadena owns the well and the reservoir property. Coordinates for the approximate center of the project site are Latitude 34.110120 degrees N, Longitude -118.131350 degrees W, (**Figure 1** and **Figure 2**). In addition to the reservoir and pump station, the project includes a discharge pipe to the existing distribution system at the intersection of Pasqualito Drive and El Molino Avenue (**Figure 3**).

### 1.3.2 Regional Setting and Surrounding Land Uses

The project site is located south of the San Gabriel Mountains in an urbanized area of the Los Angeles County, in the City of San Marino. The proposed water reservoir would be located on the same site as the existing reservoir to be demolished. The site is adjacent to single family residential properties. Access to the area is provided by Interstate 10 (I-10, Christopher Columbus Transcontinental Highway), State Highway 110 (SR-110, Arroyo Seco Parkway) and Interstate 210 (I-210, Foothill Freeway). Major roadways to the project site include Huntington Drive, Garfield Avenue and Atlantic Boulevard.

## 1.4 PROJECT DESCRIPTION

The proposed project would include demolition of the existing approximately one (1.0) million gallon (MG) concrete and wood reservoir, two submersible pumps, valve and meter boxes, electrical building, and construction of a new approximately 1.2 MG reservoir at the site with support facilities, including an attached pump station. The reservoir would be constructed of cast in place concrete, with a floor elevation of 559 feet above mean sea level (MSL), and an overflow elevation of 571 feet above MSL. The reservoir would be partially buried with the top of deck at the same elevation as the existing reservoir. The key components of the project are:

- Demolish and remove the existing reservoir, electrical building, and related structures;

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- Construct a 1.2 MG partially buried reservoir that is the same height as the existing reservoir;
- Construct new sound-attenuated pump house attached to the new reservoir;
- Install a new wellhead treatment system;
- Provide onsite generation of sodium hypochlorite (same as existing unit);
- Import approximately 2,480 cubic yards (cy) of fill for construction-related activities; and
- Export offsite approximately 6,289 cubic yards (cy) of waste material generated from demolition of the existing structures.

Photos of the existing site are presented in **Figure 4** through **Figure 7**. Preliminary plans for the new replacement reservoir and adjacent structures and improvements are presented in **Figure 8** through **Figure 11**.

### Proposed Replacement Reservoir

The proposed replacement reservoir would be a 1.2 MG, rectangular, 120-foot by 120-foot, concrete tank constructed at the site at the same location as the existing reservoir. The replacement reservoir would have a height of approximately 16 feet (measured from floor to top of the roof), and constructed of cast-in-place concrete. The foundation/floor would have a finished floor elevation of 559 feet above MSL. The existing grade of the site is approximately 562 feet above MSL. On three sides of the reservoir, earth backfill would be placed to elevation 569 above MSL. The south side of the reservoir would match the existing grade. The roof of the proposed reservoir would be cast-in-place concrete slab with concrete columns spaced at 20-feet on center in each direction.

At its highest point, the proposed reservoir would be 575-feet above MSL, which would occur in the center of the structure atop the roof. For comparison, the top of the proposed reservoir would be the same elevation as the existing reservoir roof (approximately 575 feet above MSL).

Access to the reservoir site access would be the same as existing - via a driveway located on the south side of the site. The existing wrought iron fencing surrounding the reservoir along the west and north sides would be replaced with new wrought iron fencing. The existing fence along the south and east sides would remain in place. Access to the reservoir roof would be via a metal or concrete stairway located near the driveway and on the south side of the reservoir. Finished grade of the access pathways surrounding the reservoir would be at approximately 565 feet above MSL.

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### Pump Station

A new approximately 450 square foot (ft<sup>2</sup>) attached booster pump station is proposed for the project. The new pump station would be located at the south end of the reservoir site near the driveway access. The new pump station would perform the same function as the existing submersible pumps, which is to pump water from Graves Reservoir to the existing distribution system at the corner of El Molino Avenue and Pasqualito Drive adjacent to the project site. The proposed pump station would be located adjacent to the reservoir and would consist of a two level structure with the lower level being the pump room, and upper level the electrical and chemical feed room. The pump station would be sized for two, 1,400 gallon per minute (gpm), 100 horsepower (hp), 210 ft TDH (Total Dynamic Head) pumps and associated piping, valving, accessories and electrical/control equipment, as well as a chlorination area. The pump station would be accessible from ground level.

### Chlorination Facility

A new chlorination system (Chlortech or similar system) would be housed within the pump station upper level. The chlorination system would provide initial chlorine residual in the reservoir at prescribed levels for public health. The facility would generate sodium hypochlorite from a brine solution made with salt and water. Sodium hypochlorite would be generated at a solution strength of 0.8 percent. Sodium hypochlorite strength of less than 1.0 percent is not classified as a hazardous material. By comparison, household bleach has a solution strength of approximately 5 to 6 percent. The need for transporting hazardous bulk chlorine to the site would be eliminated as the proposed chlorine system uses only ordinary salt (sodium chloride), water, and electricity to generate sodium hypochlorite.

### Other Onsite Facilities

Additional new facilities on the site would include:

**Electrical Room:** An electrical room located at the upper level of the new pump station would be approximately 30-feet by 15-feet. Access to the electrical room would be from the south side by the driveway and at grade level.

**Water Treatment Facility:** Based on water quality analyses, the groundwater pumped from Well No. 2 contains tetrachloroethylene (PCE) at concentrations above the drinking water standards, or maximum contaminant levels (MCLs). The City is currently blending water from up to three other sources such that the blended water quality meets the applicable MCLs. **Table 1** summarizes the water quality for Well No. 2 including levels of nitrate (NO<sub>3</sub>), PCE, and perchlorate (ClO<sub>4</sub>), along with the allowable MCLs for each contaminant.

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**Table 1**  
**Well No. 2 Water Quality**

Contaminant	NO <sub>3</sub> (mg/L)	PCE (µg/L)	CLO <sub>4</sub> (µg/L)
2013 Annual Average	46.5	6.3	5.3
Allowable MCL's	45.0	5	6
Above/Below MCL	+1.5	+1.3	-0.7
% of MCL (Exceedance)	3%	26%	-12%

The exceedance level for the PCE is the highest. The wellhead treatment system would consist of Granular Activated Carbon (GAC), Ion Exchange (IX), and chlorination. The GAC would treat the PCE and IX would treat NO<sub>3</sub> and CLO<sub>4</sub>. With the proposed project, water quality would be improved and blending would no longer be required.

### 1.4.1 Construction

The construction period is estimated at 18 months, with the following phasing:

- Site Preparation – 1 Month
- Demolition and Excavation – 4 Months
- Construction of New Facilities – 12 Months
- Startup and Commissioning – 1 Month

### 1.5 MITIGATION MEASURES

Environmental impacts related to construction and operation of the proposed project are described in Section 2 of the Initial Study. Mitigation measures to reduce project-related impacts to less than significant levels are described in Section 2, and summarized below:

#### Air Quality

**AQ-1 Site Watering.** Disturbed areas of the project site shall be watered three times per day during the demolition, excavation, grading and site preparation phases of project construction.

#### Biological Resources

**Bio-1 Nesting Birds.** For all construction-related activities that take place within the nesting season (February 1 through August 31), a preconstruction nesting-bird survey shall be conducted no more than 14 days prior to project initiation within the project area and a 300-foot buffer, 500-foot for raptors. If active nests are found for species subject to the

## Section 1 – Project and Agency Information

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MBTA, a no-disturbance buffer zone shall be established according to the biologist's assessment of the species' sensitivity to disturbance, generally 300 feet for smaller birds and 500 feet for raptors. Within this buffer zone, no construction shall take place until August 31, until the biologist determines that the nest is no longer active, or unless an alternative method of avoiding nest disturbance is prepared by the biologist and approved by the relevant resource agencies.

### Cultural Resources

**CR-1 Unexpected Cultural Discoveries.** If during excavation or earth moving activities within the project site the construction contractor identifies potential historic or archaeological resources, all excavation and/or grading within 10 feet of the discovery area shall be halted immediately and work redirected until a qualified archaeologist has evaluated the nature and significance of the find.

The archaeologist shall determine whether the resource is a “unique archaeological resource” pursuant to Section 21083.2(g) of the *California Public Resources Code* (PRC) or a “historical resource” pursuant to Section 15064.5(a) of the State CEQA Guidelines (14 *California CCR*). If the archaeological resource is determined to be a “unique archaeological resource” or a “historical resource”, the Archaeologist shall formulate a mitigation plan in consultation with the Lead Agency that satisfies the requirements of the above-listed Sections and that reduces the adverse effects of the project to a less than significant level. If the Archaeologist determines that the archaeological resource is not a “unique archaeological resource” or “historical resource”, s/he need only record the site and submit the recordation form to the SCCIC.

If archaeological resources are found to be significant, the Archaeologist shall determine appropriate actions, in cooperation with the Lead Agency and Contractor, for exploration and/or salvage. These actions, as well as final mitigation and disposition of the resources, shall be subject to the approval of the Lead Agency.

The Archaeologist shall then prepare a final technical report, following the guidelines of the California Office of Historic Preservation, which includes the monitoring results and any evaluation of resources. Copies of the report shall be submitted to the Lead Agency and to the CHRIS-SCCIC. If prehistoric resources are identified, then a Native American monitor shall be invited to observe ground-disturbing activities.

**CR-2 Unexpected Paleontological Discoveries.** If any paleontological materials are encountered during ground disturbing activities, all excavation and/or grading within 10 feet of the discovery area shall be halted immediately and work redirected until a paleontologist has evaluated the nature and significance of the find.

**CR-3 Human Remains.** In the unexpected event that human remains are encountered during excavation activities, all work shall halt and the County Coroner shall be notified (California Public Resources Code §5097.98). The Coroner shall determine whether the remains are of forensic interest. If the Coroner, with the aid of the project Archaeologist,

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determines that the remains are prehistoric, s/he will contact the NAHC. The NAHC will be responsible for designating the Most Likely Descendant (MLD), who will be responsible for the ultimate disposition of the remains, as required by Section 7050.5 of the California Health and Safety Code. The MLD shall make his/her recommendation within 48 hours of being granted access to the site. The recommendation of the MLD shall be followed if feasible, and may include scientific removal and non-destructive analysis. If the landowner rejects the recommendations of the MLD, the landowner shall rebury the remains with appropriate dignity on the property in a location that will not be subject to further subsurface disturbance (California Public Resources Code §5097.98).

### Hazards and Hazardous Materials

**HM-1 Asbestos Containing Materials.** Because ACM would be disturbed as a result of the demolition of the existing reservoir and associated facilities, the following measures shall be implemented:

- ACM shall be removed and disposed prior to demolition using a licensed abatement contractor in accordance with Federal, State, and local regulations and ordinances.
- Bid documents and specifications shall be prepared for the demolition/construction project to ensure lawful removal techniques are used.
- A third party shall provide demolition oversight to document that the contractor complies with the specifications, proper protective equipment is used, and proper disposal procedures are followed.

In addition to the measures above, the following precautions shall be taken prior to any repair or maintenance activities involving less than 100 square feet of ACM:

- Materials containing asbestos shall not be cut, sanded, or drilled.
- Prior to initiating demolition activities that would disturb the ACM, the area shall be thoroughly wet to prevent possible release into the air.
- ACM dust shall be removed with a high-efficiency particulate air (HEPA) vacuum or wet wiped with disposable towels.

**HM-2 Lead Based Paint.** The following measures shall be implemented to prevent the release of LBP:

- The LBP on the interior or exterior of the buildings that is in good condition does not need to be abated prior to demolition. However, any flaking or peeling LBP shall be removed by a licensed lead abatement contractor and waste shall be disposed as required by Federal, State, and local regulations. LBP may be disposed as construction debris as long as it remains on the substrate.

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- The demolition contractor shall implement precautions to comply with OSHA 29 CFR 1926.62, Lead in Construction.

The following precautions shall be taken prior to any demolition activities that would disturb LBP.

- Materials containing LBP shall not be cut, sanded or drilled.
- Prior to initiating demolition activities that would disturb LBP, the area shall be wet to prevent possible release into the air.
- Dust shall be removed with a HEPA vacuum or wet wiped with disposable towels.

### Noise

**NOI-1 Noise Mitigation Plan.** Prior to the start of construction of the proposed reservoir, the construction contractor shall develop a noise mitigation plan based on an updated estimate of construction equipment and schedule. The objective of the mitigation plan shall be to reduce interior noise levels during project construction to within acceptable limits as outlined in the City of San Marino municipal code. The mitigation plans shall detail measures to limit construction noise, including:

- Equip all construction equipment, fixed and mobile, with properly operating and maintained noise mufflers and intake silencers, consistent with manufacturers' standards.
- Place all stationary construction equipment as far as feasible from near-site residential receptors and situate them so that emitted noise is directed away from off-site sensitive receptors.
- Install temporary sound walls or acoustic blankets with a height as required to meet required noise standards and to reduce the residents' view of the construction effort. The surface of the sound walls or acoustic blankets shall present a solid face from top to bottom without any openings or cutouts.
- Consider quieter construction procedures and/or equipment.

**NOI-2 Control of Construction Hours.** Construction activities shall only be permitted to take place between the hours of 7 a.m. and 6 p.m. on Monday through Friday, and 9 a.m. and 4 p.m. on Saturday, except with the express written permission of the Administrative Authority of the City of San Marino, or in case of emergency.

**NOI-3 Hours of Concrete Pouring.** If concrete pouring cannot be completed during normally allowable construction hours (between 7 a.m. and 6 p.m. Monday-Friday and 9 a.m. and 4 p.m. on Saturday), expressed written permission from the City of San Marino Community Development Director shall be required to extend allowable construction hours. In addition, during concrete pours, construction equipment, specifically concrete mixers, shall be located towards the center of the project site, and as far from the surrounding homes as possible to the satisfaction of the City of South Pasadena Public Works Director.

## Section 1 – Project and Agency Information

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**NOI-4 Equipment Mufflers.** During all phases of construction, the project contractor shall equip applicable construction equipment with properly operating and maintained mufflers consistent with manufacturers' standards.

**NOI-5 Pump Station Building.** The pump station building shall provide sufficient inside-to-outside building attenuation to reduce the noise to acceptable levels. This shall be achieved through a combination of concrete walls and roof, acoustic louvers, hollow metal doors, and any other noise reduction characteristics as required to meet the noise ordinance.

### Transportation and Traffic

**TR-1 Construction Management Plan.** The City of South Pasadena shall require the contractor to prepare and implement a Construction Management Plan to the satisfaction of the City of South Pasadena and the City of San Marino. Specifically, the intent of this plan is to minimize disturbance to the neighborhood, identify those activities to be monitored, and make the contractor responsible for failure to adhere to the requirements. The elements of the Construction Management Plan shall include (but not be limited to) the following:

- Require contractor to obtain all necessary hauling, traffic control and/or transportation permits.
- Require contractor to maintain a 24-hour hotline for complaints and questions from the public.
- Designate a construction haul route.
- Require any large vehicles not classified as passenger vehicles or light trucks to use the haul route.
- Limit hauling to a maximum allowable trips per day as designated per City requirements.
- Allow hauling and deliveries between 8 a.m. and 4 p.m. on weekdays only and no city holidays, unless otherwise authorized by an approved revision to the Construction Management Plan.
- Require all public streets and driveways to remain open at all times, or submit a traffic control plan for any temporary lane closures to be approved by respective cities.
- Prohibit obstruction of street traffic, sidewalks or access to adjacent residences at any time.
- Require loading of all exported materials and earthwork to be conducted onsite unless authorized by an approved revision to the Construction Management Plan.
- Require removal of any delivered materials and delivery trucks from streets immediately upon delivery.
- Require contractor to notify hauling and delivery companies of construction haul route prior to such activities.
- Require notification to neighbors along haul route prior to the start of any large hauling operation or any construction activities outside of designated hours, as well as notification to residential properties located within 300 feet of any

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construction activities that occur outside of normal business hours or generate significant or sustained noise.

- Require notification to the San Marino Unified School District, local police and public works departments prior to start of construction, prior to any lane closures, and prior to any hauling or deliveries outside of designated hours.
- Prohibit staging or queuing of trucks on any residential streets except directly in front of project site (radio-dispatch and/or approved remote staging locations may be used to accomplish this requirement). At no time shall construction vehicles, materials or equipment obstruct residential driveways.
- Require contractor to provide an off-street parking area for construction workers of not less than 10 spaces, unless otherwise approved. If a remote parking area is used, require contractor to provide personnel transportation service for workers to/from the project site. Any remote parking area shall be approved by the cities of South Pasadena and San Marino.
- Require construction vehicles to fully utilize off-street parking prior to using street parking.
- With City of San Marino approval, certain on-street parking areas may be designated for project related vehicles. Require the contractor to post appropriate temporary parking signs to designate any approved street parking area or prohibitions near the construction site.
- Encourage contractors and construction workers to carpool to the construction site.
- Specify penalties for failure to comply with Construction Management Plan.
- Provide for monitoring and enforcement of the Construction Management Plan to the satisfaction of the cities of South Pasadena and San Marino.
- The location of any construction trailers shall be subject to the approval of the cities of South Pasadena and San Marino.
- Provide for revisions to the Construction Management Plan upon approval by both cities.

**TR-2 Construction Haul Route.** All construction-related vehicle trips shall utilized the preferred construction haul route to the project site with the outbound route to be the opposite as approved by the applicable regulating authorities. **Figure 12** depicts the preliminary construction haul route.

### 1.6 PUBLIC AGENCY REVIEW AND/OR APPROVAL

The proposed project involves the following approvals:

- City of South Pasadena, City Council – Approval of the project and execution of a contract for construction
- City of San Marino - Design Review and Approval of the project; encroachment permits, as applicable

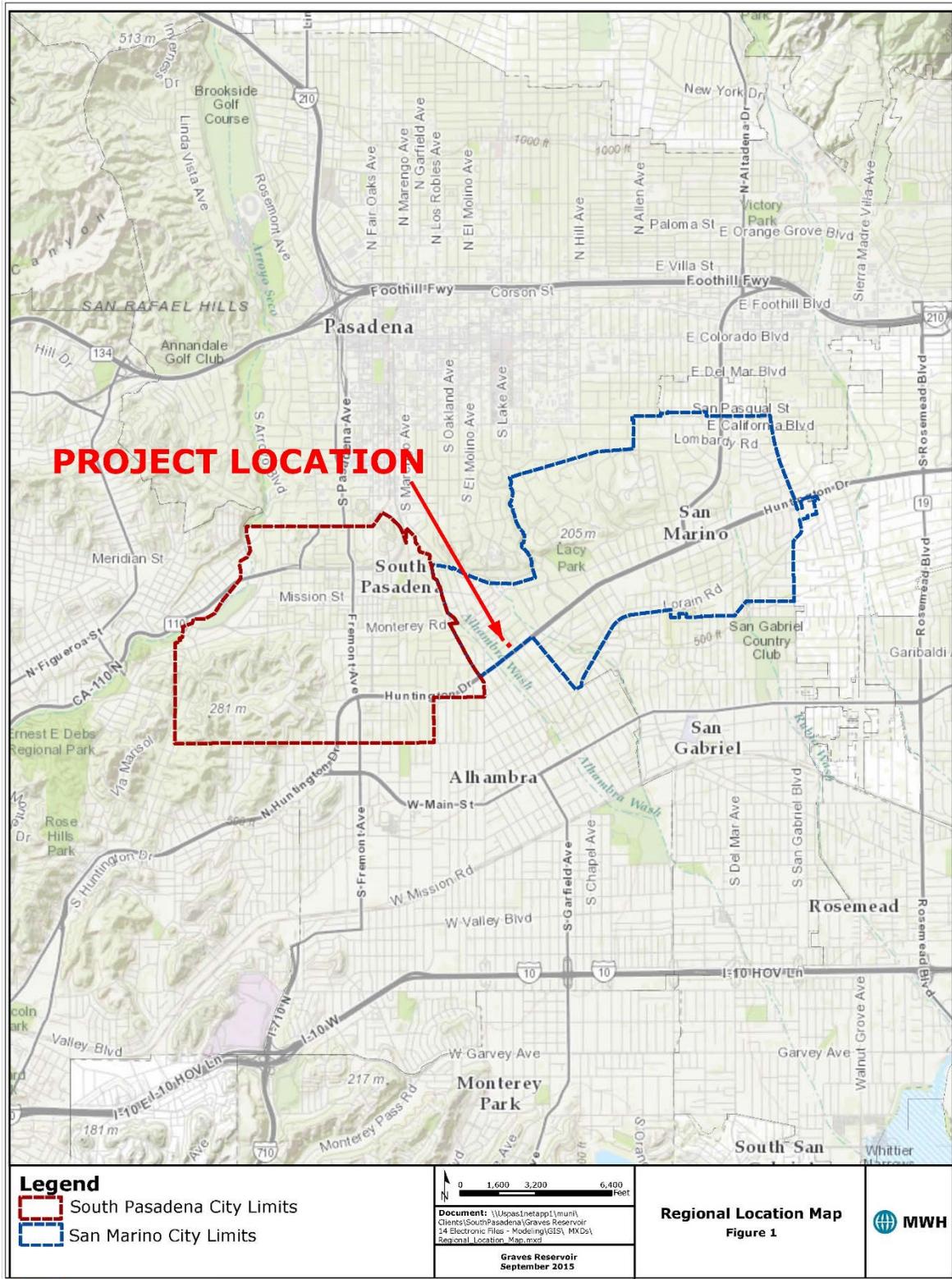
## Section 1 – Project and Agency Information

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- California Department of Transportation, District 7 - Permits for transportation of heavy construction equipment and materials that require the use of oversized-transport vehicles on State highways
- South Coast Air Quality Management District - Compliance with Rule 403 (dust control) during construction activities; Standby Generator permit, as applicable
- State Water Resources Control Board – Amendment to water supply permit; Construction General Permit for storm water runoff

# Section 1 – Project and Agency Information

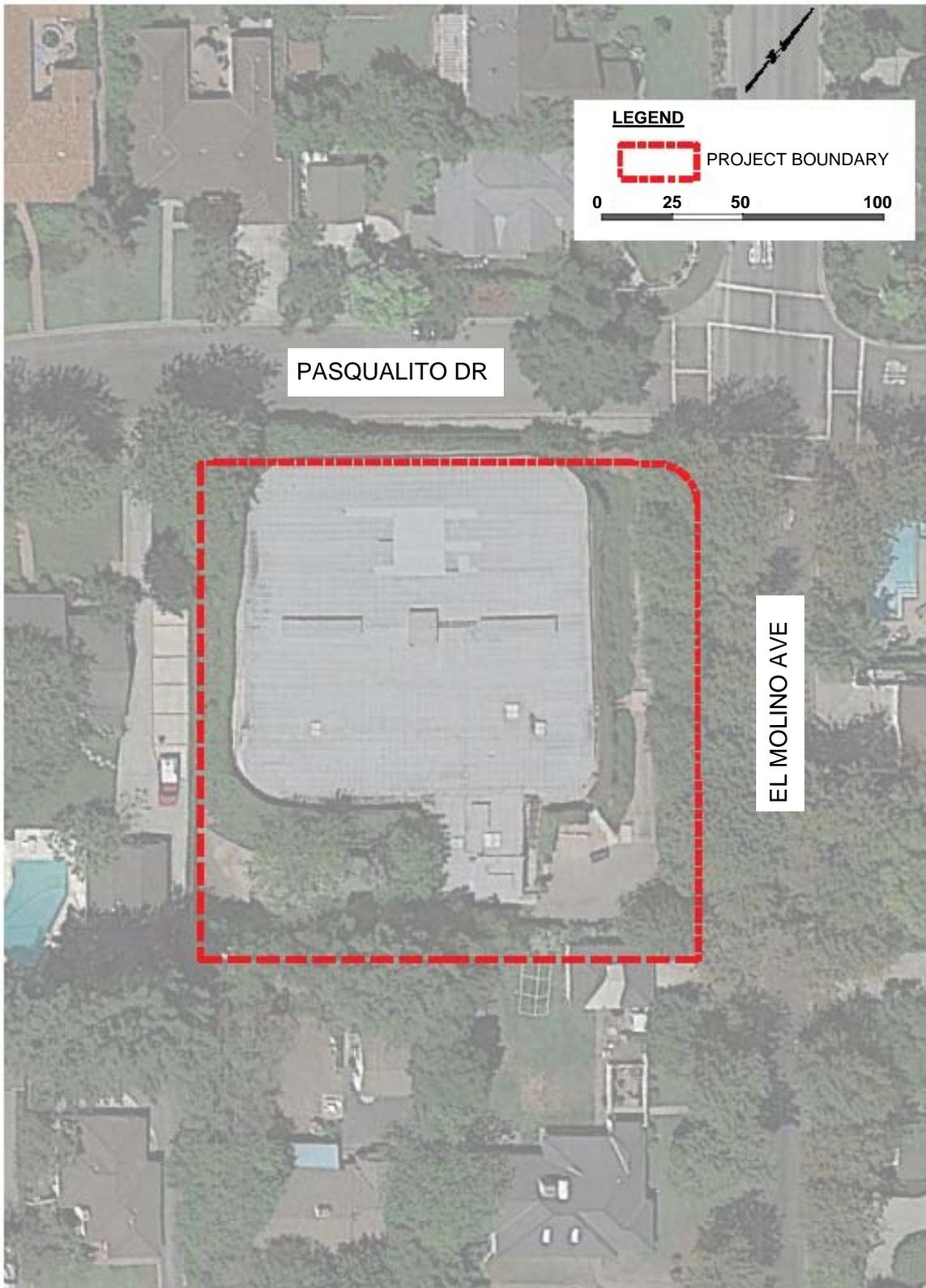
## Figure 1 Project Vicinity Map



**Figure 2  
Project Location Map**



**Figure 3  
Project Boundary Map**



## Section 1 – Project and Agency Information

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**Figure 4**  
**Site Photo - From El Molino Avenue**



**Figure 5**  
**Site Photo - Reservoir Roof**



## Section 1 – Project and Agency Information

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**Figure 6**  
**Site Photo - East Side of Reservoir Facing North**



**Figure 7**  
**Site Photo – Near Site Entrance**



Figure 8 Graves Reservoir Site Plan

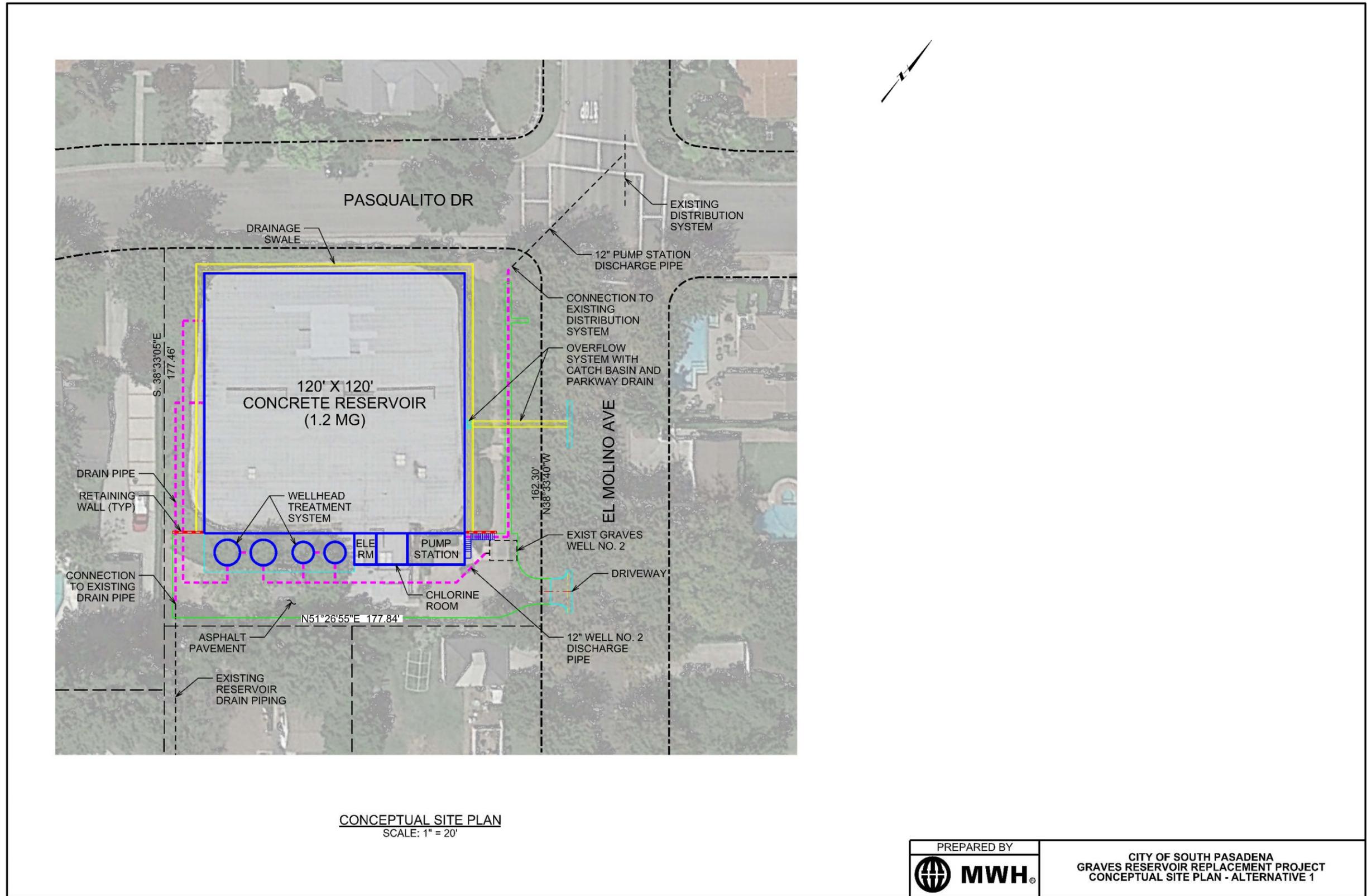


Figure 9 Reservoir Foundation Plan

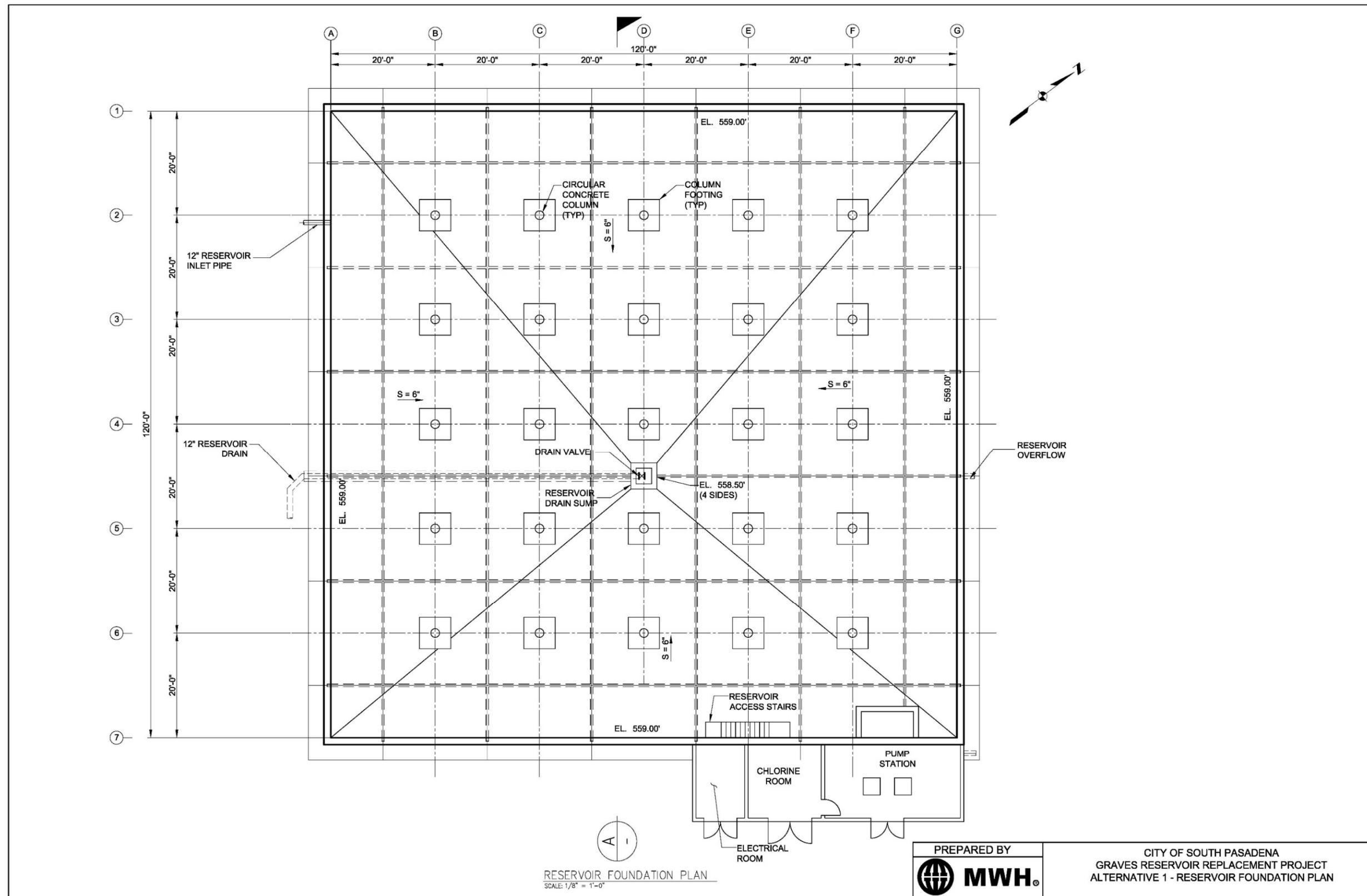


Figure 10 Reservoir Roof Plan

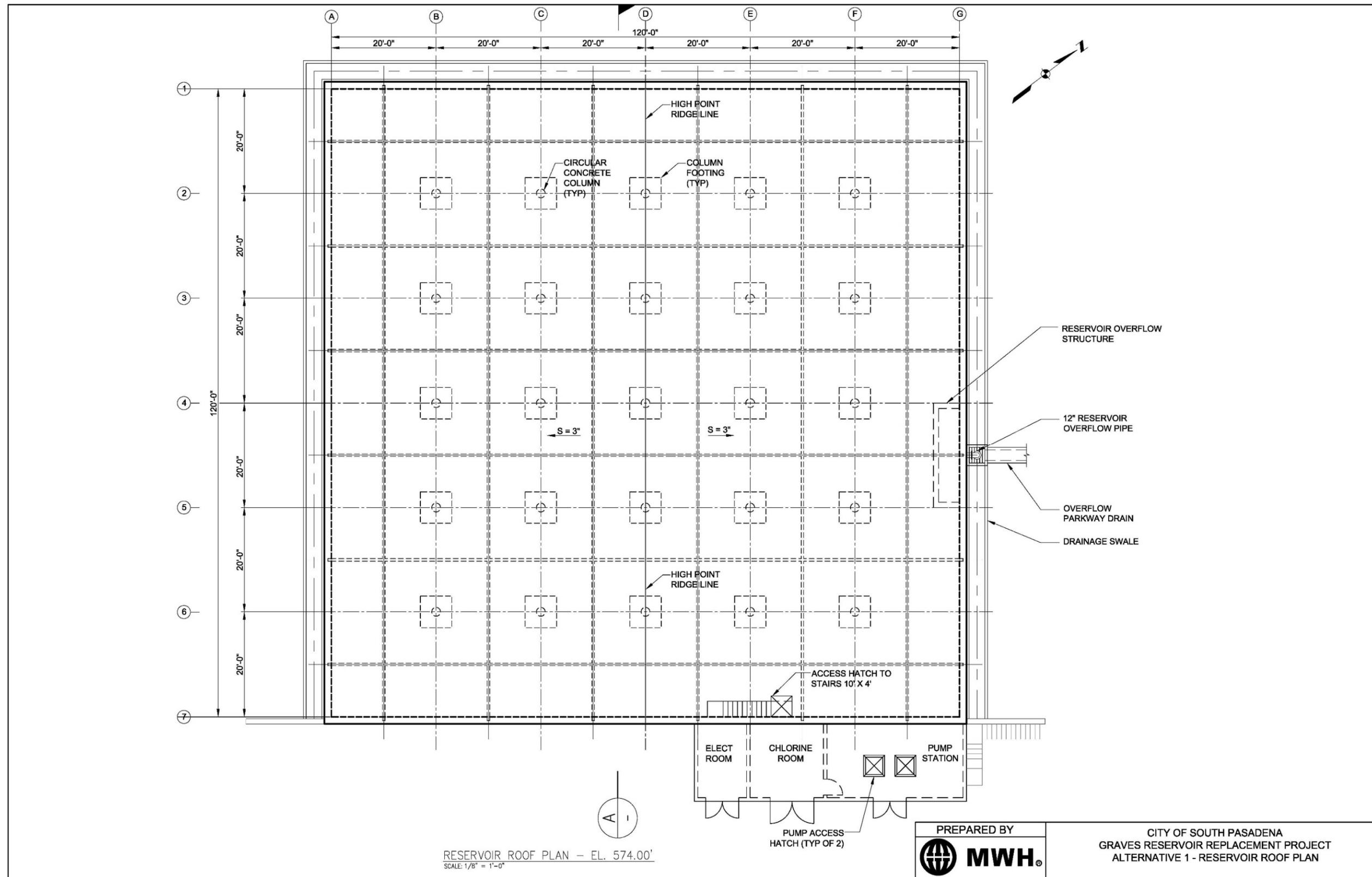
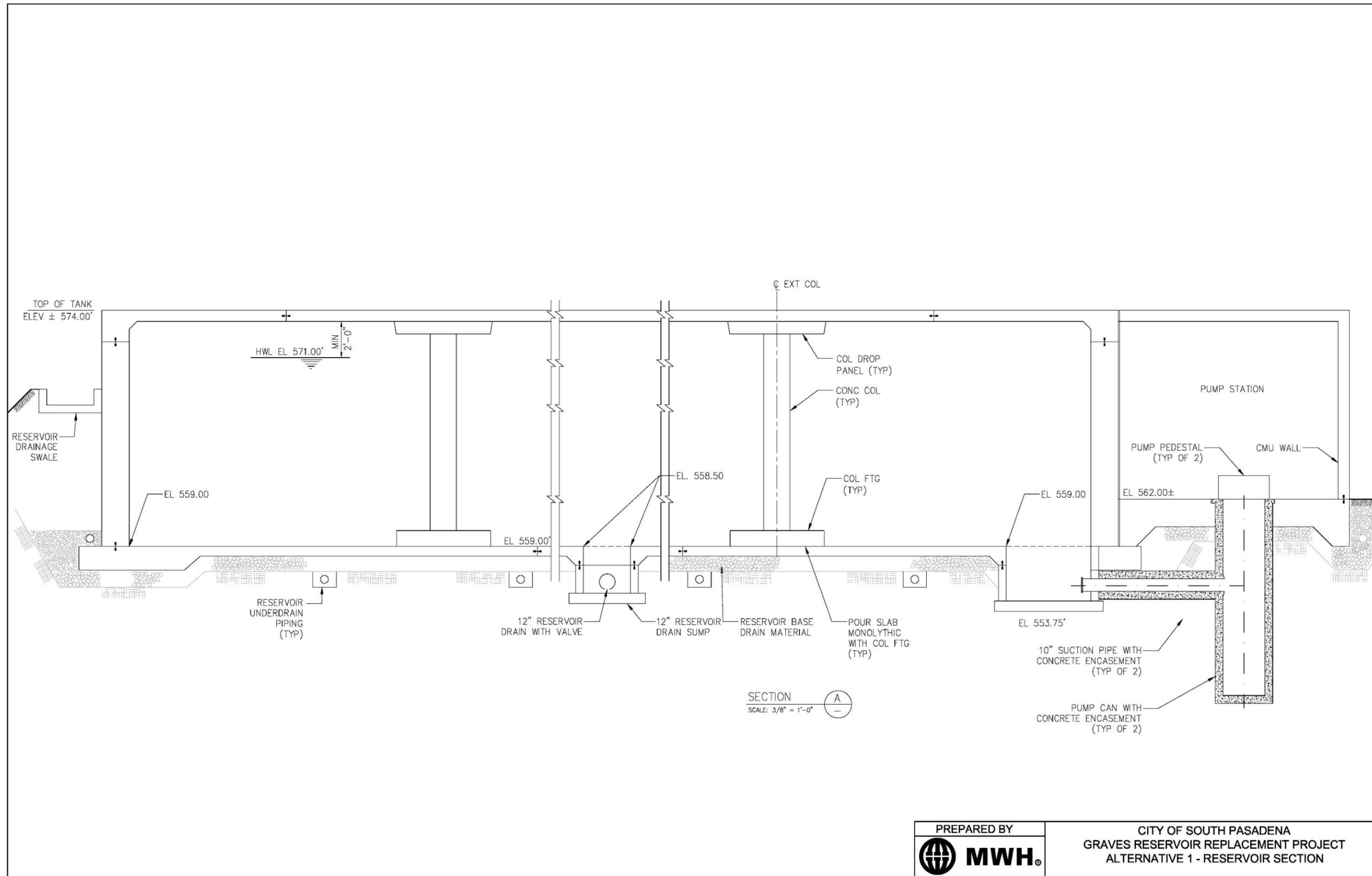


Figure 11 Reservoir Section



PREPARED BY  
 **MWH**

CITY OF SOUTH PASADENA  
 GRAVES RESERVOIR REPLACEMENT PROJECT  
 ALTERNATIVE 1 - RESERVOIR SECTION

# Section 2

## Environmental Analysis

### 2.1 ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" or "Less than Significant with Mitigation" as indicated by the checklist on the following pages.

<input type="checkbox"/> Aesthetics	<input type="checkbox"/> Geology and Soils	<input checked="" type="checkbox"/> Noise
<input type="checkbox"/> Agricultural Resources	<input checked="" type="checkbox"/> Hazards and Hazardous Materials	<input type="checkbox"/> Population and Housing
<input checked="" type="checkbox"/> Air Quality	<input type="checkbox"/> Hydrology and Water Quality	<input type="checkbox"/> Public Services
<input checked="" type="checkbox"/> Biological Resources	<input type="checkbox"/> Land Use and Planning	<input type="checkbox"/> Recreation
<input checked="" type="checkbox"/> Cultural Resources	<input type="checkbox"/> Mineral Resources	<input checked="" type="checkbox"/> Transportation and Traffic
	<input type="checkbox"/> Greenhouse Gas Emissions	<input type="checkbox"/> Utilities and Service Systems

### 2.2 AGENCY DETERMINATION

On the basis of this initial evaluation:

- I find that the project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
- I find that although the project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the applicant. A MITIGATED NEGATIVE DECLARATION will be prepared.
- I find that the project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
- I find that the project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.
- I find that although the project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the project, nothing further is required.

Signature   
 Printed Name Mr. Raut Toor P.E.  
 Title Public Works Director

Date 3-30-2016

**2.3 ENVIRONMENTAL CHECKLIST**

**2.3.1 Aesthetics**

Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

**Discussion:**

- a) **Less than Significant Impact.** The project site and existing Graves Reservoir sit on a neutral point in the landscape, at an elevation of 565 feet above MSL. From adjacent hillsides, views of the site and the surrounding areas are of residential properties, roadways and vegetation. The existing reservoir is partially below ground. The remaining height of the reservoir is surrounded by a vegetated berm hiding it from residential properties on all sides. A portion of the existing electrical room is visible from El Molino Avenue (**Figure 4** and **Figure 5**). The proposed replacement reservoir would be the same height as the existing reservoir with the same top elevation. Similar to the existing reservoir, the new reservoir would be shielded from view by a vegetated berm. Therefore, the proposed project would have a less than significant impact on scenic vistas.
  
- b) **No Impact.** Since no designated or nominated State scenic highways are located in the vicinity of the project site (Caltrans, 2009), the project would not affect scenic views from any scenic highways. The closest scenic highway is Route 110 (the Arroyo Seco Historic Parkway), between milepost 25.7 and milepost 31.9 in Los Angeles (Caltrans, 2011). In addition, the project would not add new structures taller than existing facilities and would therefore not obstruct views from roadways. Because there are no rock outcroppings or historic buildings on the project site, none would be impacted. Trees removed during project construction would be replaced as described in Section 2.3.4. Therefore, the proposed project would have no impact on scenic resources.
  
- c) **Less Than Significant Impact.** The project site is located in a residential area and is currently operated as a groundwater well and reservoir. During construction of the project, grading, materials transport and other construction activities may temporarily degrade the visual character and quality of the project site and neighboring access roads. Overall, the impact of the proposed project on visual quality of the site would be less than significant.

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- d) **Less Than Significant Impact.** No project-related construction activities would require additional lighting because activities would be scheduled to take place during normal daylight hours. Once constructed, the new facilities would have low-intensity security lighting that would be shielded away from adjacent nearby residences. The new facilities would not have large expanses of glass or reflective materials that would create a new source of glare. Therefore, project-related impacts on light and glare would be less than significant.

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### 2.3.2 Agricultural and Forest Resources

Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Result in the loss of forest land or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

#### Discussion:

a), b), c), d), e) **No Impact.** The proposed project site is not designated as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (CDC, 2002). The project site is not associated with a Williamson Act contract (CDC, 2014). The project site is not zoned for agricultural use; the General Plan land use designation for the site is Low Density Residential. Therefore, the project would not impact Prime Farmland, Unique Farmland, Farmland of Statewide Importance, existing zoning for agricultural use, or a Williamson Act contract. In addition, the project does not contain any timberland zoned for Timberland Production as defined by Government Code section 51104(g). Moreover, the project actions would be limited to the existing reservoir site, which has no agriculture, forest or timber resources. Therefore, the project would not result in conversion of Farmland, timberland or forest land to other uses. The proposed project would have no impacts on agricultural or forest resources.

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### 2.3.3 Air Quality

Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) Create objectionable odors affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

#### Discussion:

The City of San Marino is within the West San Gabriel Valley region of the South Coast Air Basin (SCAB), which is bounded by the San Gabriel, San Bernardino, and San Jacinto Mountains to the north and east, and the Pacific Ocean to the south and west. The climate is warm and temperate. The mild climate is occasionally disrupted by periods of hot weather, winter storm and Santa Ana winds. The average annual temperature is 68° Fahrenheit and the average rainfall is 18 inches, occurring primarily in the winter months.

The Los Angeles County portion of the SCAB is regulated by the South Coast Air Quality Management District (SCAQMD) and is state-designated as a non-attainment area for ozone (8-hour), particulate matter 10 microns or less in diameter (PM<sub>10</sub>), and particulate matter 2.5 microns or less in diameter (PM<sub>2.5</sub>) (California Air Resources Board (CARB), 2014). Based on the federal standards, the SCAB is a non-attainment area for ozone (8-hour) and in attainment for PM<sub>10</sub>. EPA has proposed to determine that the SCAB has attained the 1997 annual and 24-hour PM<sub>2.5</sub> National Ambient Air Quality Standards. The SCAB is state and federal-designated as in attainment for nitrogen dioxide (NO<sub>2</sub>), sulfur dioxide (SO<sub>2</sub>) and carbon monoxide (CO).

SCAQMD has established thresholds of significance for air quality impacts for construction and operation (**Table 2**). SCAQMD also publishes localized significance thresholds (LSTs) that are a function of a project's location, size, and sensitive receptor distance. Based on the project location within the West San Gabriel Valley (Source Receptor Area 8), a project size less than 1 acre and 25 meters to the nearest receptor, LSTs are listed in **Table 2**.

**Table 2  
SCAQMD Air Quality Significance Thresholds**

Mass Daily Thresholds			
Pollutant	Construction	Operation	Construction LST
NO <sub>x</sub>	100 lbs/day	55 lbs/day	69
VOC	75 lbs/day	55 lbs/day	--
PM <sub>10</sub>	150 lbs/day	150 lbs/day	4
PM <sub>2.5</sub>	55 lbs/day	55 lbs/day	3
SO <sub>x</sub>	150 lbs/day	150 lbs/day	--
CO	550 lbs/day	550 lbs/day	535

NO<sub>x</sub> = Nitrogen oxide, VOC = Volatile Organic Compounds, PM<sub>10</sub> = Particulate matter 10 microns or less in diameter, PM<sub>2.5</sub> = Particulate matter 2.5 microns or less in diameter, SO<sub>x</sub> = Sulfur oxides, CO = Carbon monoxide

LST = localized significance thresholds for Source Receptor Area 8 (West San Gabriel Valley), project site of 1 acre and nearest receptor 25 meters (SCAQMD, 2009)

Source: SCAQMD CEQA Handbook (SCAQMD, 1993; revised 2006)

- a) **No Impact.** The applicable air quality plan for the project area is the 2012 Air Quality Management Plan (AQMP) (SCAQMD, 2013). The AQMP is designed to satisfy the planning requirements of both the federal and California Clean Air Acts. The AQMP outlines strategies and measures to achieve federal and state standards for healthful air quality for all areas under SCAQMD’s jurisdiction.

A project is deemed inconsistent with the applicable air quality plan if it would result in population and/or employment growth that exceeds growth estimated in the applicable air quality plan. Since the project does not include construction of homes or businesses, it would not directly impact population growth. Since the proposed project consists of the replacement of an existing potable water storage reservoir with a new reservoir of similar size, the project would not expand the existing potable water system or add connections to new users. Therefore, the proposed project would not significantly impact population growth or conflict with or obstruct the implementation of the AQMP. There would be no impact on the relevant air quality plan.

- b), c) **Less than Significant with Mitigation.** Operation of the proposed reservoir facility would not cause an increase in air pollutant emissions. Currently, there are two booster pumps and one well pump onsite. Electric demand during 2014 for the existing facility was 310,344 kWh. The new facility would also house two booster pumps and one well pump of similar size. Electric demand for the new facility is not specifically known; however, since newer, more energy efficient equipment would be installed, it is anticipated that demand would be reduced. Other emissions related to project operation include vehicle emissions from maintenance staff visiting the site; these emissions would be the same as existing conditions. Overall, operational emissions would be less than existing conditions, a beneficial impact on air quality.

The proposed project would temporarily generate air pollutants from construction

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activities. Construction of the proposed project would include demolition of the existing reservoir; site preparation; grading; construction of the proposed reservoir and pump station; and paving of the driveway. These construction activities would generate air pollutants from equipment exhaust, earth disturbance, and off-gassing from asphalt and paints. **Table 3** summarizes estimated emissions based on estimated maximum day emissions during construction. The emissions were estimated based on the worst-case day occurring during earthwork activities. Additional particulate matter emissions would result from earthwork as summarized in **Table 4**.

**Table 3  
Estimated Peak Day Construction Air Pollutant Emissions**

Emissions Source (on-road vehicles)	Vehicle Type	No.	Est Max miles per day	Emission Factor (lbs/mi) <sup>1</sup>						Est Peak Day Emissions (lbs/day)					
				VOC	CO	NOx	SOx	PM10	PM2.5 <sup>3</sup>	VOC	CO	NOx	SOx	PM10	PM2.5
Light Duty Truck	PV	2	20	0.0006	0.0054	0.0005	0.0000	0.0001	0.0001	0.02	0.22	0.02	0.00	0.00	0.00
Water Truck	HHDT	1	5	0.0015	0.0065	0.0169	0.0000	0.0008	0.0007	0.01	0.03	0.08	0.00	0.00	0.00
Dump Truck	HHDT	10	40	0.0015	0.0065	0.0169	0.0000	0.0008	0.0007	0.58	2.60	6.76	0.02	0.34	0.28
Workers Personal Vehicles	PV	8	100	0.0006	0.0054	0.0005	0.0000	0.0001	0.0001	0.48	4.30	0.41	0.01	0.08	0.05
Emissions Source (construction equipment)	No.	Est Max hrs of use per day	Emissions Factor (lbs/hr) <sup>2</sup>						Est Peak Day Emissions (lbs/day)						
			VOC	CO	NOx	SOx	PM10	PM2.5 <sup>3</sup>	VOC	CO	NOx	SOx	PM10	PM2.5	
Backhoe	1	8	0.0555	0.2889	0.2435	0.0004	0.0141	0.0125	0.44	2.31	1.95	0.00	0.11	0.10	
Excavator	1	8	0.0760	0.5042	0.4840	0.0009	0.0340	0.0303	0.61	4.03	3.87	0.01	0.27	0.24	
Front End Loader	1	8	0.0477	0.3442	0.3216	0.0006	0.0217	0.0193	0.38	2.75	2.57	0.00	0.17	0.15	
Fugitive Dust from grading, material handling and truck travel for soil hauling (see Table 4)														4.28	3.60
<b>Total</b>										<b>2.5</b>	<b>16.3</b>	<b>15.7</b>	<b>0.0</b>	<b>5.3</b>	<b>4.4</b>

PV: passenger vehicles, HHDT: heavy-heavy-duty trucks, DT: delivery trucks

<sup>1</sup> SCAQMD. 2007a. EMFAC2007 v. 2.3 Emission Factors for On-Road PV & DT. Scenario Year 2017

<sup>2</sup> SCAQMD. 2007b. SCAB Fleet Average Emission Factors (Diesel). Scenario year 2017

<sup>3</sup> SCAQMD. 2006. Final –Methodology to Calculate Particulate Matter (PM) 2.5 and PM 2.5 Significance

**Table 4  
Estimated Fugitive Dust Emissions**

<b>Emissions Type</b>	<b>Emissions Factor</b>	<b>Units</b>	<b>Source of Emission Factor</b>	<b>Graded Area (acres per day)</b>	<b>PM10 Emissions (lbs per day)</b>	<b>PM2.5 Emissions (lbs per day)</b>
Grading	26.4	lbs/acre	SCAQMD, 1993	0.15	3.96	3.52
				<b>Material Handled (tons per day)</b>		
Material Handling <sup>1</sup>	0.000449	lbs/ton	AP-42 13.2.4	160	0.072	
Material Handling <sup>1</sup>	0.000068	lbs/ton	AP-42 13.2.4	160		0.011
				<b>Miles per day</b>		
Travel on paved roadways - soil haul truck <sup>2</sup>	0.000627	lbs/VMT	AP-42 13.2.1	400	0.251	
Travel on paved roadways - soil haul truck <sup>2</sup>	0.000154	lbs/VMT	AP-42 13.2.1	400		0.062
<b>Totals</b>					<b>4.28</b>	<b>3.60</b>

AP-42 Source: EPA, 1995

**Table 5** compares the peak-day onsite construction emissions (before mitigation) to the relevant LSTs. As shown in this table, while NO<sub>x</sub> and CO emissions would be less than the screening-level LSTs, project-related PM<sub>10</sub> and PM<sub>2.5</sub> emissions would exceed the screening-level LSTs. With implementation of Mitigation Measure AQ-1 (site watering), particulate matter emitted during the earthwork phase of project construction from grading and excavation would be reduced an estimated 61 percent (SCAQMD, 2007c). As shown in **Table 6**, dust emissions would be reduced below LSTs with implementation of Mitigation Measure AQ-1. The project would have a less than significant impact on air quality as mitigated.

**Table 5  
Localized Significance Threshold Analysis Before Mitigation**

	<b>CO</b>	<b>NO<sub>x</sub></b>	<b>PM<sub>10</sub></b>	<b>PM<sub>2.5</sub></b>
Unmitigated Construction Emissions	16.3	15.7	5.3	4.4
SCAQMD Localized Significance Threshold	535	69	4	3
Significant?	No	No	Yes	Yes

**Table 6  
Localized Significance Threshold Analysis After Mitigation**

	<b>CO</b>	<b>NOx</b>	<b>PM<sub>10</sub></b>	<b>PM<sub>2.5</sub></b>
Mitigated Construction Emissions	16.3	15.7	2.7	2.2
SCAQMD Localized Significance Threshold	535	69	4	3
Significant?	No	No	No	No

**Federal Clean Air Act Conformity.** The federal Clean Air Act general conformity requirements are specified in the Code of Federal Regulation (CFR). Estimated emissions for the project are well below the de minimis levels specified by 40 CFR 93.153 and less than 10 percent of the SCAB’s inventory for nonattainment criteria pollutants (ozone precursors and particulate matter). The de minimis levels are 10 tons/year for VOCs or NOx in an extreme ozone nonattainment area, 100 tons/year for PM<sub>10</sub> in a maintenance area, and 100 tons/year for PM<sub>2.5</sub> direct emissions. Temporary project-related construction emissions would be substantially less than these thresholds - less than 1 to 2 tons/year for VOCs, NOx, PM<sub>10</sub> and PM<sub>2.5</sub>. Therefore, the project is in conformity with the Federal Clean Air Act.

- d) **Less than Significant with Mitigation.** Certain residents, such as the very young, the elderly and those suffering from certain illnesses or disabilities, are particularly sensitive to air pollution and are considered sensitive receptors. In addition, active park users, such as participants in sporting events, are sensitive air pollutant receptors due to increased respiratory rates. Land uses where sensitive air pollutant receptors congregate include schools, day care centers, parks, recreational areas, medical facilities, rest homes, and convalescent care facilities.

As described above, the proposed project would result in temporary dust emissions during construction in excess of established SCAQMD thresholds. However, with incorporation of mitigation measure AQ-1, project-related impacts on air quality, including impacts to sensitive receptors, would be less than significant. Operation of the proposed facilities would result in similar air pollutant emissions as under existing conditions.

In addition to the priority pollutants discussed in b) and c) above, toxic air emissions are of potential concern to sensitive receptors. The proposed project would generate emissions from construction equipment during construction activities, including emissions from diesel trucks and heavy construction equipment. CARB classifies diesel particulate emissions as a toxic air contaminant (TAC). Significant impacts associated with exposure to diesel particulate emissions are not expected because construction would occur 5 days per week for approximately 18 months. Quantitative cancer risk analyses are based on exposure of 70 years for residential exposures and 46 years for occupational exposures; exposure to project-related emissions will be for a much shorter period of time (i.e. during the construction phase). The maximum particulate emission for diesel engines is estimated at approximately 1 pound per day during the peak construction phase. Based on the short exposure period and small amount of emissions, toxic air contaminant emissions would be

less than significant during the construction phase. As discussed above, project operation would not result in substantial air pollutant emissions over existing conditions. Due to the limited duration of project construction, project related air quality impacts on sensitive receptors would be less than significant.

- e) **Less than Significant.** During construction, equipment exhaust and certain construction materials (e.g. asphalt) may be mildly odorous. However, such odors would be limited to the immediate vicinity of the project site, would dissipate rapidly, and would cease at the end of construction. Operation of the reservoir includes the generation of sodium hypochlorite (chlorine) from a brine solution composed of salt and water to maintain the reservoir water quality at the required standard. This process may emit some mild odor; however, the re-chlorination equipment would be enclosed in a structure and, thus any odor emitted would only be detected by workers servicing the equipment. Therefore, the proposed project would not create objectionable odors affecting a substantial number of people, and project-related impacts related to odors would be less than significant.

### **Mitigation Measure**

With incorporation of Mitigation Measure AQ-1, impacts on air quality would be reduced to a less than significant level.

**AQ-1 Site Watering.** Disturbed areas of the project site shall be watered three times per day during the demolition, excavation, grading and site preparation phases of project construction.

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### 2.3.4 Biological Resources

Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Have a substantial adverse effect on federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of wildlife nursery sites?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

The results of a Biological Resources Assessment completed for the project are included as **Appendix B**.

#### Discussion:

- a) **No Impact.** The project site lies within a suburbanized area of the City of San Marino. The site is currently occupied by the existing Graves Reservoir and accessory structures. Vegetation on the project site consists of ornamental landscaping and 17 trees (**Table 7**). Sensitive plants and animals known for the general vicinity of the project site are listed by CDFW and USFWS (**Appendix B**). Located in a residential neighborhood, habitat to support these species is not present on the project site, or immediately adjacent to the site. Therefore, construction and operation of the proposed project would not result in impacts to any species identified as a candidate, sensitive, or special status.
- b) and c) **No Impact.** The project site is devoid of natural hydrology, hydrophytic vegetation, and hydric soils. The proposed project site does not contain any federally protected wetlands as defined in Section 404 of the Clean Water Act (including, but not

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limited to, marsh, vernal pool, coastal, etc.). As noted in **Appendix B**, a review of the National Wetlands Inventory indicates that there are no wetlands at this location. Therefore, the proposed project would have no impact on riparian vegetation or wetlands.

- d) **Less Than Significant Impact with Mitigation.** The site lies within a developed area and is surrounded by residential properties on all sides. This portion of the City does not support the dispersal of wildlife and the project site does not contribute to a wildlife corridor. Furthermore, since the site lies within a developed area and since the proposed project would not install any new physical barriers, the proposed project would not restrict wildlife migration or movement. Therefore, the proposed project would have no impact on the movement of fish or wildlife, wildlife corridors, or the use of wildlife nursery sites.

Migratory bird species are protected by international treaty under the Migratory Bird Treaty Act (MBTA) of 1918 (16 USC 703-711). The MBTA makes it unlawful to take, possess, buy, sell, purchase, or barter any migratory bird listed in 50 CFR Part 10, including feathers or other parts, nests, eggs or projects, except as allowed by implementing regulations (50 CFR 21). Sections 3503, 3503.5 and 3800 of the *California Fish and Game Code* prohibit the take, possession, or destruction of birds, their nests or eggs. USFWS lists 28 species of migratory birds that could potentially occur in the project vicinity. Nesting of birds subject to the MTBA is not specifically known for the project site. However, since 10 trees would be removed during project construction, impacts to MTBA species are possible. Implementation of Mitigation Measure Bio-1 would reduce impacts on bird species subject to the MBTA to less than significant levels.

- e) **Less than Significant Impact.** The City of San Marino tree preservation ordinance is contained in Chapter 23.06.15 of the City Municipal Code. This ordinance requires permits for trimming and/or removal of certain trees. Trees afforded protection by the City of San Marino's tree preservation ordinance include:

- **ESTABLISHED TREE:** In the front yard and side yard adjacent to a street, any woody plant that is at least fifteen feet (15') in height and whose trunk is at least thirty six inches (36") or more in circumference when measured at a point four and one-half feet (4 ½') above natural grade level and in the rear yard and side yard not adjacent to a street, any woody plant that is at least fifteen feet (15') in height and whose trunk is at least forty nine inches (49") in circumference when measured at a point four and one-half feet (4 ½') above the natural grade level.
- **OAK TREE:** Any oak tree of the genus *Quercus* including, but not limited to, coast live oak (*Quercus agrifolia*), coastal scrub oak (*Quercus dumosa*), Engelmann oak (*Quercus engelmannii*), scrub oak (*Quercus berberidifolia*), valley oak (*Quercus lobata*), and southern live oak (*Quercus virginiana*) that is at least fifteen feet (15') in height and whose trunk is at least thirty six inches (36") or more in circumference when measured at a point four and one-half feet (4 ½') above natural grade level.

An arborist survey report was prepared for the project by West Coast Arborists, Inc. (WCA) on November 6, 2015 and is included in **Appendix A** of this Initial Study. Seventeen trees were identified on the Graves Reservoir site (**Table 7**). Ten trees would

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be removed as part of the proposed project. The trees to be removed are non-native (Chinese Elm, Pecan, and Oriental Arborvitae), and not considered *Established Trees* pursuant to the City’s tree preservation ordinance. The oak tree onsite would not be removed or impacted during project construction. Therefore, tree removal and trimming related to project construction would not require tree permits. Additionally, the landscape plan for the proposed project would include planting of at least seven new trees; species may include Strawberry tree, Brisbane Box, Pink Trumpet Tree and Magnolia ‘Little Gem’. Potential locations for tree plantings are the front yard area and to the rear of the reservoir tank. The impact on local policies and ordinances protecting biological resources would be less than significant.

- f) **No Impact.** The project site does not fall within the boundaries of any Habitat Conservation Plan or Natural Community Conservation Plan (CDFW, 2015), so there would be no impact on conservation planning.

**Table 7  
Existing Onsite Trees**

Tree #	Common Name	Diameter at Stump Height (inches)	Height (feet)	Comments
1	Pecan	19	25	Tree to be removed. Replant with new species elsewhere on site.
2	Pecan	40	30	Tree to be removed. Replant with new species elsewhere on site. Tree is not adjacent to a street, therefore tree ordinance threshold for established trees is 49 inches (diameter at breast height).
3	Cork Oak	5	15	Tree to be retained.
4-8	Chinese Elm	<24	<45	Tree to be removed. Replant with new species (3 trees) elsewhere on site.
9	Chinese Elm	<24	stump only	Stump to be removed.
10	Chinese Elm	<24	<45	Tree to be removed. Replant with new species elsewhere on site.
11-16	Oriental Arborvitae	12	18	Trees to be retained. Perform crown thinning to reduce likelihood of additional failures.
17	Chinese Elm	<24	<45	Tree to be removed. Replant with new species elsewhere on site.

**Federal Conformity.** One species (Coastal California Gnatcatcher) subject to the federal Endangered Species Act (ESA) and 28 bird species subject to the MBTA are identified by the

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USFWS for the general project vicinity (**Appendix B**). The habitat for Coastal California Gnatcatcher is coastal sage scrub, a vegetation community absent from the project site. Similarly, nesting by bird species in onsite trees or other vegetation is not known for the project site, therefore impacts to MBTA species are not anticipated. However, mitigation measure Bio-1 would be implemented to confirm that nests of MBTA species are not disturbed by project construction activities. As mitigated, the proposed project would be in conformance with the federal ESA.

### **Mitigation Measure**

With incorporation of Mitigation Measure Bio-1, impacts on biological resources would be reduced to a less than significant level.

**Bio-1 Nesting Birds.** For all construction-related activities that take place within the nesting season (February 1 through August 31), a preconstruction nesting-bird survey shall be conducted no more than 14 days prior to project initiation within the project area and a 300-foot buffer, 500-foot for raptors. If active nests are found for species subject to the MBTA, a no-disturbance buffer zone shall be established according to the biologist's assessment of the species' sensitivity to disturbance, generally 300 feet for smaller birds and 500 feet for raptors. Within this buffer zone, no construction shall take place until August 31, until the biologist determines that the nest is no longer active, or unless an alternative method of avoiding nest disturbance is prepared by the biologist and approved by the relevant resource agencies.

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### 2.3.5 Cultural Resources

Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Disturb any human remains, including those interred outside of formal cemeteries?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Discussion:**

In conformance with CEQA and Section 106 of the National Historic Preservation Act (NHPA), a Phase I Cultural Resources Assessment was prepared for the proposed project by Provenience Group (January 2016). A copy of the report is on file with the City of South Pasadena.

On December 7, 2015, a records search was conducted at the South Central Coastal Information Center of the California Historical Resources Information System (SCCIC-CHRIS) located at California State University, Fullerton. Two prior studies have been conducted within a 0.5-mi radius of the project area of potential effect (APE). Although no previously recorded archaeological resources have been identified, each of two studies recorded one historic architectural resource within the search radius. An intensive cultural resources pedestrian survey was conducted on December 8, 2015. The purpose of the survey was to locate, record, and evaluate cultural resources within the APE. Parallel transect intervals of 3 meters (10 feet) were used to ensure complete survey coverage of the entire project site. Bare patches of ground, rodent burrows, erosive areas, and other locations of ground disturbances were examined to assess the potential for subsurface cultural soils or artifacts. Surface visibility ranged from excellent at the south end, to fair due to thick shrubbery surrounding the reservoir and along the fence line at the margins of the parcel. The reservoir was also inventoried and evaluated. The results of the archaeological pedestrian survey were negative for prehistoric and/or historic archaeological resources.

Consultation with Native American organizations and individuals was completed to satisfy the requirements of both Section 106 of the NHPA and Assembly Bill (AB) 52 regulations. Consultation with the Native American Heritage Commission (NAHC) began on December 4, 2015 to request information about sacred or traditional cultural properties that may be located within the project site. A search of the Sacred Lands file housed at the NAHC, dated December 22, 2015, did not result in the identification of traditional cultural places within or surrounding the project APE. The NAHC also provided a list of six local groups and individuals to contact for further information regarding their knowledge of cultural resources within and near the project site. On December 22, 2015, letters were mailed to all six groups and individuals to request

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information regarding local knowledge about cultural resources, traditional gathering areas, or sacred lands in or near the project site. In addition, each representative received a follow-up phone call on January 7, 2016 to further encourage Native American participation in the consultation process. Two Native American representatives voiced concerns about the project and requested that their representative be present to monitor during ground disturbances related to demolition and construction (**Table 8**).

**Table 8**  
**Native American Consultation Phone Log**

Contact Date	Name	Affiliation	Discussion
1/7/2016	Rosemary Morillo/Carrie Garcia	Soboba Band of Mission Indians	Left voice mail message; no response.
1/7/2016	Anthony Morales	Gabrieleno/Tongva San Gabriel Band of Mission Indians	Mr. Morales stated that San Marino is a very culturally sensitive area for both prehistoric and historic resources, important to the culture of the Gabrieleno tribe. He thought there should be an archaeologist and Native American monitor during demolition and construction and because his group is closest to the project area, he wants to be considered the Native American representative.
1/7/2016	Sandonne Goad	Gabrielino/Tongva Nation	Left voice mail message; no response.
1/7/2016	Robert F. Dorame	Gabrielino Tongva	He requested that the letter that was mailed to him on December 22, 2015, be emailed. This was done immediately. He said he would review the letter and contact the project archaeologist if he had concerns or any information to share.
1/7/2016	Linda Candelaria	Gabrielino-Tongva Tribe	Left voice mail message; no response.
12/23/2015	Andrew Salas	Gabrieleno Band of Mission Indians – Kizh Nation	Mr. Salas emailed a letter expressing concerns about the project and provided historic information about the area, including a historic connection with his great, great, great aunt. In the letter he requested that a Native American monitor be present during demolition and construction.
1/7/2016			Left voice mail message.
1/11/2016			Mr. Salas emailed to reiterate that he be present to monitor during construction.

- a) **No Impact.** The Graves Reservoir, constructed in 1928, is related to the continued development of adequate water supply for the City of South Pasadena. Due to its age, the existing reservoir was evaluation as a potential historic resource using the criteria described in 36 Code of Federal Regulations (CFR) 60.4 (eligibility criteria for listing in the National

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Register of Historic Places (NRHP)) and California CCR Title 14, Chapter 11.5, §4850 (eligibility criteria for listing in the California Register of Historical Resources (CRHR)). Since the Graves Reservoir is just one of many reservoirs constructed within communities throughout southern California, there is no evidence that the structure is eligible for listing under Criteria A/1. The reservoir was named in honor of Jackson A. Graves, a local businessman and lawyer who owned a ranch in Alhambra. However, he is not directly associated with construction of the Graves Reservoir by the City of Pasadena. Therefore, there is no evidence that the structure is eligible for listing under Criteria B/2. The concrete reservoir is of a standard design common during the early twentieth century throughout southern California and no further information can be yielded. Further, the reservoir and appurtenances have undergone various upgrades. Therefore, there is no evidence that the structure is eligible for listing under Criterion C/3 or D/4. Graves Reservoir is not eligible for the NRHP or CRHR and the project would have no impact to known historical resources.

- b) **Less than Significant Impact with Mitigation.** No significant archaeological resources were identified within the APE during the cultural resources survey and no archaeological sites were previously recorded in the APE or within 0.5 mi of the project site. Although the NAHC Sacred Lands search was negative, two separate Native American groups voiced concerns about the project and stated that the area is culturally sensitive. Because construction would include necessary excavation and grading, there is a potential that previously unknown archaeological resources could be encountered below the ground surface. In the event that subsurface resources are encountered during the course of demolition, grading and/or excavation, all work shall temporarily be halted in the area until a qualified archaeologist can be contacted to assess the find and determine proper treatment. With implementation of Mitigation Measure CR-1, project-related impacts on unknown archaeological resources would be less than significant.
- c) **Less than Significant Impact with Mitigation.** The paleontological records search reveals that no fossil localities are recorded within the proposed project site. The upper soils of the APE's subsurface consist of surficial sediments of younger Quaternary Alluvium, which typically do not contain vertebrate fossils. However, fossil localities are recorded nearby within older Quaternary sediments (Qoa) that likely occur at depth within the APE. Because the proposed project would not penetrate into High Potential deeper layers, impacts to paleontological resources are not anticipated. However, since excavations that extend into older deposits have the potential to unearth significant vertebrate remains, Mitigation Measure CR-2 shall be implemented. As mitigated, impacts to paleontological resources would be less than significant.
- d) **Less than Significant Impact with Mitigation.** No known human burials have been identified on the project site or in the vicinity of the project site. The project site is not part of a formal cemetery and is not known to have been used for disposal of historic or prehistoric human remains. Thus, human remains are not expected to be encountered during construction of the proposed project. In the unlikely event that human remains are encountered during project construction, Mitigation Measure CR-3 shall be implemented, and impacts from project site development on human remains would be less than significant.

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**Section 106 (NHPA) Finding of Effect.** The results of this study indicate that there are no properties on, or eligible for inclusion on the NRHP that would be impacted by the proposed project. Therefore, there is a finding of “No Historic Properties Affected” as a result of construction of the proposed project. The proposed project would be in conformance with the NHPA.

### Mitigation Measures

Impacts to cultural resources are not anticipated from the proposed project. However, the following mitigation measures shall be implemented to protect resources inadvertently discovered during project construction.

**CR-1 Unexpected Cultural Discoveries.** If during excavation or earth moving activities within the project site the construction contractor identifies potential historic or archaeological resources, all excavation and/or grading within 10 feet of the discovery area shall be halted immediately and work redirected until a qualified archaeologist has evaluated the nature and significance of the find.

The archaeologist shall determine whether the resource is a “unique archaeological resource” pursuant to Section 21083.2(g) of the *California Public Resources Code* (PRC) or a “historical resource” pursuant to Section 15064.5(a) of the State CEQA Guidelines (14 *California CCR*). If the archaeological resource is determined to be a “unique archaeological resource” or a “historical resource”, the Archaeologist shall formulate a mitigation plan in consultation with the Lead Agency that satisfies the requirements of the above-listed Sections and that reduces the adverse effects of the project to a less than significant level. If the Archaeologist determines that the archaeological resource is not a “unique archaeological resource” or “historical resource”, s/he need only record the site and submit the recordation form to the SCCIC.

If archaeological resources are found to be significant, the Archaeologist shall determine appropriate actions, in cooperation with the Lead Agency and Contractor, for exploration and/or salvage. These actions, as well as final mitigation and disposition of the resources, shall be subject to the approval of the Lead Agency.

The Archaeologist shall then prepare a final technical report, following the guidelines of the California Office of Historic Preservation, which includes the monitoring results and any evaluation of resources. Copies of the report shall be submitted to the Lead Agency and to the CHRIS-SCCIC. If prehistoric resources are identified, then a Native American monitor shall be invited to observe ground-disturbing activities.

**CR-2 Unexpected Paleontological Discoveries.** If any paleontological materials are encountered during ground disturbing activities, all excavation and/or grading within 10 feet of the discovery area shall be halted immediately and work redirected until a paleontologist has evaluated the nature and significance of the find.

**CR-3 Human Remains.** In the unexpected event that human remains are encountered during excavation activities, all work shall halt and the County Coroner shall be notified

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(California Public Resources Code §5097.98). The Coroner shall determine whether the remains are of forensic interest. If the Coroner, with the aid of the project Archaeologist, determines that the remains are prehistoric, s/he will contact the NAHC. The NAHC will be responsible for designating the Most Likely Descendant (MLD), who will be responsible for the ultimate disposition of the remains, as required by Section 7050.5 of the California Health and Safety Code. The MLD shall make his/her recommendation within 48 hours of being granted access to the site. The recommendation of the MLD shall be followed if feasible, and may include scientific removal and non-destructive analysis. If the landowner rejects the recommendations of the MLD, the landowner shall rebury the remains with appropriate dignity on the property in a location that will not be subject to further subsurface disturbance (California Public Resources Code §5097.98).

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### 2.3.6 Geology and Soils

Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
ii) Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iii) Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iv) Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994) creating substantial risks to life or property?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems, where sewers are not available for the disposal of wastewater?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

#### Discussion:

a)-i) **Less than Significant Impact.** The two closest active faults to the project site are the Raymond Hill Fault and the Sierra Madre Fault (CDC, 1999). The project site is not located within a currently designated Alquist-Priolo Earthquake Fault Zone (CDC, 1977). Approximately 0.9 km from the project site, the closest active fault is the left-lateral Raymond Hill fault that branches from the San Andreas Fault in the San Gabriel Mountains. The Raymond Hill Fault underlies most of the City of South Pasadena, San Marino, and extends straight through the Santa Anita Racetrack, forming the hills of San Marino and the Raymond Hills. Surface rupture on local faults is also possible outside of the currently mapped active faults. However, since permanent habitable structures would not be built as part of the proposed project, people would not be exposed to adverse effects involving seismic ground shaking. Damage to project facilities would be repaired as

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necessary. Therefore, impacts related to seismic events would be less than significant.

- a)-ii) **Less Than Significant Impact.** With its close proximity to the San Andreas Fault, Raymond Hill Fault and Sierra Madre fault zones, ground shaking is the primary seismic hazard affecting the City of San Marino. Given the seismic activity in the region, the proposed facility would likely be subject to strong seismic ground shaking. However, the risks of earthquake damage can be minimized through proper engineering, design, and construction. It is required that the reservoir be built according to the Uniform Building Code and other applicable codes, and the facility would be subject to building inspection during and after construction. With conformance to these required standards, the impact of seismic ground shaking on the proposed project would be less than significant.
- a)-iii) **No Impact.** Liquefaction refers to loose, saturated sand or gravel deposits that lose their load supporting capability when subjected to intense shaking. Review of the State of California Seismic Hazard Zones Map for the Los Angeles Quadrangle (CDC, 1999) indicates none of the project site is located in an area considered susceptible to liquefaction. The project area is generally geologically stable and suitable for development. The proposed project would have no impacts related to ground failure or liquefaction.
- a)-iv) **No Impact.** The State of California Seismic Hazard Zones Map for the Los Angeles Quadrangle (CDC, 1999) indicates that the project site is not in an area susceptible to earthquake-induced landslides; therefore, there would be no impact.
- b) **Less Than Significant Impact.** The proposed project would involve soil in-filling of space around the new water storage tank and minor re-grading of the site. Finish grades would closely approximate the existing grades on the site. Construction activities may result in the potential for soil erosion. However, adherence to sediment control measures, including slope stabilization and erosion/sedimentation control devices, would be incorporated into the project design during construction, as required by the Clean Water Act and the South Coast Air Quality Management District (Rule 403). Operation of the proposed project would not result in substantial soil erosion or loss of topsoil. Therefore, project-related impacts on soil erosion would be less than significant.
- c) **No Impact.** As discussed above in items a)-iii) and a)-iv), the site is not known for unstable soils related to liquefaction and/or landslides. Therefore, there would be no impact.
- d) **No Impact.** The soils onsite have been historically sufficient to support the existing 1.0 MG water reservoir. The same soils would be used to backfill around the concrete reservoir. Any necessary imported soils would be carefully selected to avoid expansive soil types. To date, no effects from expansive soils have been reported. In addition, the project does not involve construction of habitable structures and therefore is not expected to result in a substantial increase in risk to life or property due to expansive soils. Therefore, there would be no impact.
- e) **No Impact.** No septic tanks or alternative wastewater disposal systems would be required for the project. Therefore, no impacts would occur.

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### 2.3.7 Greenhouse Gas Emissions

Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

#### Discussion:

a and b) **Less than Significant.** Greenhouse gases (GHGs) (so called because of their role in trapping heat near the surface of the earth) emitted by human activity are implicated in global climate change, commonly referred to as “global warming”. These greenhouse gases contribute to an increase in the temperature of the earth’s atmosphere by transparency to short wavelength visible sunlight, but near opacity to outgoing terrestrial long wavelength heat radiation. The principal GHGs include carbon dioxide (CO<sub>2</sub>), methane, and nitrous oxide. Collectively GHGs are measured as carbon dioxide equivalents (CO<sub>2</sub>e).

Fossil fuel consumption in the transportation sector (on-road motor vehicles, off-highway mobile sources, and aircraft) is the single largest source of GHG emissions, accounting for approximately half of GHG emissions globally. Industrial and commercial sources are the second largest contributors of GHG emissions with about one-fourth of total emissions.

California has passed several bills and the Governor has signed at least three executive orders (EO) regarding greenhouse gases. GHG statues and EOs include AB 32, Senate Bill (SB) 1368, EO S-03-05, EO S-20-06 and EO S-01-07. AB 32, the California Global Warming Solutions Act of 2006, is one of the most significant pieces of environmental legislation that California has adopted. Most notably AB 32 mandates that by 2020, California’s GHG emissions be reduced to 1990 levels.

The City of South Pasadena and City of San Marino do not have any plans, policies, regulations, significance thresholds or laws addressing climate change at this time. The SCQAMD has adopted an interim CEQA GHG significance threshold for projects where the SCAQMD is the lead agency. While the SCAQMD is not the lead agency for the proposed project, the SCAQMD’s threshold is identified in this CEQA document as a reference for comparative purposes. The SCAQMD’s draft GHG significance threshold establishes a 5-tier threshold flowchart, with Tier 3 identifying screening thresholds of 10,000 metric tons per year (MT/yr) of CO<sub>2</sub>e for stationary source industrial projects and 3,000 MT/yr of CO<sub>2</sub>e for commercial and residential projects. The proposed project is most closely related to the industrial stationary source identified by the SCAQMD.

The only GHG emissions attributable to the project would be those resulting from

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construction equipment, maintenance equipment/vehicles, and the electricity used at the facility, primarily for powering the proposed booster pumps. Maintenance activities would be the same as existing conditions. And, since newer, more energy efficient pumps would be installed, it is anticipated that power demand would be reduced with implementation of the proposed project.

**Tables 9 and 10** summarize anticipated GHG emissions from construction of the project based on worst-case assumptions for vehicles, equipment and personnel. Per SCQAMD guidance, predicted greenhouse gas emissions from construction can be amortized over 30 years, and added to the operations emissions to compare to the SCAQMD threshold of 10,000 MT CO<sub>2e</sub> per year (SCAQMD, 2008). Since emissions from the proposed project would be substantially below this threshold, the impact on emissions of GHGs, and thus climate change, would be less than significant.

**Table 9  
Estimated Greenhouse Gas Emissions**

Emissions Source (on-road vehicles and ATVs)	Vehicle Type	No.	Est Avg miles per yr	Emission Factor (lbs/mi) <sup>1</sup>									Estimated Project Emissions (lbs/yr)								
				VOC	CO	NOx	SOx	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	VOC	CO	NOx	SOx	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O
Pickup Truck	PV	2	5200	0.000601	0.005379	0.000513	0.000011	0.000094	0.000062	1.106275	0.000053	0.000049	6.25	55.94	5.33	0.11	0.98	0.64	11505.26	0.55	0.51
Dump Truck	HHDT	10	2000	0.001452	0.006505	0.016904	0.000040	0.000849	0.000697	4.208201	0.000067	0.001606	29.04	130.11	338.08	0.81	16.98	13.94	84164.03	1.34	32.12
Haul Truck	HHDT	10	2800	0.001452	0.006505	0.016904	0.000040	0.000849	0.000697	4.208201	0.000067	0.001606	40.66	182.15	473.31	1.13	23.77	19.52	117829.64	1.88	44.96
Delivery Truck	DT	4	800	0.001502	0.009981	0.010700	0.000027	0.000431	0.000346	2.840050	0.000067	0.001017	4.81	31.94	34.24	0.09	1.38	1.11	9088.16	0.21	3.25
Water Truck	DT	1	1300	0.001502	0.009981	0.010700	0.000027	0.000431	0.000346	2.840050	0.000067	0.001017	1.95	12.98	13.91	0.04	0.56	0.45	3692.07	0.09	1.32
Workers Personal Vehicles <sup>4</sup>	PV	10	13000	0.000601	0.005379	0.000513	0.000011	0.000094	0.000062	1.106275	0.000053	0.000049	78.1	699.3	66.7	1.4	12.3	8.0	143815.7	6.89	6.34
<b>Total</b>																					
Emissions Source (construction equipment)	No.	No. Days in use per yr	Est Avg hrs of use per day	Emissions Factor (lbs/hr) <sup>2</sup>									Estimated Project Emissions (lbs/yr)								
				VOC	CO	NOx	SOx	PM <sub>10</sub>	PM <sub>2.5</sub> <sup>3</sup>	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	VOC	CO	NOx	SOx	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O
Backhoe	1	90	8	0.0555	0.2889	0.2435	0.0004	0.0141	0.0125	30.3	0.0050	0.023136	39.98	208.03	175.35	0.28	10.12	9.00	21849.92	3.61	16.66
Excavator	1	90	6	0.0760	0.5042	0.4840	0.0009	0.0340	0.0303	73.6	0.0069	0.045980	41.03	272.28	261.36	0.47	18.36	16.34	39756.45	3.70	24.83
Front end Loader	1	90	6	0.0477	0.3442	0.3216	0.0006	0.0217	0.0193	51.7	0.0043	0.030551	25.76	185.85	173.66	0.33	11.70	10.41	27933.13	2.32	16.50
Concrete Mixer	10	5	6	0.0074	0.0386	0.0461	0.0001	0.0018	0.0016	6.3	0.0007	0.004379	2.21	11.58	13.83	0.03	0.55	0.49	1896.07	0.20	1.31
Roller Compactor	1	10	6	0.0729	0.2611	0.2245	0.0003	0.0174	0.0155	26.0	0.0066	0.021326	4.37	15.67	13.47	0.02	1.05	0.93	1558.99	0.39	1.28
Crane	1	120	6	0.0690	0.3509	0.4155	0.0006	0.0341	0.0304	50.1	0.0062	0.039475	49.68	252.63	299.18	0.42	24.58	21.88	36106.54	4.48	28.42
Aerial Lift	1	30	4	0.0358	0.1768	0.2310	0.0004	0.0134	0.0119	34.7	0.0032	0.021945	4.30	21.22	27.72	0.05	1.61	1.43	4166.60	0.39	2.63
Air Compressor	1	90	4	0.0641	0.3165	0.4318	0.0007	0.0282	0.0251	63.6	0.0058	0.041020	23.08	113.95	155.44	0.26	10.14	9.02	22898.63	2.08	14.77
Motor Grader	1	20	4	0.0928	0.5166	0.5753	0.0009	0.0447	0.0398	75.0	0.0084	0.054654	7.43	41.32	46.02	0.07	3.58	3.18	5997.19	0.67	4.37
Welder	1	30	4	0.0434	0.1912	0.2054	0.0003	0.0150	0.0134	25.6	0.0039	0.019514	5.20	22.94	24.65	0.04	1.80	1.61	3072.32	0.47	2.34
Generator	2	160	6	0.0527	0.2821	0.4052	0.0007	0.0216	0.0192	61.0	0.0048	0.038499	101.17	541.61	778.08	1.34	41.38	36.83	117105.97	9.13	73.92
Asphalt Paving Equipment	2	10	6	0.0910	0.4165	0.5965	0.0008	0.0404	0.0360	68.9	0.0082	0.056669	10.91	49.98	71.58	0.10	4.85	4.32	8272.90	0.98	6.80
<b>Total</b>												<b>476</b>	<b>2849</b>	<b>2972</b>	<b>7</b>	<b>186</b>	<b>159</b>	<b>660710</b>	<b>39</b>	<b>282</b>	

Notes: PV: passenger vehicles, HHDT: heavy-heavy-duty trucks, DT: delivery truck

<sup>1</sup> SCAQMD, 2007a

<sup>2</sup> SCAQMD, 2007b

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**Table 10**  
**Estimated Annual GHG Emissions from Reservoir Construction**

	Units	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O
Clearing, grading, excavation, tank installation, retaining wall improvements, piping, site paving and landscaping	lbs per year	660,710	39	282
Global Warming Potential		1	25	298
CO <sub>2</sub> -Equivalent Construction-related Emissions	lbs per year	660,710	975	84,036
<b>Total GHG Emissions</b>	metric tons per year	338		
<b>Amortized GHG Emissions</b>	metric tons per year	11		

Global Warming Potential conversion to CO<sub>2</sub>e per USEPA, 2010

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### 2.3.8 Hazards and Hazardous Materials

Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
h) Expose people or structures to the risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

#### Discussion:

- a) and b) **Less Than Significant with Mitigation.** The proposed project involves the demolition of the existing Graves Reservoir and associated structures, and the installation of a similar size replacement reservoir, pump station, chlorination facility and wellhead treatment facility.

#### Operations

Operation of the replacement reservoir and associated facilities would not pose a risk of accidental explosion, release of hazardous substances, or other potential health hazards. The proposed chlorination facility, housed within the pump station building, would

maintain the chlorine residual in the reservoir at prescribed levels for public health. The facility would generate sodium hypochlorite from a brine solution made with salt and water, which would yield a solution strength of 0.8 percent. By comparison, household bleach has solution strength of approximately 5 to 6 percent, and is not classified as hazardous. Therefore, operation of the proposed project would have a less than significant impact related to hazardous materials.

### Demolition/Construction

A pre-demolition survey was conducted for the project by Group Delta (2015) to determine the presence of hazardous materials in existing structures (**Appendix C**). Existing facilities are known to contain asbestos-containing materials (ACM) and lead-based paint (LBP).

**ACM.** Bulk samples of friable and non-friable suspect ACM were collected for laboratory analysis. The survey determined the presence of ACM on the roof of the reservoir at the penetrations, vents and seams; interior surfaces of the reservoir; and control room. Sampling results are summarized in Table A of **Appendix C**.

**LBP.** LBP was detected in the existing structure's tan concrete walls, fence posts, doors and in the control room roof beam. The LBP sampling results are summarized in Table B of **Appendix C**. Detectable levels of lead were found throughout the Graves Reservoir buildings in concentrations ranging from 1.6 to 3.9 110 Mg/Kg<sup>2</sup>. The majority of the painted surfaces appeared to be in good condition and were not loose and flaking at the time of the survey. The report concluded that, if the LBP is removed from the building substrate, then testing of the lead should be performed prior to disposal. The presence of LBP does not necessarily mean that the health of the occupants or construction workers would be endangered. If the LBP remains in good condition and is not disturbed, exposures to lead would be expected to be negligible. However, when LBP deteriorates, is disturbed or damaged, such as during demolition operations, lead dust may be released, creating potential health hazards for building occupants and maintenance personnel.

**Other Hazardous Materials:** No visible mold or fungi were identified in the Graves Reservoir buildings during the survey. No other materials or chemicals of concern requiring special handling procedures were identified onsite.

Mitigation Measures HM-1 and HM-2 require proper handling and disposal of ACM and LBP. With the incorporation of HM-1 and HM-2, the risks of release of hazardous substances to the environment would be less than significant.

- c) **Less Than Significant with Mitigation.** The project site is within ¼-mile of Southwestern Academy and thus could have the potential to expose school children to the emission of hazardous materials such as ACM and LBP during the demolition phase of the project. However, with implementation of Mitigation Measures HM-1 and HM-2 the impact would be less than significant.
- d) **Less Than Significant Impact.** The State of California Environmental Protection Agency maintains the Cortese List. This list tracks and monitors hazardous waste sites and deed restriction orders. Based on a 1,000 foot radius search surrounding the Graves Reservoir site, there are no active cleanup sites (CalEPA, 2014). The most recent leaking

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underground storage tank (LUST) closure was a Conoco Phillips gas station located at 2390 East Huntington Drive, San Marino. The cleanup was completed and the case was closed on December 17, 2013. Additionally, the project site has been the site of the Graves Reservoir since the 1920s. No known releases of any hazardous materials have occurred onsite. Therefore, the proposed project would have no impact related to hazardous material sites compiled pursuant to Government Code Section 65962.5.

- e) and f) **No Impact.** No airports or private airstrips are located within 2 miles of the project area. Additionally, the project does not propose new structures of a height sufficient to pose a safety risk to aircraft. Therefore, there would be no project-related impacts on airport safety.
- g) **Less than Significant Impact.** The project would require approximately 13 construction vehicles including materials delivery trucks and approximately 10 construction workers commuting to the project site. No road or lane closures on Huntington Drive would be required for project construction. The minor addition in traffic to the project area during the construction period would have a less than significant impact on emergency access and evacuation plans.
- h) **No Impact.** The project site is located in a residentially developed area with pockets of landscaping and trees. The project area is not in an area subject to wildland fires and habitable structures are not proposed for the project site. Therefore, the project would have no impact on wildland fires.

### Mitigation Measures

With incorporation of Mitigation Measure HM-1 and HM-2, impacts from construction and operation of the proposed project related to hazardous materials would be reduced to a less than significant level.

**HM-1 Asbestos Containing Materials.** Because ACM would be disturbed as a result of the demolition of the existing reservoir and associated facilities, the following measures shall be implemented:

- ACM shall be removed and disposed prior to demolition using a licensed abatement contractor in accordance with Federal, State, and local regulations and ordinances.
- Bid documents and specifications shall be prepared for the demolition/construction project to ensure lawful removal techniques are used.
- A third party shall provide demolition oversight to document that the contractor complies with the specifications, proper protective equipment is used, and proper disposal procedures are followed.

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In addition to the measures above, the following precautions shall be taken prior to any repair or maintenance activities involving less than 100 square feet of ACM:

- Materials containing asbestos shall not be cut, sanded, or drilled.
- Prior to initiating demolition activities that would disturb the ACM, the area shall be thoroughly wet to prevent possible release into the air.
- ACM dust shall be removed with a high-efficiency particulate air (HEPA) vacuum or wet wiped with disposable towels.

**HM-2 Lead Based Paint.** The following measures shall be implemented to prevent the release of LBP:

- The LBP on the interior or exterior of the buildings that is in good condition does not need to be abated prior to demolition. However, any flaking or peeling LBP shall be removed by a licensed lead abatement contractor and waste shall be disposed as required by Federal, State, and local regulations. LBP may be disposed as construction debris as long as it remains on the substrate.
- The demolition contractor shall implement precautions to comply with OSHA 29 CFR 1926.62, Lead in Construction.

The following precautions shall be taken prior to any demolition activities that would disturb LBP.

- Materials containing LBP shall not be cut, sanded or drilled.
- Prior to initiating demolition activities that would disturb LBP, the area shall be wet to prevent possible release into the air.
- Dust shall be removed with a HEPA vacuum or wet wiped with disposable towels.

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### 2.3.9 Hydrology and Water Quality

Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Violate any water quality standards or waste discharge requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f) Otherwise substantially degrade water quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Place housing within a 100-year flood hazard area, as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
j) Expose people or structures to a significant risk of loss, injury or death involving inundation by seiche, tsunami, or mudflow?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

#### Discussion:

- a) **Less Than Significant Impact.** Section 303 of the federal Clean Water Act requires states to develop water quality standards to protect the beneficial uses of receiving waters. In accordance with California's Porter/Cologne Act, the Regional Water Quality Control Boards (RWQCBs) of the State Water Resources Control Board (SWRCB) are required to

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develop water quality objectives that ensure their region meets the requirements of Section 303 of the Clean Water Act.

San Marino is within the jurisdiction of the Los Angeles RWQCB. The Los Angeles RWQCB adopted water quality objectives in its Basin Plan (Los Angeles RWQCB, 1994). The Basin Plan is designed to ensure stormwater achieves compliance with receiving water limitations. Thus, stormwater generated by a development that complies with the Basin Plan does not exceed the limitations of receiving waters, and thus does not exceed water quality standards.

Under Section 402 of the Clean Water Act, known as the National Pollutant Discharge Elimination System (NPDES), municipalities are required to obtain permits for the water pollution generated by stormwater in their jurisdiction. Los Angeles County and 85 incorporated Cities therein, including the City of San Marino, obtained an Municipal Separate Storm Sewer Systems (MS4; Permit # 01-182) from the Los Angeles RWQCB. Under the MS4, each permitted municipality is required to implement the Stormwater Quality Management Program (SQMP).

In addition, as required by the MS4 permit, the City of San Marino has adopted a Standard Urban Stormwater Mitigation Plan (SUSMP) ordinance to ensure new developments comply with the SQMP. The City's SUSMP ordinance requires new developments to implement Best Management Practices (BMPs) that reduce water quality impacts, including erosion and siltation, to the maximum extent practicable. This ordinance also requires most new developments to submit a plan to the City that demonstrates how the project will comply with the City's SUSMP and identifies the project-specific BMPs that will be implemented. The proposed reservoir replacement is not one of the project categories identified in the Los Angeles County MS4 Permit as requiring a SUSMP.

During operation, the proposed replacement reservoir and associated facilities would not be point source generators of water pollutants. The proposed project would generate typical, urban, nonpoint-source pollutants that could be collected by storm water runoff, such as trash, vehicle fluids, etc. Given the type and size of the project, the storm water pollutants generated onsite would be minimal and would be the same as existing conditions. Therefore, the proposed project would not violate any water quality standards or waste discharge requirements, and impacts on water quality would be less than significant.

- b) **No Impact.** The proposed project would not change the quantity of groundwater through addition or withdrawal of the underlying aquifer. The amount of water reaching the groundwater basins from the site is negligible given the interference of developed land and since most of the flows would be directed into the existing stormwater drainage system. Since the project is a replacement of an existing reservoir, the extent of onsite impervious surfaces would remain essentially the same.

Existing Well No. 2 (located at the front of the property) would continue to extract groundwater. Well No. 2 is approximately 550 feet deep and capable of producing approximately 800 gallons/minute. The continued use of this well would withdraw water from the groundwater basin. However, the project would not result in an increase in the rate of withdrawal and this withdrawal would not substantially deplete the groundwater basin and is well within the City's existing water rights. Therefore, the proposed project

would have no impact on groundwater supply or recharge.

c) **Less Than Significant Impact.** The project would not change the existing absorption rates, drainage patterns or the rate and amount of surface runoff because the site has already been developed and the general drainage patterns would be maintained with implementation of the proposed project. The proposed project would not focus or concentrate any stormwater flows and would not direct stormwater over exposed soils. During construction, the contractor would comply with the following requirements:

1. Sediments generated on the project site shall be retained using adequate Treatment Control or Structural BMPs.
2. Construction-related materials, wastes, spills or residues shall be retained at the project site to avoid discharge to streets, drainage facilities, receiving waters, or adjacent properties by wind or runoff.
3. Non-storm water runoff from equipment and vehicle washing and any other activity shall be contained at the project site.
4. Erosion from slopes and channels shall be controlled by implementing an effective combination of BMPs (as approved in Regional Board Resolution No. 99-03), such as the limiting of grading scheduled during the wet season; inspecting graded areas during rain events; planting and maintenance of vegetation on slopes; and covering erosion susceptible slopes.

Compliance with these requirements would ensure that construction of the proposed project would not result in substantial erosion or siltation. After construction, the proposed project would have no effect on drainage or stormwater flows.

d) and e) **Less Than Significant Impact.** The site is located within a suburban portion of San Marino, is effectively flat, and contains no streams, rivers, discernable drainages, or notable storm drain improvements. Storm drainage on the project site is currently directed to the storm drain infrastructure in the surrounding streets (i.e., curb and gutter, storm drains, etc.). The project would not noticeably change the amount of stormwater runoff generated onsite, since the site is currently covered with impervious materials (e.g., asphalt, rooftops, the existing reservoir, etc.). Since the project would not result in a measurable change in stormwater flows, the existing curb and gutter system is adequate to handle stormwater flows from the improved site. The project would not substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site and would not cause an exceedance of the capacity of existing or planned stormwater drainage systems. Drainage impacts would therefore be less than significant.

f) **No Impact.** See answers to (a) to (c), above.

g) **No Impact.** The project is the replacement of a concrete water reservoir with another of similar capacity and function. The project site is not located within a 100-year flood hazard area, and no housing is proposed. There are no special flood hazard areas in the vicinity of the project. Therefore, the proposed project would have no impact on housing within a flood hazard area.

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- h) **No Impact.** See response to (g), above.
- i) **Less Than Significant Impact.** The project area is not located within designated 100 or 500 year flood zones. It is not in the vicinity of a levee or dam. Surrounding uses are developed, residential lots and no water bodies are immediately adjacent to the project area. The replacement reservoir would store approximately 1.2 MG of water. The possibility of flooding from rupture of the proposed reservoir would be reduced by adherence to standard seismic upgrade construction practices and a regular inspection and maintenance program. Furthermore, the proposed project would replace a deteriorating reservoir with a new reservoir built to current seismic standards, thereby reducing the risk of flooding as a result of rupture of the reservoir. The impact of the proposed project related to flooding would be less than significant.
- j) **No Impact** The project area is not near a large water body or unstable hillside and thus would not result in or expose people to inundation by a seiche, tsunami or mudflow.

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### 2.3.10 Land Use and Planning

Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

#### Discussion:

a) **No Impact.** The proposed project would not disrupt or divide the physical arrangement of an established community. The parcel has been in continuous use as a water storage reservoir since the 1920s. Therefore, there would be no impact on established communities.

b) **No Impact.** The proposed project would not conflict with environmental plans or policies as it would be a continuation of an existing land use previously established on the property. Local governmental agencies play limited roles in regulating water treatment and conveyance facilities. Such facilities are regulated under the Public Utilities Commission pursuant to Water Code Section (Section 6025-6031) of the State Public Utilities Code. Section 6026 of the PUC specifically states:

“No city or county has authority, by ordinance enacted by the legislative body thereof or adopted by the people under the initiative power, or otherwise, to regulate, supervise, or provide for the regulation or supervision of any dams or reservoirs in this state, or the construction, maintenance, or operation thereof, nor to limit the size of any dam or reservoir or the amount of water which may be stored therein.”

The zoning designation for the project site and surrounding properties is R-1 (Residential). The proposed project is a legally-established use which seeks only to replace the existing reservoir and appurtenant facilities with safer and upgraded facilities without encroaching onto or encompassing additional parcels. All work would be limited to an upgrade of the existing reservoir use. This use is permitted by the City of San Marino, and the proposed project would be subject to the City’s design review process. Therefore, the proposed project would have no impact on land use.

c) **No Impact.** The project site is not located within any critical habitat and/or habitat conservation plan area. Therefore, construction and operation of the proposed reservoir would have no impact on habitat or natural community conservation planning.

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### 2.3.11 Mineral Resources

Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**Discussion:**

a) and b) **No Impact.** The project site is not located in a mineral recovery area or zone, and mineral resources required for the project would be limited to the raw materials necessary to make limited volumes of concrete. Therefore, the proposed project would not result in loss of locally important mineral resources, and would have no impact on mineral resources.

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### 2.3.12 Noise

Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

#### Discussion:

- a) **Less Than Significant with Mitigation.** The San Marino Noise Control element of the Municipal Code (Chapter 14, Article 04) establishes Noise Standards that protect residential areas. The Noise Standards are designed to control unnecessary, excessive and annoying sounds from noise sources on private property such as parking lots, mechanical equipment, and stationary sources from impacting adjacent residential areas. The Noise Standards cannot be applied to vehicles when traveling on public roadways. Federal and State laws preempt control of the mobile noise sources on public roads.

The City of San Marino Noise Standards are presented below:

<b>Ambient Base Noise Level</b>		
<u>Zone</u>	10:00 P.M. To 7:00 A.M.	7:00 A.M. To 10:00 P.M.
R-1 Residential	45	55
R-1 Residential corridor	45	60
Commercial	50	65

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*Noise levels shall not exceed the ambient base level by more than ten (10) dB, when measured at any adjacent privately owned residential property line.*

*In addition, it shall be unlawful for any person to wilfully make or continue or wilfully cause to be made or continued any noise from any source or place at a level which exceeds a decibel level measured at any adjacent residential property line of:*

- *65 dB from any parcel in an R-1 Zone*
- *75 dB from any parcel in a C-1 Zone, Park and Recreational Zone or Historical and Cultural Zone*

*It shall be unlawful for any person within a residential zone, or within a radius of five hundred feet (500') therefrom, to operate equipment or perform any outside construction or repair work on buildings, structures or projects or to operate any pile driver, steam shovel, pneumatic hammer, derrick, steam or electric hoist or other construction type device on construction requiring a building, plumbing, electrical or grading permit in such a manner that noise is produced which would constitute a violation of section 14.04.05 of this article unless, beforehand, an additional permit therefor has been duly obtained from the planning and building director.*

*Notwithstanding any other provision of this Article, it shall be unlawful for any person to wilfully make or continue or wilfully cause to be made or continued any noise in excess of fifty two (52) dB when measured within any classroom in a public or private school during hours that said classroom is being used for instruction.*

The proposed project would generate noise from temporary construction activities and from the proposed booster pumps.

### Construction Noise - Onsite Activities

Construction noise represents a short-term impact on ambient noise levels. Noise from the proposed project would be generated by construction equipment including trucks, graders, bulldozers, concrete mixers and potentially portable generators. The peak noise level for most of the equipment that would be used during construction is 70 to 95 dBA at a distance of 50 feet. Noise levels at further distances would be less than this; for example, at 200 feet, the peak construction noise levels would range from 58 to 83 dBA.

The nearest sensitive land uses are the existing single-family homes immediately adjacent the project site. Potential construction operations could occur as close as 20 feet from the nearest residential homes. Based on this distance, the worst-case unmitigated peak (L<sub>max</sub>) construction noise levels could be 97 dBA for very short periods. However, as the construction is moved towards the center of the project site, the noise levels would be less. The average noise levels are typically 5 to 15 dB lower than the peak noise levels. Average noise levels (L<sub>50</sub>) at the nearest existing residential buildings could be in the range of 71 to 82 dBA (L<sub>50</sub>).

Construction hours are regulated by Chapter 25, Article 01 of the San Marino Municipal Code, which limits construction to between 7 a.m. and 6 p.m., Monday through Friday, and 9 a.m. and 4 p.m. on Saturday. Given the type of proposed construction, the project is expected to comply with these time restrictions. The only exception would be during

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concrete pouring. Concrete would not be poured continuously for 24 hours, but for a project of this scale, would typically be poured from dawn to dusk (as early as 6 a.m. and as late as 9 p.m.). During the concrete pour operations, the noise levels could be sufficiently high to cause speech interference and sleep disturbance during the early morning (before 7 a.m.). As a result, mitigation is included to require the construction equipment, particularly concrete mixers, to be located towards the center of the project site, and far from the surrounding homes when possible. Also, a written permit from the City would be necessary if the concrete pour phase is to operate outside the allowable construction hours. In addition, due to the duration of the construction (up to 18 months) and the proximity of residences to the site, mitigation in the form of a temporary noise barrier would be implemented (**NOI-1**). Additional mitigation measures (**NOI-2** through **NOI-4**) are included to clearly define construction hours and to require that construction equipment is fitted with proper mufflers. Compliance with these mitigation measures would reduce onsite construction noise impacts to a less than significant level.

### Booster Pump Noise

The proposed pump station would house two 1,400 gpm, 100 HP booster pumps. The facility would comply with the City of Marino's more stringent nighttime noise limit. The indoor to outdoor noise reduction characteristics of a building are determined by combining the transmission loss of each of the building elements. The critical building elements are typically the roof, walls, windows, doors, and insulation. The total noise reduction achieved is dependent upon the transmission loss of each element, and the surface area of that element in relation to the total surface area of the room. Room absorption is the final factor used in determining the total noise reduction. Compliance with mitigation measure **NOI-5** would reduce noise impacts from operation of the proposed project to less than significant levels.

- b) **Less than Significant Impact.** There are no vibration standards established by the City of San Marino. Regardless, the proposed project would neither generate, nor expose people to excessive groundborne vibrations or groundborne noise levels. Construction of the project may temporarily generate vibrations, particularly during demolition of the existing reservoir and during compaction of fill material. However, since demolition activities would be limited by the City's allowable construction hours (between 7 a.m. and 6 p.m. Monday-Friday and 9 a.m. and 4 p.m. on Saturday) and would be short-term, vibration impacts would be less than significant.
- c) **Less than Significant With Mitigation.** See the response to item (a), above. The proposed booster pumps have the potential to affect ambient noise levels. However, with the pumps housed in an enclosed concrete structure with other noise reducing characteristics, noise impacts from the proposed booster pumps would be less than significant.
- d) **Less than Significant With Mitigation.** See the response to item (a), above. Construction of the proposed project has the potential to result in a substantial temporary increase in ambient noise levels. However, with the incorporation of Mitigation Measures **NOI-1** through **NOI-4**, noise impacts from construction of the proposed project would be less than significant.
- e) and f) **No Impact.** The proposed project is not located within an airport land use plan or

within 2 miles of a public airport or private airstrip. In addition, the project does not include new habitable structures and would not change land use. Therefore, there would be no impact on airports.

### Mitigation Measures

With incorporation of Mitigation Measure **NOI-1** through **NOI-5**, impacts from construction and operation of the proposed project related to noise would be reduced to less than significant levels.

**NOI-1 Noise Mitigation Plan.** Prior to the start of construction of the proposed reservoir, the construction contractor shall develop a noise mitigation plan based on an updated estimate of construction equipment and schedule. The objective of the mitigation plan shall be to reduce interior noise levels during project construction to within acceptable limits as outlined in the City of San Marino municipal code. The mitigation plans shall detail measures to limit construction noise, including:

- Equip all construction equipment, fixed and mobile, with properly operating and maintained noise mufflers and intake silencers, consistent with manufacturers' standards.
- Place all stationary construction equipment as far as feasible from near-site residential receptors and situate them so that emitted noise is directed away from off-site sensitive receptors.
- Install temporary sound walls or acoustic blankets with a height as required to meet required noise standards and to reduce the residents' view of the construction effort. The surface of the sound walls or acoustic blankets shall present a solid face from top to bottom without any openings or cutouts.
- Consider quieter construction procedures and/or equipment.

**NOI-2 Control of Construction Hours.** Construction activities shall only be permitted to take place between the hours of 7 a.m. and 6 p.m. on Monday through Friday, and 9 a.m. and 4 p.m. on Saturday, except with the express written permission of the Administrative Authority of the City of San Marino, or in case of emergency.

**NOI-3 Hours of Concrete Pouring.** If concrete pouring cannot be completed during normally allowable construction hours (between 7 a.m. and 6 p.m. Monday-Friday and 9 a.m. and 4 p.m. on Saturday), expressed written permission from the City of San Marino Community Development Director shall be required to extend allowable construction hours. In addition, during concrete pours, construction equipment, specifically concrete mixers, shall be located towards the center of the project site, and as far from the surrounding homes as possible to the satisfaction of the City of South Pasadena Public Works Director.

**NOI-4 Equipment Mufflers.** During all phases of construction, the project contractor shall equip applicable construction equipment with properly operating and maintained mufflers consistent with manufacturers' standards.

**NOI-5 Pump Station Building.** The pump station building shall provide sufficient inside-to-outside building attenuation to reduce the noise to acceptable levels. This shall be achieved through a combination of concrete walls and roof, acoustic louvers, hollow metal doors, and any other noise reduction characteristics as required to meet the noise ordinance.

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### 2.3.13 Population and Housing

Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**Discussion:**

- a) **No Impact.** The proposed project is a reservoir and pumping station replacement project that would not increase the population of the City of San Marino or the City of South Pasadena. The project would not increase the demand for housing as it would serve the existing population. Therefore, the proposed project would not cause any impacts to local population levels, induce substantial growth, or displace existing housing. No impacts to population and housing would occur.
- b) **No Impact.** No housing would be displaced by the proposed project. Therefore, no impacts would occur.
- c) **No Impact.** No individuals would be displaced by the proposed project. Therefore, no impacts would occur.

## Section 2 – Environmental Analysis

### 2.3.14 Public Services

Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
i) Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ii) Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iii) Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iv) Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
v) Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

#### Discussion:

a)-i) **No Impact.** The closest Fire Station to the project site is the Alhambra Fire Station located 0.90 miles from the site. The San Marino Fire Department station is located 1.65 miles from the site. Other nearby stations can also provide support when necessary. The proposed project would not alter any emergency access and would improve water supplies available for fighting fires. Therefore, the project would have no impact on fire protection services.

a)-ii) **Less Than Significant Impact.** Police protection for the project area is provided by the City of San Marino Police Department. The project is expected to be adequately served by existing resources of the San Marino Police Department, and would not require new or physically altered facilities for police protection. Therefore, the impact on police service would be less than significant.

a)-iii) **No Impact.** The project area is located in the San Marino Unified School District. The project would not result in an increase in residential area, or increased demand on existing schools. The project would not require new or physically altered school facilities. Therefore, the proposed project would have no impacts on schools.

a)-iv) **No Impact.** The project does not include construction of new recreational facilities such as trails. No existing parks would be affected and no parks would face an increase in use during construction or operation of the project. Therefore, the proposed project would have no impacts on parks.

a)-v) **No Impact.** The project does not include construction of housing or employment centers and would not induce population growth. Aside from the improvement in potable water service, the proposed project would have no impact on public facilities or services.

## Section 2 – Environmental Analysis

### 2.3.15 Recreation

Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

#### Discussion:

- a) **No Impact.** The proposed project involves the demolition of an existing reservoir and the installation of a new reservoir of similar size. The proposed project would not directly or indirectly cause population growth. Therefore, the proposed project would not increase the use of any neighborhood or regional parks or facilities, and would have no associated impacts on recreational facilities.
- b) **No Impact.** The proposed project involves the replacement of an existing reservoir and does not include the development of any recreational facilities. In addition, the project would not lead to the need for the construction or expansion of any recreation facilities, and would have no related adverse physical impacts to the environment.

## Section 2 – Environmental Analysis

### 2.3.16 Transportation and Traffic

Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Conflict with an applicable congestion management program, including but not limited to, level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Result in inadequate emergency access?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

#### Discussion:

a and b) **Less than Significant with Mitigation.** The proposed project consists of replacing the existing Graves Reservoir and accessory facilities. Since the project would not change the use of the site or increase the need for operation, maintenance, or service personnel to access the site, the project would not result in any long term increases in vehicle trips generated by the facility. However, during construction, the project would generate an increase in vehicle trips from construction workers accessing the site, haul trucks exporting demolished and excavated material, material deliveries and concrete deliveries.

The construction site is one block north of Huntington Drive, which is considered an intermediate truck haul route per San Marino Municipal Code Chapter 15.06.02. Construction trip distribution is mainly predicated on the origins and destination of materials, equipment and hauling needed for the project in relation to accessibility to the regional roadway network and designated truck routes in adjacent cities. The closest truck route access to the freeway system is along Atlantic Boulevard (City of Alhambra, Municipal Code Chapter 11.16.010) to the I-10 Freeway. The closest arterial street that

connects the project to the designated truck route is Huntington Drive.

Pursuant to the 2010 Los Angeles County Congestion Management Plan “Guidelines for CMP Transportation Impact Analysis”, projects that generate fewer than 50 peak hour trips are not required to conduct a detailed traffic impact analysis.

The number of construction trips forecast to be generated by this project is as follows: up to 20 trips/day for construction vehicles/delivery trucks and up to 10 trips/day for construction workers commuting to the site. Specifically, a maximum of 30 trips/day are expected on a weekday. Since these trips would be distributed throughout the day, peak hour trips would be significantly less and would not exceed the minimum guideline for conducting a detailed traffic impact analysis of 50 trips in a peak hour.

Prior to construction, alternative construction haul routes shall be considered and evaluated to determine the preferred route. The evaluation criteria include factors such as distance along residential streets, number of affected homes, Level-of-Service at major turning points, and number of required stops or turns. This evaluation shall also include factors such as directness, proximity to schools, and potential for disturbance to the traveling public. The chosen construction haul route shall minimize the potential for adverse factors, as follows:

- Shortest distance to arterial roadway network
- Fewest number of residences along route
- Fewer expected delays at intersections
- Fewer required stops and turns
- Most direct route to project site from major streets
- No schools on route
- Less potential for disturbing traveling public

Implementation of the recommended peak hour restrictions included in the construction management plan, as outlined in Mitigation Measure **TR-1**, would ensure that a significant number of peak hour trips would not be generated.

No detours or road closures are anticipated for the project, since all work would occur off of the street and loading would occur out of travel lanes. Therefore, public and emergency vehicle access would not be impacted. The construction related trips would occur on a temporary basis for the duration of the project. The proposed project would have no long-term traffic impacts.

With implementation of a Construction Management Plan and establishment of a construction traffic route, as required by Mitigation Measures **TR-1** and **TR-2**, the proposed project would have a less than significant impact on the surrounding roadway network pursuant to the standards of the City of South Pasadena, the City of San Marino, and the Los Angeles County Congestion Management Plan.

- c) **No Impact.** There are no public airports located in the vicinity of the project area. Additionally, the project does not involve structures of significant height that would result in a change in air traffic location. The project would not result in any increase in air traffic levels. Therefore, no impacts would occur.

- d) **No Impact.** All improvements related to the proposed Graves Reservoir Improvement Project would be within the confines of the project site. The proposed project would not increase hazards in the area due to a design configuration, as no alterations would occur to the adjacent roadway, other than for the installation of the proposed driveway.
- e) **Less than Significant with Mitigation.** Construction and operation of the proposed project would not place any permanent or temporary physical obstructions within the travel lanes of any public streets. During construction there is a potential for construction-related vehicles to be parked along the street and a potential for construction staging to occur along the street. With implementation of mitigation measure **TR-1**, the impact on emergency access would be less than significant.
- f) **No Impact.** The proposed project would not conflict with adopted policies, plans or programs supporting alternative transportation. Operation of the project would have no impact on alternative transportation.

### Mitigation Measures

**TR-1 Construction Management Plan.** The City of South Pasadena shall require the contractor to prepare and implement a Construction Management Plan to the satisfaction of the City of South Pasadena and the City of San Marino. Specifically, the intent of this plan is to minimize disturbance to the neighborhood, identify those activities to be monitored, and make the contractor responsible for failure to adhere to the requirements. The elements of the Construction Management Plan shall include (but not be limited to) the following:

- Require contractor to obtain all necessary hauling, traffic control and/or transportation permits.
- Require contractor to maintain a 24-hour hotline for complaints and questions from the public.
- Designate a construction haul route.
- Require any large vehicles not classified as passenger vehicles or light trucks to use the haul route.
- Limit hauling to a maximum allowable trips per day as designated per City requirements.
- Allow hauling and deliveries between 8 a.m. and 4 p.m. on weekdays only and no city holidays, unless otherwise authorized by an approved revision to the Construction Management Plan.
- Require all public streets and driveways to remain open at all times, or submit a traffic control plan for any temporary lane closures to be approved by respective cities.
- Prohibit obstruction of street traffic, sidewalks or access to adjacent residences at any time.
- Require loading of all exported materials and earthwork to be conducted onsite unless authorized by an approved revision to the Construction Management Plan.
- Require removal of any delivered materials and delivery trucks from streets immediately upon delivery.

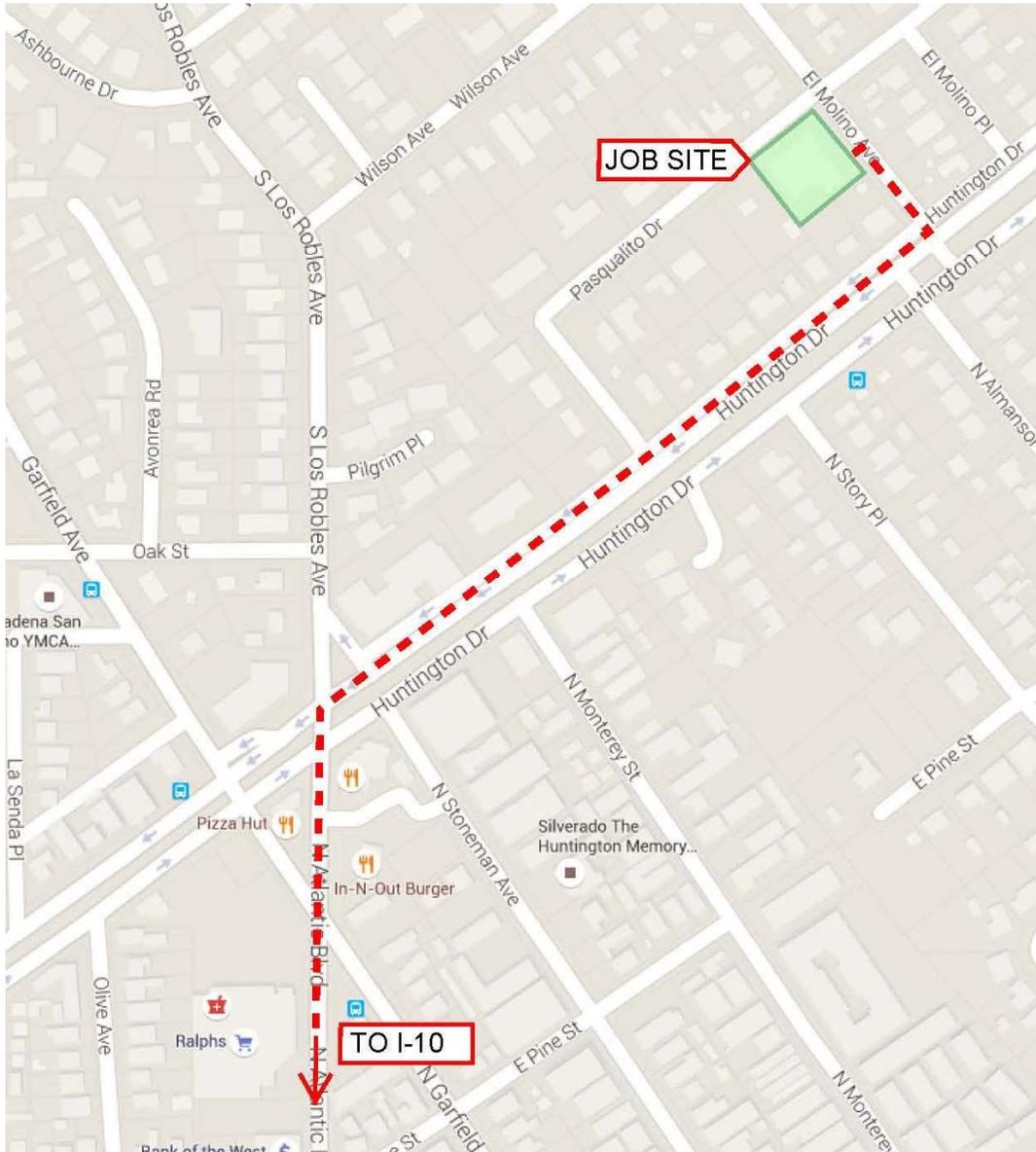
## Section 2 – Environmental Analysis

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- Require contractor to notify hauling and delivery companies of construction haul route prior to such activities.
- Require notification to neighbors along haul route prior to the start of any large hauling operation or any construction activities outside of designated hours, as well as notification to residential properties located within 300 feet of any construction activities that occur outside of normal business hours or generate significant or sustained noise.
- Require notification to the San Marino Unified School District, local police and public works departments prior to start of construction, prior to any lane closures, and prior to any hauling or deliveries outside of designated hours.
- Prohibit staging or queuing of trucks on any residential streets except directly in front of project site (radio-dispatch and/or approved remote staging locations may be used to accomplish this requirement). At no time shall construction vehicles, materials or equipment obstruct residential driveways.
- Require contractor to provide an off-street parking area for construction workers of not less than 10 spaces, unless otherwise approved. If a remote parking area is used, require contractor to provide personnel transportation service for workers to/from the project site. Any remote parking area shall be approved by the cities of South Pasadena and San Marino.
- Require construction vehicles to fully utilize off-street parking prior to using street parking.
- With City of San Marino approval, certain on-street parking areas may be designated for project related vehicles. Require the contractor to post appropriate temporary parking signs to designate any approved street parking area or prohibitions near the construction site.
- Encourage contractors and construction workers to carpool to the construction site.
- Specify penalties for failure to comply with Construction Management Plan.
- Provide for monitoring and enforcement of the Construction Management Plan to the satisfaction of the cities of South Pasadena and San Marino.
- The location of any construction trailers shall be subject to the approval of the cities of South Pasadena and San Marino.
- Provide for revisions to the Construction Management Plan upon approval by both cities.

**TR-2 Construction Haul Route.** All construction-related vehicle trips shall utilized the preferred construction haul route to the project site with the outbound route to be the opposite as approved by the applicable regulating authorities. **Figure 12** depicts the preliminary construction haul route.

**Figure 12**  
**Preliminary Construction Haul Route Alternative**



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### 2.3.17 Utilities and Service Systems

Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
g) Comply with federal, state, and local statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

#### Discussion:

- a) **No Impact.** The proposed project involves the replacement of the Graves Reservoir and the installation of a new reservoir and appurtenant water treatment facilities. Water discharges would be the same as existing conditions and limited to infrequent discharges of water to the stormdrain system. Therefore, the proposed project would not exceed the wastewater treatment requirements of the Los Angeles RWQCB, and would have no associated impacts.
- b) **No Impact.** The proposed project involves the replacement of the Graves Reservoir and the installation of a new reservoir and water treatment facility. The objectives of the proposed facilities are to replace an aging reservoir, built in the 1920s, that needs upgrading to meet current seismic standards and address deterioration. Since the new reservoir would be filled by an existing onsite well, the proposed project would not require or result in the construction or expansion of offsite water treatment facilities. No wastewater is generated onsite. Therefore, the proposed project would have no impacts on offsite water or wastewater facilities.

## Section 2 – Environmental Analysis

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- c) **No Impact.** With installation of the new reservoir, drainage from the project site would not be substantially altered over existing conditions. The project does not include new or expanded stormwater facilities. Therefore, the proposed project would have no impact on stormwater facilities.
- d) **No Impact.** The proposed project would replace the existing Graves Reservoir and provide a water treatment facility to maintain potable water quality. The proposed project would not increase the population of the cities of San Marino or South Pasadena, and thus, would not increase the demand for water. In addition, the project would increase the reliability of the City of South Pasadena's water storage system. Therefore, the proposed project would have no adverse impact on the availability of water supplies.
- e) **No Impact.** The project involves the construction of a new water storage facility and pumping station, and would not necessitate or trigger the need for additional wastewater treatment facilities. The new reservoir would have a similar capacity as the existing reservoir. Therefore, the newly installed tank would serve the same population as the existing facility, and the project would have no impact on wastewater treatment.
- f) **Less Than Significant Impact.** The demolition of the existing reservoir and associated structures would generate approximately 6,289 cubic yards of inert waste material. Waste removal from the project site during construction, including transport to a landfill, would be regulated by Chapter 9, Article 07, San Marino Municipal Code. The contractor shall be required to adhere to the solid waste collection and recycling requirements of the Code. With adherence to the City's waste removal and recycling requirements, the impact on solid waste would be less than significant.
- g) **No Impact.** The project would comply with all federal, state, and local statutes and regulations related to solid wastes.

**2.3.18 Mandatory Findings of Significance**

Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Does the project have the potential to achieve shortterm, to the disadvantage of long-term, environmental goals?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Does the project have impacts that are individually limited, but cumulatively considerable (“cumulatively considerable” means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, effects of other current projects, and the effects of probable future projects.)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Discussion:**

- a) **Less than Significant with Mitigation:** There are no sensitive biological resources present on the project site or in the immediate vicinity of the project. Impacts to nesting birds, if any, would be mitigated by implementation of mitigation measure **Bio-1**. Cultural resources are not known for the project site. Disturbance to currently unknown subsurface cultural resources during project construction would be mitigated to less than significant levels by implementation of measures **CR-1**, **CR-2** and **CR-3**.
- b) **No Impact.** The goal of the project is to be part of the long-term solution for water supply in South Pasadena. There are no short-term goals related to the project that would be disadvantageous to this long-term goal.
- c) **Less than Significant Impact:** Cumulatively with other potable water projects by South Pasadena and other water providers in the region, the project would be beneficial for water supply. Since there are no other known construction projects planned in the immediately area of the reservoir, the cumulative construction-related effects would be less than significant.
- d) **Less than Significant with Mitigation:** Since the project site is in a residential neighborhood, noise generated during construction has the potential to impact nearby residential receptors. Mitigation measures **NOI-1** through **NOI-5** would reduce impacts on noise to less than significant levels. Impacts from temporary construction traffic in the

## Section 2 – Environmental Analysis

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project area would be reduced to less than significant levels with implementation of measures **TR-1** and **TR-2**. Overall, the goal of the project is to reliably store potable water - a beneficial effect on human beings.

# Section 3

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**3.2 PREPARERS OF THE INITIAL STUDY**

**PREPARED BY:**

**CITY OF SOUTH PASADENA, Public Works Department**  
1414 Mission Street, South Pasadena, California 91030-3298  
John Wolitarsky, Water Capital Project Manager

**TECHNICAL ASSISTANCE PROVIDED BY:**

**MWH Americas, Inc.**  
Miko Aivazian, PE, Project Manager  
Matthew Huckaby, PE, Project Engineer  
Sarah Garber, PMP, CPP, Technical Reviewer

**3.3 ACRONYMS AND ABBREVIATIONS**

<b>ACM</b>	Asbestos-containing Materials
<b>APE</b>	Area of Potential Effect
<b>AQMP</b>	Air Quality Management Plan
<b>ASTM</b>	American Society for Testing and Materials
<b>BMPs</b>	Best Management Practices
<b>Cal/EPA</b>	California Environmental Protection Agency
<b>CARB</b>	California Air Resources Board
<b>CEQA</b>	California Environmental Quality Act
<b>CIWMB</b>	California Integrated Waste Management Board
<b>CRHR</b>	California Register of Historical Resources
<b>dBA</b>	Decibel, A-weighted scale
<b>EDR</b>	Environmental Data Resources, Inc.
<b>EIR</b>	Environmental Impact Report
<b>ESA</b>	Endangered Species Act
<b>GHG</b>	Greenhouse Gas
<b>Farmland</b>	Prime Farmland, Unique Farmland, or Farmland of Statewide Importance
<b>FEMA</b>	Federal Emergency Management Agency
<b>FMMP</b>	Farmland Mapping and Monitoring Program
<b>Hwy</b>	Highway
<b>IS</b>	Initial Study
<b>LAFD</b>	Los Angeles Fire Department
<b>LAPD</b>	Los Angeles Police Department
<b>LBP</b>	Lead-based Paint
<b>Leq</b>	Equivalent noise level
<b>LUST</b>	Leaking Underground Storage Tank
<b>MLD</b>	Most Likely Descendant
<b>MS4</b>	Municipal Separate Storm Sewer Systems
<b>NAHC</b>	Native American Heritage Commission
<b>NHPA</b>	National Historic Preservation Act
<b>NO<sub>3</sub></b>	Nitrate

<b>NPDES</b>	National Pollutant Discharge Elimination System
<b>NRHP</b>	National Register of Historic Places
<b>PCE</b>	Tetrachloroethylene
<b>PM10</b>	particulate matter 10 microns or less in diameter
<b>PM2.5</b>	particulate matter 2.5 microns or less in diameter
<b>RWQCB</b>	Regional Water Quality Control Board
<b>SCAB</b>	South Coast Air Basin
<b>SCAQMD</b>	South Coast Air Quality Management District
<b>SCCIC</b>	South Central Coast Information Center
<b>SO<sub>x</sub></b>	sulfur oxides
<b>SNA</b>	Significant Natural Areas
<b>SQMP</b>	Stormwater Quality Management Program
<b>SR</b>	State Route
<b>SUSMP</b>	Standard Urban Stormwater Mitigation Plan
<b>SWPPP</b>	Storm Water Pollution Prevention Plan
<b>SWRCB</b>	State Water Resources Control Board
<b>TAC</b>	Toxic Air Contaminants
<b>TCE</b>	Trichloroethylene
<b>UST</b>	Underground Storage Tank
<b>VOC</b>	volatile organic compound

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**Appendix A**  
**Tree Survey Report**

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January 27, 2016

City of South Pasadena  
**ATTN: Gonzalo Maravilla**  
825 Mission Street  
South Pasadena, CA 91030

**RE: Graves Reservoir**

Mr. Maravilla,

Pursuant to your request this report has been prepared in order to present the findings from my evaluation of the trees at the Graves Reservoir, 2225 El Molino in San Marino. The purpose of the evaluation was to assess the health and condition of the trees. The site was visited on Tuesday, October 20, 2015 and all comments and discussion that follows are based on my observations while on the site.

A Level 1 risk assessment and detailed health evaluation were used in this assessment. The criteria for this level of assessment is detailed by *ANSI A300 (Part 9)-2011 Tree Risk Assessment, a. Tree Structure Assessment* and *A Photographic Guide to the Evaluation of Hazard Trees (Matheny & Clark)* and includes a 360-degree ground based visual inspection of the tree crown, trunk, trunk flare, above ground roots, and site conditions around the tree in relation to all potential targets.

**OBSERVATIONS & GENERAL DISCUSSION:**

The Graves reservoir contains several different species of trees of mature size. Reconstruction may occur in the near future and a survey of the site for effects of construction on trees and the habitat was requested, as well as recommendation for maintenance. This report includes images taken during that visit, describes current conditions, and notes trees of importance. Trees will be numbered in the report as they were observed, and if they have Arbor Access addresses, those will be noted.

Tree #1 *Carya illinoensis*, Pecan, Arbor Access F-16, Fig. 1

This tree is growing on the south side of the reservoir, 19" DSH and 25' in height. Utility company contractors have repeatedly topped this tree due to power lines running over the top of the tree. Topping is not an acceptable practice and results in many weakly attached branches that are prone to failure as they grow in size. Also, the resulting cuts can increase the chance of rot spreading into the tree and cause a failure as well. See Fig. 1. Under normal growing conditions this tree would exceed 60' in height and 40' spread or more. There is no room for this tree to attain that size at this location.



Fig 1. Tree #1.

Tree #2 *Carya illinoensis*, Pecan, Arbor Access F-15, Fig. 2

Like tree #1, this Pecan is also growing under the same conditions on the south side, under powerlines, and being topped. Both trees are growing in critical access areas for construction equipment when the reconstruction occurs. Both would have compacted soil around them which contributes to a tree's decline. In addition, if a tree protection zone were to be erected to preserve the trees from the effects of construction, the site would lack necessary level ground in which to work. See Fig. 2. It is a multi-trunk tree totaling 40" DSH and 30' in height.



Fig. 2 Tree #2

Tree #3 Quercus suber, Cork Oak, Arbor Access F-19, Fig. 3

This Cork Oak is located on the northwest side of the reservoir. It is fairly newly planted, 5" DSH and less than 15' tall. It is in good health. It has a lean and is suppressed by a nearby private Pecan tree. It is in need of corrective pruning and should not be adversely affected during construction.



Fig. 3 Tree #3

Trees #4 through 8 *Ulmus parvifolia*, Chinese Elm, Arbor Access F-1 through F-5, Fig. 4

The Chinese Elms at the northeast corner of the reservoir are all less than 24" DSH and less than 45' tall. They have been crown reduced during tree maintenance activities due to periodic branch failures, for which this species is known. They were originally planted to serve as a screen to block the view of the reservoir for area residents. City of San Marino Silk Oak trees line the street side and crowd these trees from growing to their typical size. The Chinese Elms were planted much too close to together for the mature spread that they can attain. Keeping them in this current state would require ongoing crown reduction pruning to manage their size and prevent further branch failures. See Fig. 4.



Fig. 4 Trees #4-8 Chinese Elms, (uniform size with the white bark to the right of the stop sign).

Tree #9 Ulmus parvifolia, Chinese Elm, Arbor Access F-6, Fig. 5

This Chinese Elm lost most of the canopy due to a failure. What is left is a tall stump. See figure 5.



Fig. 5 Tree #9 Showing lost top and brown stake next to the tree.

Trees #10-16, Ulmus parvifolia, Chinese Elm, Arbor Access F-7, and Platycladus orientalis, Oriental Arborvitae, Fig. 6

Tree #10 is a Chinese Elm that has the same size and characteristics of trees #4-8, are all less than 24" DSH and less than 45' tall, though unlike the others is showing some dieback in the canopy, possible the result of disease though as of this date the cause has not been determined. Trees #11-16 are arborvitae shrubs currently measuring up to 12" DSH and 18' tall, and were planted as screening many years ago and have grown into small trees. There have been minor branch failures in them as they normally do not grow to this size. They are competing for sunlight from the surrounding Chinese Elms and City of San Marino Silk Oak trees. The tallest trees in the background of the image are the city trees.



Fig. 6 Trees #10-16

Tree #17, *Ulmus parvifolia*, Chinese Elm, Arbor Access F-14, Fig. 7

This tree is located at the southeast corner of the property very close to the property line and more utility lines. Like the others, it has been reduced in size to control growth next to the utility lines and is not in a good location for proper growth. Roots would very likely be impacted during reconstruction, (note the truck in the driveway to indicate the site access.



Fig. 7 Tree #17



**RECOMMENDATIONS:**

All trees with the exception of tree #3 would most likely be impacted significantly from site reconstruction. See below for summary and recommendations:

Tree #1-Remove tree and stump, replant with a new species elsewhere on site of smaller mature size.

Tree #2-Remove tree and stump, replant with a new species elsewhere on site of smaller mature size.

Tree #3-Option #1 Perform young tree maintenance to correct lean. Inquire from neighboring resident about the possibility of thinning the private Pecan to allow the Cork Oak to grow more naturally. Option #2 Transplant this tree to a new location on site to serve as a replacement for a removal.

Trees #4-8 Trees will have roots impacted from construction activities are competing for size and space with neighboring city trees. Remove and replace with a new species elsewhere on site of smaller mature size. Replace with three small trees of 15-25 max mature height at conclusion of construction.

Tree #9 Tree and stump removal, do not replace, (underground utility/ vault nearby).

Tree #10 Tree and stump removal. Tree will have roots impacted from construction activities and is competing for size and space with neighboring city trees. Remove and replace with a new species elsewhere on site of smaller mature size.

Trees #11-16 Option #1 Keep the trees in place and perform crown thinning to reduce likelihood of additional failures. Option #2 Tree and stump removal and replace with similar screen shrubs as necessary.

Tree #17 Tree will be highly impacted by construction and is poorly structured due to location near powerlines. Tree and stump removal is recommended and do not replant at this location. A smaller replant is recommended at the conclusion of construction.

Recommended replant species include Strawberry tree, Brisbane Box, Pink Trumpet Tree, and Magnolia 'Little Gem'.



The intent of this report was to provide as complete and unbiased an opinion as possible with regards to the current health and condition of the trees at the Graves reservoir discussed above. If you have any questions or require additional information, please feel free to contact me at (714) 412-1980.

Respectfully,

*Timothy A Crothers*

Tim Crothers

ISA Certified Arborist #WE-7655AUM

ISA Qualified Risk Assessor

West Coast Arborists Inc.



## **ASSUMPTIONS AND LIMITING CONDITIONS**

1. Care has been taken to obtain all information from reliable sources. All data has been verified insofar as possible; however, the Consultant can neither guarantee nor be responsible for the accuracy of information provided by others. Standard of Care has been met with regards to this project within reasonable and normal conditions.
2. The Consultant will not be required to give testimony or to attend court by reason of this report unless subsequent contractual arrangements are made, including payment of an additional fee for such services as described in the fee schedule and contract of engagement.
3. Loss or alteration of any part of this report invalidates the entire report.
4. Possession of this report or a copy thereof does not imply right of publication or use for any purpose by any other than the person to whom it is addressed, without the prior written consent of the Consultant.
5. This report and any values expressed herein represent the opinion of the Consultant, and the Consultant's fee is in no way contingent upon the reporting of a stipulated result, a specified value, the occurrence of a subsequent event, nor upon any finding to be reported.
6. Unless expressed otherwise: 1) information contained in this report covers only those items that were examined and reflects the condition of those items at the time of inspection; and 2) the inspection is limited to visual examination of accessible items without dissection, excavation, or coring, unless otherwise stated. There is no warranty or guarantee, expressed or implied, that problems or deficiencies of the tree(s) or property in question may not arise in the future.
7. Arborists are tree specialists who use their education, knowledge, training, and experience to examine trees, recommend measures to enhance the beauty and health of trees, and attempt to reduce the risk of living near trees. It is highly recommended that you follow the arborist recommendations; however, you may choose to accept or disregard the recommendations and/or seek additional advice.
8. Arborists cannot detect every condition that could possibly lead to the structural failure of a tree. Trees are living organisms that fail in ways we do not fully understand. Conditions are often hidden within trees and below ground. Arborists cannot guarantee that a tree will be healthy or safe under all circumstances, or for a specific period of time.
9. Any recommendations and/or performed treatments (including, but not limited to, pruning or removal) of trees may involve considerations beyond the scope of the arborist's services, such as property boundaries, property ownership, site lines, disputes between neighbors, and any other related issues. Arborists cannot take such considerations into account unless complete and accurate information is disclosed to the arborist. An arborist can then be expected to consider and reasonably rely on the completeness and accuracy of the information provided.
10. The author has no personal interest or bias with respect to the subject matter of this report or the parties involved. He/she has inspected the subject tree(s) and to the best of their knowledge and belief, all statements and information presented in the report are true and correct.
11. Unless otherwise stated, trees were examined using the tree risk assessment criteria detailed by *ANSI A300 (Part 9)-2011 Tree Risk Assessment, a. Tree Structure Assessment and A Photographic Guide to the Evaluation of Hazard Trees (Matheny & Clark)*.



**Appendix B**  
**Graves Reservoir**  
**Biological Resources Assessment**

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Date: March 29, 2016

Re: Graves Reservoir Replacement Project  
Biological Resources Assessment

Prepared by: Stephanie Murphy, Supervising Wildlife Biologist, MWH  
Stephanie.Murphy@mwhglobal.com  
916-418-8435

Distribution: City of South Pasadena  
1414 Mission Street  
South Pasadena, 91030-3298  
Attn: Mr. John Wolitarsky

The City of South Pasadena, Public Works Department has prepared this Biological Resource Assessment to address the potential impacts of construction and operation of the Graves Reservoir to special-status wildlife and plant species. The Graves Reservoir, owned and operated by the City of South Pasadena, is located at 2225 El Molino Avenue in the City of San Marino. The project site is located south of the San Gabriel Mountains in an urbanized area of the Los Angeles County, in the City of San Marino. The proposed water reservoir would be located on the same site as the existing reservoir to be demolished. The site is adjacent to single family residential properties. Access to the area is provided by Interstate 10 (I-10, Christopher Columbus Transcontinental Highway), State Highway 110 (SR-110, Arroyo Seco Parkway) and Interstate 210 (I-210, Foothill Freeway). Major roadways to the project site include Huntington Drive, Garfield Avenue and Atlantic Boulevard.

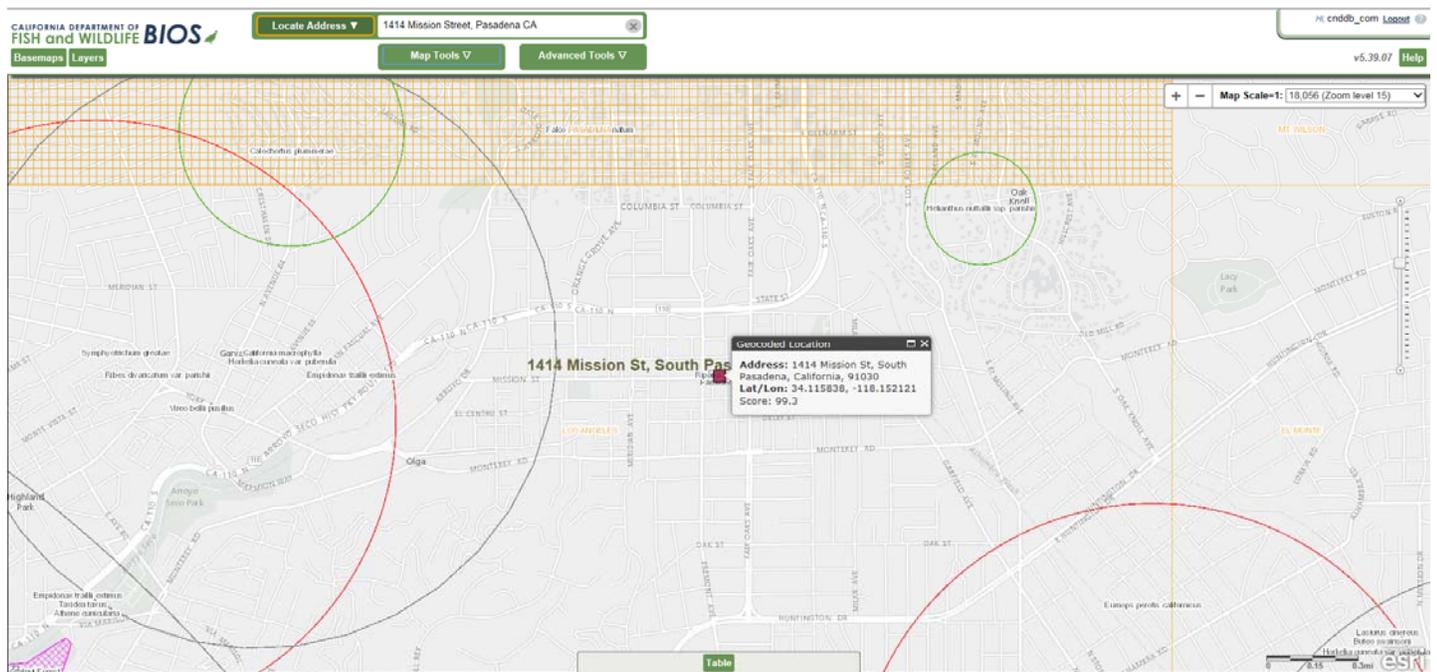
Vegetation on the project site consists of ornamental landscaping and 17 trees. A search of the California Natural Diversity Database was conducted on March 29, 2016; of the 19 species found within the Los Angeles USGS Quad, three have a Federal or State Listing. Animal species protected by either the California Endangered Species Act or the Federal Endangered Species Act are protected from direct and indirect impacts in order to save them from possible extinction. The Federal Endangered Species Act of 1973, and as amended, specifically lists species to be protected and includes significant penalties for disturbance or destruction of them and their habitats. The federal Act not only officially extends full protection to listed species, it also establishes procedures designed to encourage recovery of the species through specific management plans and programs, such as survey protocols and recovery plans.

California's Endangered Species Act includes species that may be protected under the federal statute but also includes species not officially protected under the federal Act. However, the type and extent of protection of species under the California Endangered Species Act are similar to that extended by the federal Act. Impacts, direct and indirect, to officially listed threatened and endangered species are potentially a violation of either or both state and federal Endangered Species Acts. It is important to note that impacts to endangered species do not have to be intentional for violations to occur. Thus, avoidance of impacts is important.

**Table 1. State & Federally Listed Species within the Los Angeles USGS Quadrangle**

Species Name	Listing Status	Potential to occur in project area
Southwestern willow flycatcher ( <i>Empidonax trailii extimus</i> )	Federally Endangered State Endangered	No habitat within project area.
Bank Swallow ( <i>Riparia riparia</i> )	State Threatened	No habitat within the project area.
Least Bell's vireo ( <i>Vireo bellii pusillus</i> )	Federally Endangered State Endangered	No habitat within the project area.
Burrowing Owl ( <i>Athene cunicularia</i> )	Species of Special Concern	No habitat within the project area.
Western mastiff bat ( <i>Eumops perotis californicus</i> )	Species of Special Concern	No habitat within the project area.
Hoary bat ( <i>Lasiurus cinereus</i> )	None	No habitat within the project area.
Big free-tailed bat ( <i>Nyctinomops macrotis</i> )	Species of Special Concern	Unlikely, prefer rugged rocky terrain. No historical sightings.
American badger ( <i>Taxidea taxus</i> )	Species of Special Concern	No habitat within the project area.
Coast Horned Lizard ( <i>Phrynosoma blainvillii</i> )	Species of Special Concern	No habitat within the project area.
Round-leaved filaree ( <i>California macrophylla</i> )	BLM Sensitive	No habitat within the project area.
Greata's aster ( <i>Symphyotrichum greatae</i> )	BLM Sensitive	No habitat within the project area.

Utilizing California Department of Fish and Wildlife (CDFW) BIOS mapping (see Figure 1 below) there are no sensitive species occurrences noted near the project site.



**Figure 1.** BIOS Mapping, March 29, 2016

The site lies within a developed area and is surrounded by residential properties on all sides. The project site does not fall within the boundaries of any Habitat Conservation Plans or Natural Community Conservation Plans (CDFW, 2015). Due to the urban setting, this area does not contribute to a wildlife corridor and the proposed project will not change or restrict wildlife migration or movement.

Migratory bird species are protected by international treaty under the Migratory Bird Treaty Act (MBTA) of 1918 (16 USC 703-711). The MBTA makes it unlawful to take, possess, buy, sell, purchase, or barter any migratory bird listed in 50 CFR Part 10, including feathers or other parts, nests, eggs or projects, except as allowed by implementing regulations (50 CFR 21). Sections 3503, 3503.5 and 3800 of the California Fish and Game Code prohibit the take, possession, or destruction of birds, their nests or eggs. USFWS lists 28 species of migratory birds that could potentially occur in the project vicinity (see attached list). Nesting of birds subject to the MTBA is not specifically known for the project site. However, since 10 trees would be removed during project construction, impacts to MTBA species are possible. Therefore the following Mitigation Measure will be implemented to minimize impacts on bird species subject to the MBTA.

For all construction-related activities that take place within the nesting season (February 1 through August 31), a preconstruction nesting-bird survey shall be conducted no more than 14 days prior to project initiation within the project area and a 300-foot buffer, 500-foot for raptors. If active nests are found for species subject to the MBTA, a no-disturbance buffer zone shall be established according to the biologist's assessment of the species' sensitivity to disturbance, generally 300 feet for smaller birds and 500 feet for raptors. Within this buffer zone, no construction shall take place until August 31, until the biologist determines that the nest is no longer active, or unless an alternative method of avoiding nest disturbance is prepared by the biologist and approved by the relevant resource agencies.

The Graves reservoir replacement project will not significantly alter or change the current habitat in or adjacent to the project site. With the implementation of the MBTA mitigation listed above, the project will not result in direct or indirect impacts to special-status wildlife or plant species.

### **Federal Conformity**

One species (Coastal California Gnatcatcher) subject to the federal Endangered Species Act and 28 bird species subject to the MBTA are identified by the USFWS for the general project vicinity. The habitat for Coastal California Gnatcatcher is coastal sage scrub, a vegetation community absent from the project site. Similarly, nesting by bird species in onsite trees or other vegetation is not known for the project site, therefore impacts to MBTA species are not anticipated. However, mitigation would be implemented to confirm that nests of MBTA species are not disturbed by project construction activities. As mitigated, the proposed project would be in conformance with the federal Endangered Species Act.



# Summary Table Report

## California Department of Fish and Wildlife

### California Natural Diversity Database



Query Criteria: Quad is (Los Angeles (3411812))

March 29, 2016 Graves Reservoir

Name (Scientific/Common)	CNDDB Ranks	Listing Status (Fed/State)	Other Lists	Elev. Range (ft.)	Total EO's	Element Occ. Ranks						Population Status		Presence		
						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
<i>Athene cunicularia</i> burrowing owl	G4 S3	None None	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern USFWS_BCC-Birds of Conservation Concern	280 280	1882 S:1	0	0	0	0	0	1	1	0	1	0	0
<i>Atriplex serenana var. davidsonii</i> Davidson's saltscale	G5T1 S1	None None	Rare Plant Rank - 1B.2		28 S:1	0	0	0	0	1	0	1	0	0	1	0
<i>California macrophylla</i> round-leaved filaree	G3? S3?	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive SB_RSABG-Rancho Santa Ana Botanic Garden SB_SBBG-Santa Barbara Botanic Garden		162 S:1	0	0	0	0	1	0	1	0	0	1	0
<i>Calochortus plummerae</i> Plummer's mariposa-lily	G4 S4	None None	Rare Plant Rank - 4.2 SB_RSABG-Rancho Santa Ana Botanic Garden	800 800	230 S:1	0	0	0	0	1	0	1	0	0	1	0
<i>Empidonax traillii extimus</i> southwestern willow flycatcher	G5T2 S1	Endangered Endangered	NABCI_RWL-Red Watch List	280 280	70 S:2	0	0	0	0	0	2	2	0	2	0	0
<i>Eumops perotis californicus</i> western mastiff bat	G5T4 S3S4	None None	BLM_S-Sensitive CDFW_SSC-Species of Special Concern WBWG_H-High Priority		293 S:2	0	0	0	0	0	2	2	0	2	0	0
<i>Helianthus nuttallii ssp. parishii</i> Los Angeles sunflower	G5TH SH	None None	Rare Plant Rank - 1A		8 S:1	0	0	0	0	1	0	1	0	0	1	0
<i>Horkelia cuneata var. puberula</i> mesa horkelia	G4T1 S1	None None	Rare Plant Rank - 1B.1 USFS_S-Sensitive	600 600	103 S:1	0	0	0	0	1	0	1	0	0	0	1
<i>Lasiurus cinereus</i> hoary bat	G5 S4	None None	IUCN_LC-Least Concern WBWG_M-Medium Priority		235 S:1	0	0	0	0	0	1	1	0	1	0	0



**Summary Table Report**  
**California Department of Fish and Wildlife**  
**California Natural Diversity Database**



Name (Scientific/Common)	CNDDB Ranks	Listing Status (Fed/State)	Other Lists	Elev. Range (ft.)	Total EO's	Element Occ. Ranks						Population Status		Presence		
						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
<i>Lepidium virginicum var. robinsonii</i> Robinson's pepper-grass	G5T3 S3	None None	Rare Plant Rank - 4.3		142 S:1	0	0	0	0	0	1	1	0	1	0	0
<i>Navarretia prostrata</i> prostrate vernal pool navarretia	G2 S2	None None	Rare Plant Rank - 1B.1		60 S:1	0	0	0	0	1	0	1	0	0	1	0
<i>Nyctinomops macrotis</i> big free-tailed bat	G5 S3	None None	CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern WBWG_MH-Medium-High Priority	300 300	32 S:1	0	0	0	0	0	1	1	0	1	0	0
<i>Phrynosoma blainvillii</i> coast horned lizard	G3G4 S3S4	None None	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern	500 500	728 S:1	0	0	0	0	1	0	1	0	0	1	0
<i>Ribes divaricatum var. parishii</i> Parish's gooseberry	G4TH SH	None None	Rare Plant Rank - 1A	1,000 1,000	4 S:1	0	0	0	0	1	0	1	0	0	1	0
<i>Riparia riparia</i> bank swallow	G5 S2	None Threatened	BLM_S-Sensitive IUCN_LC-Least Concern		296 S:1	0	0	0	0	1	0	1	0	0	0	1
<i>Symphotrichum greatae</i> Greata's aster	G3 S3	None None	Rare Plant Rank - 1B.3 BLM_S-Sensitive		56 S:2	0	0	0	0	2	0	2	0	0	2	0
<i>Taxidea taxus</i> American badger	G5 S3	None None	CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern	280 280	487 S:1	0	0	0	0	0	1	1	0	1	0	0
<i>Vireo bellii pusillus</i> least Bell's vireo	G5T2 S2	Endangered Endangered	IUCN_NT-Near Threatened NABCI_YWL-Yellow Watch List	55 600	468 S:4	0	0	0	0	4	0	4	0	0	4	0
<i>Walnut Forest</i> Walnut Forest	G1 S1.1	None None		700 700	6 S:1	0	1	0	0	0	0	1	0	1	0	0

# Graves Reservoir Project

## *IPaC Trust Resource Report*

Generated January 20, 2016 05:52 PM MST, IPaC v2.3.2

This report is for informational purposes only and should not be used for planning or analyzing project level impacts. For project reviews that require U.S. Fish & Wildlife Service review or concurrence, please return to the IPaC website and request an official species list from the Regulatory Documents page.





## Endangered Species

Proposed, candidate, threatened, and endangered species are managed by the [Endangered Species Program](#) of the U.S. Fish & Wildlife Service.

**This USFWS trust resource report is for informational purposes only and should not be used for planning or analyzing project level impacts.**

For project evaluations that require FWS concurrence/review, please return to the IPaC website and request an official species list from the Regulatory Documents section.

[Section 7](#) of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency.

**A letter from the local office and a species list which fulfills this requirement can only be obtained by requesting an official species list from the Regulatory Documents section in IPaC.**

The list of species below are those that may occur or could potentially be affected by activities in this location:

### Birds

**Coastal California Gnatcatcher** *Polioptila californica californica* Threatened

**CRITICAL HABITAT**

There is **final** critical habitat designated for this species.

[https://ecos.fws.gov/tess\\_public/profile/speciesProfile.action?sPCODE=B08X](https://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=B08X)

### Critical Habitats

**There are no critical habitats in this location**

# Migratory Birds

Birds are protected by the [Migratory Bird Treaty Act](#) and the [Bald and Golden Eagle Protection Act](#).

Any activity which results in the take of migratory birds or eagles is prohibited unless authorized by the U.S. Fish and Wildlife Service (1). There are no provisions for allowing the take of migratory birds that are unintentionally killed or injured.

Any person or organization who plans or conducts activities that may result in the take of migratory birds is responsible for complying with the appropriate regulations and implementing appropriate conservation measures.

Additional information can be found using the following links:

- Birds of Conservation Concern  
<http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php>
- Conservation measures for birds  
<http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php>
- Year-round bird occurrence data  
<http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/akn-histogram-tools.php>

The following species of migratory birds could potentially be affected by activities in this location:

<b>Bald Eagle</b> <i>Haliaeetus leucocephalus</i>	Bird of conservation concern
Season: Wintering <a href="https://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=B008">https://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=B008</a>	
<b>Bell's Vireo</b> <i>Vireo bellii</i>	Bird of conservation concern
Season: Breeding <a href="https://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=B0JX">https://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=B0JX</a>	
<b>Brewer's Sparrow</b> <i>Spizella breweri</i>	Bird of conservation concern
Year-round <a href="https://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=B0HA">https://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=B0HA</a>	
<b>Burrowing Owl</b> <i>Athene cucularia</i>	Bird of conservation concern
Year-round <a href="https://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=B0NC">https://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=B0NC</a>	
<b>Cactus Wren</b> <i>Campylorhynchus brunneicapillus</i>	Bird of conservation concern
Year-round <a href="https://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=B0FZ">https://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=B0FZ</a>	
<b>California Spotted Owl</b> <i>Strix occidentalis occidentalis</i>	Bird of conservation concern
Year-round <a href="https://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=B08L">https://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=B08L</a>	

<b>Costa's Hummingbird</b> <i>Calypte costae</i>	Bird of conservation concern
Season: Breeding <a href="https://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0JE">https://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0JE</a>	
<b>Fox Sparrow</b> <i>Passerella iliaca</i>	Bird of conservation concern
Season: Wintering	
<b>Green-tailed Towhee</b> <i>Pipilo chlorurus</i>	Bird of conservation concern
Season: Breeding <a href="https://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0IO">https://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0IO</a>	
<b>Lawrence's Goldfinch</b> <i>Carduelis lawrencei</i>	Bird of conservation concern
Year-round <a href="https://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0J8">https://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0J8</a>	
<b>Least Bittern</b> <i>Ixobrychus exilis</i>	Bird of conservation concern
Year-round	
<b>Lesser Yellowlegs</b> <i>Tringa flavipes</i>	Bird of conservation concern
Season: Wintering <a href="https://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0MD">https://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0MD</a>	
<b>Lewis's Woodpecker</b> <i>Melanerpes lewis</i>	Bird of conservation concern
Season: Wintering <a href="https://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0HQ">https://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0HQ</a>	
<b>Loggerhead Shrike</b> <i>Lanius ludovicianus</i>	Bird of conservation concern
Year-round <a href="https://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0FY">https://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0FY</a>	
<b>Long-billed Curlew</b> <i>Numenius americanus</i>	Bird of conservation concern
Season: Wintering <a href="https://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B06S">https://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B06S</a>	
<b>Marbled Godwit</b> <i>Limosa fedoa</i>	Bird of conservation concern
Season: Wintering <a href="https://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0JL">https://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0JL</a>	
<b>Mountain Plover</b> <i>Charadrius montanus</i>	Bird of conservation concern
Season: Wintering <a href="https://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B078">https://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B078</a>	
<b>Nuttall's Woodpecker</b> <i>Picoides nuttallii</i>	Bird of conservation concern
Year-round <a href="https://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0HT">https://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0HT</a>	
<b>Oak Titmouse</b> <i>Baeolophus inornatus</i>	Bird of conservation concern
Year-round <a href="https://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0MJ">https://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0MJ</a>	
<b>Olive-sided Flycatcher</b> <i>Contopus cooperi</i>	Bird of conservation concern
Season: Breeding <a href="https://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0AN">https://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0AN</a>	
<b>Peregrine Falcon</b> <i>Falco peregrinus</i>	Bird of conservation concern
Season: Wintering <a href="https://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0FU">https://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0FU</a>	

<b>Red-crowned Parrot</b> <i>Amazona viridigenalis</i> Year-round <a href="https://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=B0GO">https://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=B0GO</a>	Bird of conservation concern
<b>Rufous-crowned Sparrow</b> <i>Aimophila ruficeps</i> Year-round <a href="https://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=B0MX">https://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=B0MX</a>	Bird of conservation concern
<b>Short-eared Owl</b> <i>Asio flammeus</i> Season: Wintering <a href="https://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=B0HD">https://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=B0HD</a>	Bird of conservation concern
<b>Snowy Plover</b> <i>Charadrius alexandrinus</i> Season: Breeding	Bird of conservation concern
<b>Western Grebe</b> <i>Aechmophorus occidentalis</i> Season: Wintering <a href="https://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=B0EA">https://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=B0EA</a>	Bird of conservation concern
<b>Williamson's Sapsucker</b> <i>Sphyrapicus thyroideus</i> Season: Wintering <a href="https://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=B0FX">https://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=B0FX</a>	Bird of conservation concern
<b>Red Knot</b> <i>Calidris canutus ssp. roselaari</i> Season: Wintering <a href="https://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=B0G6">https://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=B0G6</a>	Bird of conservation concern

## Refuges

Any activity proposed on [National Wildlife Refuge](#) lands must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

**There are no refuges in this location**

# Wetlands in the National Wetlands Inventory

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal Statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

## DATA LIMITATIONS

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

## DATA EXCLUSIONS

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tubercid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

## DATA PRECAUTIONS

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

**There are no wetlands in this location**

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**Appendix C**  
**Asbestos and Lead Survey Report**

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**GROUP**



**ASBESTOS AND LEAD- BASED PAINT  
SURVEY  
GRAVES RESERVOIR  
SOUTH PASADENA, CALIFORNIA**

**November 4, 2015  
Group Delta Project No.  
IR641.2**



# GROUP DELTA

November 4, 2015

MWH  
300 N. Lake Avenue  
Pasadena, California 91101

Attention: Miko Aivazian, PE

Subject: Hazardous Materials Survey Report  
Graves Reservoir  
South Pasadena, California  
Group Delta Project No. IR641.2

Dear Mr. Aivazian:

Group Delta Consultants, Inc. (GDC) is pleased to submit this Hazardous Materials Survey Report for the Graves Reservoir located in the South Pasadena, California.

The purpose of the testing and this report is provide locations and approximate quantities of asbestos-containing materials (ACMs), asbestos-containing construction materials (ACCMs) and lead-based paint (LBP) to assist in the demolition of the project site. We appreciate your selection of GDC for this project and look forward to assisting you further on this and other projects. If you have any questions, please do not hesitate to contact us.

Sincerely,  
GROUP DELTA CONSULTANTS, INC.

Jerry Sherman LEED AP, CAC, CDPH  
Hazardous Materials Service Manager

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2.0 SCOPE OF WORK	2
3.0 FIELD INVESTIGATION	2
3.1 Asbestos Sampling and Analytical	2
3.2 Lead Sampling and Analytical	4
4.0 CONCLUSIONS AND RECOMENDATIONS	6

### Tables:

Table A –Asbestos-containing Materials and Asbestos-containing Construction Materials  
Table B –Lead-based Paint

### Figure:

Figure 1 – Asbestos Sample Location and XRF Orientation Map

### Attachments:

Consultant Certificates  
Asbestos Analytical and Sample Chain of Custody Record Form  
XRF Lead Sampling Logs

## 1.0 INTRODUCTION AND PROJECT DESCRIPTION

MWH is proposing to demolish the Graves Reservoir located in South Pasadena, California. The site consists of a wood framed reservoir, concrete and steel pump control house and Wier building on a concrete slab, a wood framed chlorine injection station, a subsurface concrete well pit and two subsurface "sand boxes". Proposed project demolition will involve disturbance of ACMs/ACCMs and LBPs.

## 2.0 SCOPE OF WORK

GDC's authorized scope of work for this portion of the project is as follows:

Perform an asbestos survey at the site in accordance with the local, State and Federal standards. Visual inspection, the collection and analysis of bulk samples from suspected asbestos-containing materials. Analyze by Polarized Light Microscopy (PLM) and quantify the materials determined to be asbestos-containing materials (ACMs) and asbestos-containing construction materials (ACCMs).

Perform lead testing at the site for the determination of the presence of lead-based paint (LBP). The testing was conducted through the use of a Niton XL x-ray fluorescence (XRF) portable analyzer. The components determined to be LBP were quantified.

Preparation of an asbestos and lead-based survey report.

A description of the scope of work is provided in section 3.0. Field investigation

GDC conducted an asbestos and lead-based paint survey of all the structures proposed for demolition. Suspect ACMs and LBPs were sampled and quantified for the purposes of acquiring bids from prospective contractors and for South Coast Air Quality Management District (SCAQMD) notification purposes.

## 3.0 FIELD INVESTIGATION

### 3.1 Asbestos Sampling and Analytical

#### Asbestos – Sampling

The survey and testing was conducted on September 28, 29 and October 30, 2015 by Jerry Sherman and Chris Lemaster. A total of 26 bulk asbestos samples were collected and submitted for analysis. Suspect materials sampled and analyzed did have asbestos detected. Mr. Sherman also performed report preparation. Mr. Sherman is a California Occupational Safety and Health Administration (Cal/OSHA)-Certified Asbestos Consultant (CAC) and a

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California Department of Public Health (CDPH)-Certified Lead-Related Inspector/Risk Assessor. Mr. Lemaster is a Cal/OSHA Certified Site Surveillance Technician (CSST) and a CDPH Lead Sampling Technician. Copies of certifications can be found in the Appendix of this document.

Suspect ACMs and ACCMs visual identification was performed by entering representative areas and assessing accessible structural, architectural, and mechanical components for the presence of suspect ACMs or ACCMs. Previous asbestos survey reports and analytical data were not available or reviewed as part of this survey. Each suspect ACM or ACCM identified was sampled in accordance with sampling guidelines established by the United States Environmental Protection Agency (USEPA), and satisfies 29 Code of Federal Regulations (CFR) 1926.1101, 40 CFR 763 (Asbestos Hazard Emergency Response Act [AHERA]), and 8 CCR 1529. The following summarizes the sampling procedures utilized:

The location and total quantity of each ACM and ACCM was tabulated.

These materials were then categorized into homogeneous materials. A homogeneous material is defined as being uniform in texture, color, and date of application.

A sampling scheme was developed based upon the location and quantity of the various homogeneous materials.

Bulk samples were collected by trained personnel using an appropriate sampling tool and a leak-tight container.

Decontamination of bulk sampling tools to prevent the spread of secondary contamination to subsequent bulk samples.

Each bulk sample was individually numbered and recorded on a Bulk Sample Log.

A Chain-of-Custody Record was maintained and submitted with the samples to the laboratory.

Representative drawings showing asbestos sample locations can be found in Table 1 of this document.

#### Asbestos - Analytical Methodology

All bulk samples were analyzed by Amerisci Los Angeles, located at 24416 S. Main Street, Suite 308 in Carson, California. Amerisci is accredited by the National Voluntary Laboratory Accreditation Program (NVLAP), the National Institute of Standards and Technology (NIST) and is a successful participant in the Proficiency Analytical Testing Program (PAT).

### Polarized Light Microscopy (PLM)

All bulk samples were analyzed by Polarized Light Microscopy (PLM) utilizing dispersion staining techniques in accordance with the EPA Method: "Method for the Determination of Asbestos in Bulk Building Materials U.S. EPA/600/R-93/116" dated July 1993, and adopted by the National Voluntary Laboratory Accreditation Program (NVLAP), NVLAP Test Method Code 18/A01, as affiliated with the National Institute for Standards and Technology (NIST). Each sample was subjected to two microscopy examinations.

The first examination was performed at 20X magnification using a stereo microscope equipped with an external illuminator. Each sample was examined for layering, homogeneity, and the presence of fibrous and non-fibrous materials. An estimate of the percentage for each sample component, relative to the entire sample volume, was made. When discrete strata are identified as a separate material, fibers are first identified and quantified by layer and then the results are combined to yield an estimate of total percent asbestos present.

The second examination was performed at a range from of 100X to 400X magnification using a Polarized Light Microscope equipped with two polarizing filters to observe specific optical characteristics. The use of polarized light allows the determination of refractive indices along specific crystallographic axes. Morphology and color were also observed. A retardation plate was placed at a 45 degree angle between the cross polars to determine the sign of elongation using orthoscopic illumination. Orientation of the two filters such that their vibration planes were perpendicular allowed observation of the birefringence and extinction characteristics of anisotropic particles.

### 3.2 Lead Sampling and Analytical

#### Lead – Sampling

A total of 62 XRF measurements (with calibration readings) for the determination of lead content were collected from the subject site building for lead testing activities on September 28, 2015 by Jerry Sherman, CDPH Inspector/Assessor and Chris Lemaster, CDPH Lead Sampling Technician. The analytical results indicate that building components and respective surface coatings at the subject site building *did* have lead concentrations defining them as LBPs, in accordance with Title 17 of the California Code of Regulations, Section 35001 et. Seq.

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Lead – Analytical Methodology

For purposes of this survey, and in accordance with Title 8 of the California Code of Regulations, Section 1532.1 (8 CCR 1532.1) and Title 17 of the California Code of Regulations, Section 35001 et. seq. the XRF measurement data results were interpreted as follows:

1. Positive results (LBPs present) were determined when analytical results revealed a lead concentration of 1.0 milligrams per square centimeter (mg/cm<sup>2</sup>) or greater.
2. LCSCs were determined when analytical results revealed a lead concentration of 0.1 mg/cm<sup>2</sup> or greater, up to 1.0 mg/cm<sup>2</sup>.
3. Negative results were determined when analytical results revealed a lead concentration of less than 0.1 mg/cm<sup>2</sup>.

Sample ID	Location	ACM/ACCM	Approx. Quantity
GR-006 and 008	Roof of reservoir at penetrations, vents and seams	Roof mastic, ACM	700 SF
GR-017	Well pit access door	Bolt and edge sealant, ACM	5 SF
GR-018	Control room ceiling	Textured ceiling coating, ACM	280 LF
GR2-04	Bottom and side interior surfaces of reservoir	Tar/mastic crack patch, ACCM (<1%)	600 SF

Assay Number	Location and Approx. Quantity	Color, Substrate, Component and Condition	Lead Concentration mg/kg <sup>2</sup>
5	Exterior	Tan/Concrete/Poor	1.6

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	stairs/Reservoir/60 SF		
11	Well pit/Access door frame/40 LF	Tan/Wood/Intact	1.3
16	Well pit/ Handrail/20 SF	Blue/Metal/Intact	7.9
28	Exterior /Fence posts/1,200 LF	Green/Metal/Intact	2.7
29	Exterior wall/Control room/2,500 SF	Tan/Concrete/Fair	3.1
33	Exterior front upper door vent/Control room/20 SF	Brown/Metal/Intact	3.9
34	Exterior valve/Adj. to control room/2 EA	Tan/Metal/Poor	2.2
35	Exterior Stem wall/Reservoir/1,200 SF	Tan/Concrete/Poor	1.8
42	Rear door/Control room/20 SF	Tan/Metal/Intact	2.4
49	Interior ceiling beam/Control room/60 SF	White/Wood/Intact	2.9
55	Interior stairs/Control room/20 SF	Blue/Wood/Intact	1.5
58	Interior cabinet/Control room/120 SF	White/Wood/Intact	2.5

#### 4.0 CONCLUSIONS AND RECOMENDATIONS

##### Asbestos Survey

The results of the asbestos survey indicate that ACMs/ACCMs are present at the subject site buildings which may be impacted by the impending demolition activities and are listed in Table A above.

At no time should the identified ACMs be drilled, cut, sanded, scraped or otherwise disturbed by untrained personnel. These materials should be removed prior to any activities which will impact these materials. Asbestos disturbance and/or removal operations must be conducted by a California Occupational Safety and Health Administration (Cal/OSHA)-registered and State licensed asbestos removal contractor. Disturbance and/or abatement

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operations should be performed under the direct observation of a California Certified Asbestos Consultant.

Construction activities involving the potential for impacting ACMs should be conducted in accordance with the requirements of Title 8 of the California Code of Regulations, Section 1529 (8 CCR 1529).

For abatement activities which will involve the removal of the identified friable and non-friable ACMs and/or regulated ACMs, notification must be made to the SCAQMD. Notification to the SCAQMD must be accomplished ten working days prior to the initiation of such activities.

For abatement activities which will involve asbestos-related work of at least 100 square or linear feet, written notification must be made to the Cal/OSHA. Notification to the Cal/OSHA must be accomplished 24 hours prior to the initiation of such activities.

Notification to employees and contractors working within the building should be made in accordance with the California Health and Safety Code, Section 25915 et.seq. and Proposition 65.

The following materials were sampled and no asbestos was detected in the samples collected:

1. Roofing material (Reservoir, Weir building, Chlorine injection building and Control room)
2. Roof mastic (Control room, Weir building and Control room)
3. Concrete
4. Coupling gaskets associated with piping
5. Check valve gaskets associated with piping
6. Gray concrete/mortar ceiling coating in Control room
7. Silver paint in Control room
8. Treated wood beams in Reservoir
9. Rubberized coating in Reservoir
10. Accumulated silt in Reservoir

#### Lead Testing Services

The lead testing services revealed that building components with coatings defining them as LBPs are present at the site buildings which may be impacted by the impending demolition activities.

At present there is no state or federal regulation requiring mandatory lead removal or abatement prior to disturbance or demolition of structures with identified lead materials. However, there are applicable Cal/OSHA worker protection and training requirements; California

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Environmental Protection Agency (Cal/EPA) waste disposal requirements, California Department of Public Health (CDPH) requirements for public and residential buildings, and Senate Bill (SB) 460 lead hazard regulations that apply to lead-related construction activities, abatement activities and their associated wastes. The following is a brief discussion and summary of applicable regulatory requirements:

- Cal/OSHA: Title 8, California Code of Regulation (CCR), Section 1532.1 (8 CCR 1532.1) governs occupational exposure to lead. This regulation requires that prior to initiation of certain activities, referred to as “trigger tasks”, workers must be trained, medically evaluated, and properly fitted with respiratory protection, and protective clothing until statistically reliable personal eight-hour time weighted average (TWA) results indicate lead exposure levels below the Personal Exposure Limit (PEL) for each unique task which disturbs lead-based and lead-containing coatings. This process is known as a Negative Exposure Assessment or NEA. If the result of the exposure assessment is above the Action Level (AL) additional monitoring is required and if the result is above the PEL additional exposure monitoring, worker protection (including respirator protection and PPE), training and medical requirements apply. However even where the NEA criteria is met, certain hazard communication training and work practice controls still apply where lead is disturbed.

“Trigger tasks” are tasks that are assumed to exceed the PEL pending an exposure assessment and they encompass the majority of construction activities that disturb surface coatings.

Examples of “trigger” tasks range from manual paint scraping as a lower expected exposure up to hot work and abrasive blasting as the highest expected exposures, and include any non-listed task that the employer determines may potentially expose employees to lead levels above the AL.

NOTE – “OSHA does not consider any method that relies solely on the analysis of bulk materials or surface content of lead (or other toxic material) to be acceptable for safely predicting employee exposure to airborne contaminants. Without air monitoring results or without the benefit of historical or objective data (including air sampling which clearly demonstrates that the employee cannot be exposed above the action level during any process, operation, or activity) the analysis of bulk or surface samples cannot be used to determine employee exposure.” OSHA Standard Interpretation 5/8/2000.

Furthermore, OSHA states that these rules apply to “any detectable concentration of lead” without a specified detection level. Due to the Consumer Product Safety Commission currently allowing paint to contain up to 600 parts per million (ppm) of lead, the variation of lead content due to aging and weathering, and the variation of detection limits associated with both paint chip and x-ray fluorescence (XRF) analysis, it is recommended that all painted or coated surfaces

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be treated as potentially containing lead. Clearly, positive analytical results by either method can be used to indicate that detectable lead is present but negative results cannot be interpreted as conclusively demonstrating the absence of lead. Analytical data of bulk paint/coating materials or surface content (by XRF) of lead can be helpful in evaluation of lead-related environmental risks in general but cannot be used to calculate worker exposures and are not a substitute for employee exposure monitoring.

As a result of the above, any employee that works around potential lead-based or lead-containing coatings must have HAZCOM training and personal exposure air monitoring is additionally required for employees that disturb such coatings. Significant additional certification, notification, and work practices are required for materials found to be "lead-based".

- Welding, cutting or heating of metal surfaces containing surface coatings should be conducted in accordance with 29 CFR 1926.354 and 8 CCR 1537. These regulations require surfaces covered with toxic preservatives, and in enclosed areas, be stripped of all toxic coatings for a distance of at least 4 inches, in all directions, from the area of heat application prior to the initiation of such heat application.
- Cal/EPA through the Division of Toxic Substance Control (DTSC) regulates disposal of lead hazardous waste (Title 22 Division 4.5, Environmental Health Standards for the Management of Hazardous Waste). DTSC has issued guidance indicating that architectural debris with intact lead paint is normally expected to be handled as general construction waste. However, waste stream segregation and analysis is still required for all paint or coating debris regardless of if the paint or coating is intact on a building component or not. The resulting wastes may be hazardous under California and federal RCRA standards for lead and therefore require proper handling, packaging, labeling, and transportation under a proper manifest to a permitted hazardous waste storage, treatment and disposal facility.
- CDPH: The California Department of Public Health (CDPH) has specific requirements (Title 17 Sections 35001 thru 36100 et. al.) for hazard assessment and work in public or residential structures. These regulations require special certifications, work practices, and notification for such activities.
- Senate Bill 460 (SB 460): An act to amend Section 1941.1 of the Civil Code, and to amend Sections 17961, 17980, and 124130 of, and to add Sections 17920.10, 105251, 105252, 105253, 105254, 105255, 105256, and 105257 to, the Health and Safety Code, relating to lead abatement. This bill allows for fines and criminal penalties to be levied on any person who is found to have performed lead abatement without containment or created a measurable lead hazard based upon current CDPH standards. The testing for this determination can be initiated by any local or state building inspector, health department

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inspector, or other designated state or local official. A determination of a lead hazard is not solely based upon the lead content of the paint or coating and can be the result of the disturbance of such materials with low concentrations of lead.

Written notification to Cal/OSHA must be accomplished should LBP activities involve more than 100 square or linear feet of removal in accordance with the requirements of 8 CCR 1532.1. Proper written notification to CDPH may be required, depending upon the nature of the activity.

Proper waste characterization and disposal of lead-containing materials and lead-contaminated debris should be conducted in accordance with Title 22 of the California Code of Regulations and the California Health and Safety Code, Section 25157.8.

Figure

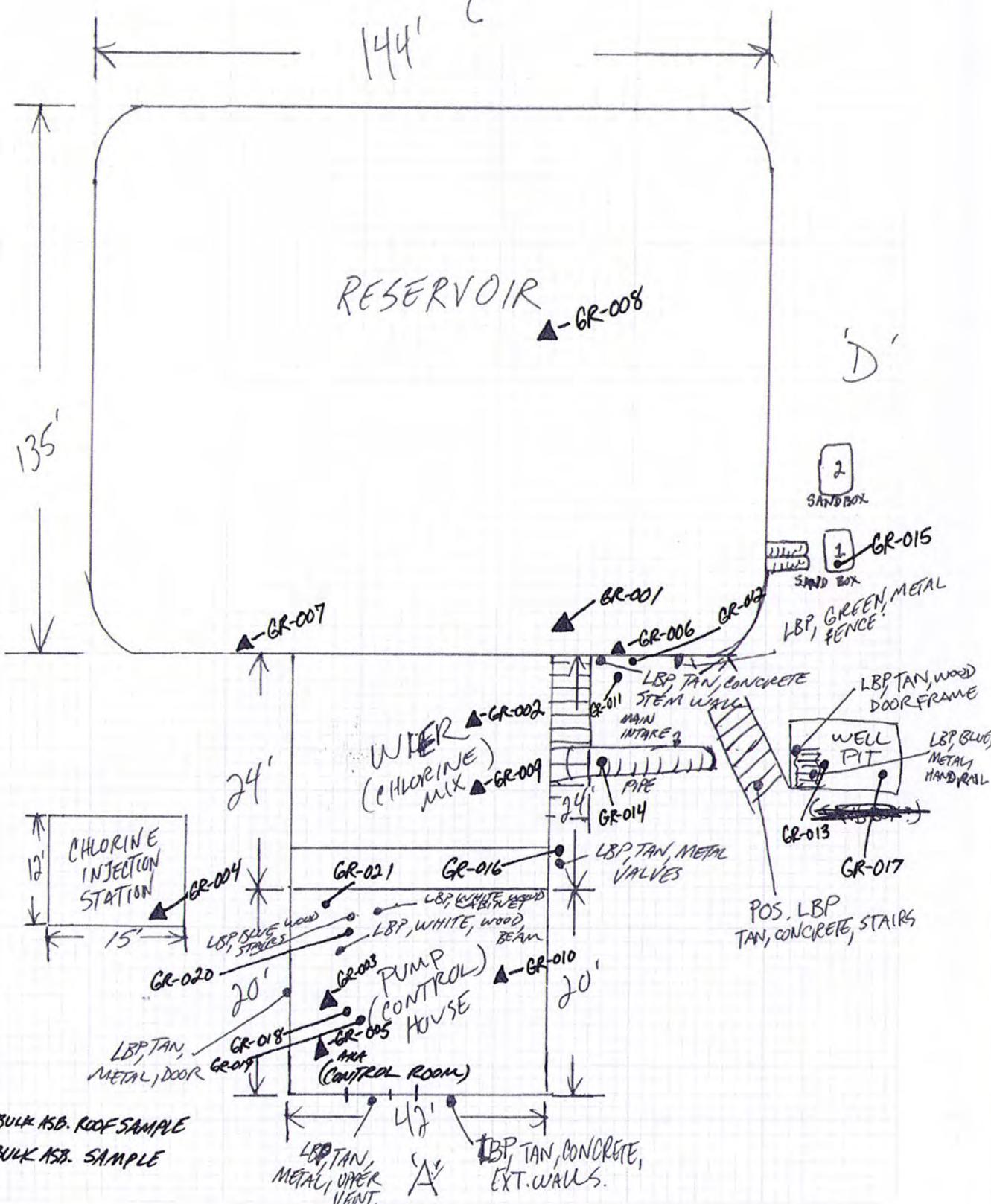
288  
270

144' 'C'

'B' 135'

RESERVOIR ▲-GR-008

'D'



- ▲ = BULK ASB. ROOF SAMPLE
- = BULK ASB. SAMPLE



PROJECT NAME: GRAVES RESERVOIR

DRAWN BY: Ch.

PROJECT NUMBER: IR15-035

DATE: 9/26/15

CHECKED BY: \_\_\_\_\_  
PAGE: 1 OF 1

Attachments

State of California  
Division of Occupational Safety and Health  
Certified Asbestos Consultant

**Jerry Robert Sherman**



Name

Certification No. 97-2324

Expires on 02/06/15

This certification was issued by the Division of Occupational Safety and Health as authorized by Sections 7180 et seq. of the Business and Professions Code.

State of California Department of Public Health

Lead-Related  
Construction  
Certificate

Certificate  
Type

Expiration  
Date

Inspector/Assessor 01/07/2015



Jerry R. Sherman

ID #: 5809

October 1, 2015

Group Delta Consultants  
Attn: Jerry Sherman  
9245 Activity Road  
Suite 103  
San Diego, CA 92126

RE: Group Delta Consultants  
Job Number 915091914  
P.O. #IR15-035  
IR15-035; MWH; Graves Reservoir S.P.

Dear Jerry Sherman:

Enclosed are the results for polarized light microscopy analysis (PLM) of the following Group Delta Consultants samples received at AmeriSci on Wednesday, September 30, 2015, for a 24 hour turnaround:

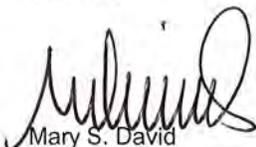
GR-001, GR-002, GR-003, GR-004, GR-005, GR-006, GR-007, GR-008, GR-009, GR-010, GR-011, GR-012, GR-013, GR-014, GR-015, GR-016, GR-017, GR-018, GR-019, GR-020, GR-021

The 21 samples contained in Ziplock Bags were shipped to AmeriSci via Federal Express 8065 0974 2018. These samples were prepared and analyzed according to EPA 600/R-93/116, including requirements for the EPA Interim Method (EPA 600/M4-82-020 per 40 CFR 763, subpt F, App. A). The samples were evaluated for homogeneity by low power stereomicroscopy. Asbestos fibers were identified by PLM and dispersion staining through the determination of the required optical properties including: morphology, color, pleochroism, refractive indices, birefringence, extinction and sign of elongation. The required analytical information, analysis results, analyst signature and laboratory identification is contained in the Analyst's Report.

This report relates ONLY to the sample analysis expressed as percent asbestos. The CV for this analysis is expected to range from 0.3 to 1.2, depending on the quantity of analyte present. AmeriSci assumes no responsibility for customer supplied data such as "sample type", "location", or "area sampled". This report must not be used to claim product endorsement by AmeriSci, NVLAP or any agency of the U. S. Government. The National Institute of Standards and Technology Accreditation requirements mandate that this report must not be reproduced, except in full without the written approval of the laboratory. This report may contain specific data not covered by NVLAP or ELAP accreditations respectively, if so identified in relevant footnotes.

AmeriSci appreciates this opportunity to serve your organization. Please contact us for any further assistance or with any questions.

Sincerely,



Mary S. David  
Client Services Manager



**AmeriSci Los Angeles**

24416 S. Main Street, Ste 308  
Carson, California 90745  
TEL: (310) 834-4868 • FAX: (310) 834-4772

## PLM Bulk Asbestos Report

Group Delta Consultants  
Attn: Jerry Sherman  
9245 Activity Road  
Suite 103  
San Diego, CA 92126

**Date Received** 09/30/15    **AmeriSci Job #** 915091914  
**Date Examined** 10/01/15    **P.O. #**  
**Page** 1 **of** 4  
**RE:** IR15-035; MWH; Graves Reservoir S.P.

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
GR-001 <b>Location:</b> Roof Of Reservoir / Roof Core / Black	915091914-01	<b>No</b>	NAD (by CVES) by Lateef MacIntosh on 10/01/15
<b>Analyst Description:</b> Black, Homogeneous, Fibrous, Roofing <b>Asbestos Types:</b> <b>Other Material:</b> Fibrous glass 20 %, Non-fibrous 80 %			
GR-002 <b>Location:</b> Roof Of Wier Bldg / Roof Core / Black	915091914-02	<b>No</b>	NAD (by CVES) by Lateef MacIntosh on 10/01/15
<b>Analyst Description:</b> Black, Homogeneous, Fibrous, Roofing <b>Asbestos Types:</b> <b>Other Material:</b> Fibrous glass 15 %, Non-fibrous 85 %			
GR-003 <b>Location:</b> Roof Of Control Rm / Roof Core / Black	915091914-03	<b>No</b>	NAD (by CVES) by Lateef MacIntosh on 10/01/15
<b>Analyst Description:</b> Black, Homogeneous, Fibrous, Roofing <b>Asbestos Types:</b> <b>Other Material:</b> Fibrous glass 15 %, Non-fibrous 85 %			
GR-004 <b>Location:</b> Roof Of Chlorine Inj. Station / Roof Core / Black	915091914-04	<b>No</b>	NAD (by CVES) by Lateef MacIntosh on 10/01/15
<b>Analyst Description:</b> Black, Homogeneous, Fibrous, Roofing <b>Asbestos Types:</b> <b>Other Material:</b> Cellulose 10 %, Fibrous glass 10 %, Non-fibrous 80 %			
GR-005 <b>Location:</b> Roofs (All) / Parapit Walls At Roof Vents / Black	915091914-05	<b>No</b>	NAD (by CVES) by Lateef MacIntosh on 10/01/15
<b>Analyst Description:</b> Black, Homogeneous, Fibrous, Roofing <b>Asbestos Types:</b> <b>Other Material:</b> Fibrous glass 15 %, Non-fibrous 85 %			

Client Name: Group Delta Consultants

**PLM Bulk Asbestos Report**

IR15-035; MWH; Graves Reservoir S.P.

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
GR-006	915091914-06	<b>Yes</b>	2 %
<b>Location:</b> Roof Of Reservoir / Roof Penetration Mastic / Black			(by CVES) by Lateef MacIntosh on 10/01/15
<b>Analyst Description:</b> Black, Homogeneous, Fibrous, Mastic			
<b>Asbestos Types:</b> Chrysotile 2.0 %			
<b>Other Material:</b> Non-fibrous 98 %			
GR-007	915091914-07	<b>No</b>	NAD
<b>Location:</b> Roof Of Reservoir / Roof Penetration Mastic / Black			(by CVES) by Lateef MacIntosh on 10/01/15
<b>Analyst Description:</b> Black/Silver, Homogeneous, Non-Fibrous, Mastic			
<b>Asbestos Types:</b>			
<b>Other Material:</b> Fibrous glass 3 %, Non-fibrous 97 %			
GR-008	915091914-08	<b>Yes</b>	4 %
<b>Location:</b> Roof Of Reservoir (At Vents) Roof Penetration Mastic At Vents / Black			(by CVES) by Lateef MacIntosh on 10/01/15
<b>Analyst Description:</b> Black, Homogeneous, Fibrous, Mastic			
<b>Asbestos Types:</b> Chrysotile 4.0 %			
<b>Other Material:</b> Non-fibrous 96 %			
GR-009	915091914-09	<b>No</b>	NAD
<b>Location:</b> Roof Of Wier Bldg / Roof Penetration Mastic / Black			(by CVES) by Lateef MacIntosh on 10/01/15
<b>Analyst Description:</b> Black, Homogeneous, Non-Fibrous, Mastic			
<b>Asbestos Types:</b>			
<b>Other Material:</b> Cellulose 10 %, Non-fibrous 90 %			
GR-010	915091914-10	<b>No</b>	NAD
<b>Location:</b> Roof Of Control Room / Roof Of Penetration Mastic / Black			(by CVES) by Lateef MacIntosh on 10/01/15
<b>Analyst Description:</b> Black, Homogeneous, Fibrous, Mastic			
<b>Asbestos Types:</b>			
<b>Other Material:</b> Cellulose 10 %, Non-fibrous 90 %			
GR-011	915091914-11	<b>No</b>	NAD
<b>Location:</b> Reservoir Perimeter / Concrete / Gray			(by CVES) by Lateef MacIntosh on 10/01/15
<b>Analyst Description:</b> Beige/Grey, Homogeneous, Non-Fibrous, Cementitious, Concrete			
<b>Asbestos Types:</b>			
<b>Other Material:</b> Non-fibrous 100 %			

**PLM Bulk Asbestos Report**

IR15-035; MWH; Graves Reservoir S.P.

<b>Client No. / HGA</b>	<b>Lab No.</b>	<b>Asbestos Present</b>	<b>Total % Asbestos</b>
GR-012	915091914-12	<b>No</b>	NAD
<b>Location:</b> Reservoir Stem Wall / Concrete / Gray / Pink			(by CVES) by Lateef MacIntosh on 10/01/15
<b>Analyst Description:</b> Beige/Grey, Homogeneous, Non-Fibrous, Cementitious, Concrete			
<b>Asbestos Types:</b>			
<b>Other Material:</b> Non-fibrous 100 %			
GR-013	915091914-13	<b>No</b>	NAD
<b>Location:</b> Well Pit Pump Valve Assembly / Coupling Gaskets / Aqua			(by CVES) by Lateef MacIntosh on 10/01/15
<b>Analyst Description:</b> Beige/Blue/Black, Homogeneous, Fibrous, Gasket			
<b>Asbestos Types:</b>			
<b>Other Material:</b> Cellulose 15 %, Non-fibrous 85 %			
GR-014	915091914-14	<b>No</b>	NAD
<b>Location:</b> Main Intake Pipe Valve Assembly / Coupling Gaskets / Black			(by CVES) by Lateef MacIntosh on 10/01/15
<b>Analyst Description:</b> Beige/Blue/Black, Homogeneous, Fibrous, Gasket			
<b>Asbestos Types:</b>			
<b>Other Material:</b> Cellulose 15 %, Non-fibrous 85 %			
GR-015	915091914-15	<b>No</b>	NAD
<b>Location:</b> Sand Box - 1 Out Flow Valve Assembly / Coupling Gaskets / Black			(by CVES) by Lateef MacIntosh on 10/01/15
<b>Analyst Description:</b> Beige/Blue/Black, Homogeneous, Fibrous, Gasket			
<b>Asbestos Types:</b>			
<b>Other Material:</b> Cellulose 10 %, Non-fibrous 90 %			
GR-016	915091914-16	<b>No</b>	NAD
<b>Location:</b> Exterior Check Valves Adjacent Control Room / Check Valve Gasket / Black			(by CVES) by Lateef MacIntosh on 10/01/15
<b>Analyst Description:</b> Black/Blue, Homogeneous, Fibrous, Gasket			
<b>Asbestos Types:</b>			
<b>Other Material:</b> Cellulose 15 %, Non-fibrous 85 %			
GR-017	915091914-17	<b>Yes</b>	3 %
<b>Location:</b> Well Pit Pump Access Door (Metal) Bolt Edge Sealant / Black			(by CVES) by Lateef MacIntosh on 10/01/15
<b>Analyst Description:</b> Black, Homogeneous, Non-Fibrous, Sealant			
<b>Asbestos Types:</b> Chrysotile 3.0 %			
<b>Other Material:</b> Non-fibrous 97 %			

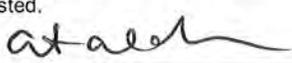
# PLM Bulk Asbestos Report

IR15-035; MWH; Graves Reservoir S.P.

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
GR-018	915091914-18	Yes	3 %
<b>Location:</b> Control Room Ceiling (Above Transformers) Textured Ceiling Coating / White <b>Analyst Description:</b> White, Homogeneous, Non-Fibrous, Ceiling Texture <b>Asbestos Types:</b> Chrysotile 3.0 % <b>Other Material:</b> Non-fibrous 97 %			(by CVES) by Lateef MacIntosh on 10/01/15
GR-019	915091914-19	No	NAD
<b>Location:</b> Control Room Ceiling Below Texture Coat / Concrete / Mortar Ceiling Coating / Gray <b>Analyst Description:</b> White/Brown/Beige, Homogeneous, Non-Fibrous, Cementitious, Cementitious Materi <b>Asbestos Types:</b> <b>Other Material:</b> Non-fibrous 100 %			(by CVES) by Lateef MacIntosh on 10/01/15
GR-020	915091914-20	No	NAD
<b>Location:</b> Control Room Ceiling Below Texture Coat / Concrete / Mortar Ceiling Coating / Gray <b>Analyst Description:</b> White/Brown/Beige, Homogeneous, Non-Fibrous, Cementitious, Cementitious Materi <b>Asbestos Types:</b> <b>Other Material:</b> Non-fibrous 100 %			(by CVES) by Lateef MacIntosh on 10/01/15
GR-021	915091914-21	No	NAD
<b>Location:</b> Metal Chain Link Fence Around Transformers / Silver Paint / Silver <b>Analyst Description:</b> Silver/Grey, Homogeneous, Non-Fibrous, Paint <b>Asbestos Types:</b> <b>Other Material:</b> Non-fibrous 100 %			(by CVES) by Lateef MacIntosh on 10/01/15

**Reporting Notes:**

Analyzed By: Lateef MacIntosh ; Date Analyzed: 10/1/2015 10/1/15  
 \*NAD = no asbestos detected; Detection Limit <1%; Reporting Limits: CVES = 1%, 400 Pt Ct = 0.25%, 1000 Pt Ct = 0.1%; NA = not analyzed; NA/PS = not analyzed / positive stop; NVA = No Visible Asbestos; PLM (polarized light microscopy) Bulk Asbestos Analysis by EPA 600/R-93/116, including requirements for EPA 600/M4-82-020 per 40 CFR 763 (NVLAP Lab #200346-0, CA ELAP lab #2322); Note: PLM is not consistently reliable in detecting asbestos in floor coverings and similar NOB materials. TEM is currently the only method that can be used to determine if this material can be considered or treated as non-asbestos-containing in New York State (also see EPA Advisory for floor tile, FR 59, 146, 38970, 8/1/94). NIST Accreditation requirements mandate that this report must not be reproduced except in full with the approval of the laboratory. This PLM report relates ONLY to the items tested.

Reviewed By: 



# Asbestos Bulk Sample Log

915091914

Client: MWH  
 Location: GRAVES RESERVOIR S.P.  
 Collected By: C. LEINSTER

Date: 9/29/15  
 Project Number: FR15-035  
 CAC or SST No: 07-4204

Sample No.	Sample Location	Homo. Area	Material	Description	Quantity (SF/LF)	Friability (F/NF)
GR-001	ROOF OF RESERVOIR	A	ROOF CORE	BLACK	20,000 SF	N
GR-002	ROOF OF WIER BLDG.	A	ROOF CORE	BLACK	1,000 SF	N
GR-003	ROOF OF CONTROL ROOM	A	ROOF CORE	BLACK	850 SF	N
GR-004	ROOF OF CHIMNEY <del>IND.</del> U.S. STATION	A	ROOF CORE	BLACK	180 SF	N
GR-005	ROOFS (ALL)	B	PARAPIT WALLS AT ROOF VENTS	BLACK	100 SF TOTAL	N
GR-006	ROOF OF RESERVOIR	C	ROOF PENETRATION MASTIC	BLACK	700 SF TOTAL	N
GR-007	ROOF OF RESERVOIR	↓	↓	↓	↑ COUNT WITH	N
GR-008	↓ (AT VENTS)	↓	ROOF PENETRATION MASTIC AT VENTS	↓	100 SF	N
GR-009	ROOF OF WIER BLDG.	C	ROOF PENETRATION MASTIC	BLACK	↑ COUNT WITH ABOVE 700 SF	N
GR-010	ROOF OF CONTROL ROOM	↓	↓	↓	↓	N

Analytical Method: PLM Turnaround Time: Same Day 24-hr 3 Day 5 Day  
 Lab Results: Please E-mail results to: jerrys@grounddelta.com

CHAIN OF CUSTODY:

1. <u>C. Leinster</u> Print/Signature	<u>CSSA</u> Title	<u>9/29/15 - TO FED EX</u> Inclusive Dates
2. <u>[Signature]</u> Print/Signature	_____ Title	<u>9/30/15 009100</u> Inclusive Dates
3. _____ Print/Signature	_____ Title	_____ Inclusive Dates



915091914

# Asbestos Bulk Sample Log

Client: MWH  
 Location: GRAVES RESERVOIR S.P.  
 Collected By: C. LEWIS

Date: 9/29/15  
 Project Number: IR15-035  
 CAC or SST No: 07-4004

Sample No.	Sample Location	Homo. Area	Material	Description	Quantity (SF/LF)	Friability (F/NF)
GR-011	RESERVOIR PERIMETER	D	CONCRETE	GRAY	6,000 SF	N
GR-012	RESERVOIR STEM WALL	E	↓	GRAY/PINK	2,000 SF (EXPOSED)	N
GR-013	WELL PIT PUMP VALVE ASSEMBLY	F	COUPLING BASKETS	AQUA	16 SF	N
GR-014	MAIN INTAKE PIPE VALVE ASSEMBLY	↓	↓	BLACK	20 SF	N
GR-015	SAND BOX -1 OUTFLOW VALVE ASSEMBLY	↓	↓	↓	5 SF	N
GR-016	EXTERIOR CHECK VALVES ADJACENT CONTROL ROOM	G	CHECK VALVE GASKET	↓	2 SF	N
GR-017	WELL PIT PUMP ACCESS DOOR (METAL)	H	BOLT/EDGE SEALANT	↓	5 SF	N
GR-018	CONTROL ROOM CEILING (ABOVE TRANSFORMERS)	I	TEXTURED CEILING COATING	WHITE	280 SF	F
GR-019	CONTROL ROOM CEILING BELOW TEXTURE COAT	J	CONCRETE/MORTAR CEILING COATING	GRAY	280 SF	N
GR-020	CONTROL ROOM CEILING BELOW TEXTURE COAT	↓	↓	↓	↓	↓
GR-021	METAL CHAIN-LINK FENCE AROUND TRANSFORMERS	K	SILVER PAINT	SILVER	20 SF	N

Analytical Method: PLM Turnaround Time: Same Day 24-hr 3 Day 5 Day

Lab Results: Please E-mail results to: jerrys@groupdelta.com

CHAIN OF CUSTODY:

1. <u>C. Lewis</u> Print/Signature	<u>OSST</u> Title	<u>9/29/15 To FedEx</u> Inclusive Dates
2. <u>[Signature]</u> Print/Signature	 Title	<u>9/30/15 @ 0900</u> Inclusive Dates
3. Print/Signature	 Title	 Inclusive Dates



Please Reply To:

**AmeriSci Los Angeles**

24416 S. Main Street, Ste 308

Carson, California 90745

TEL: (310) 834-4868 • FAX: (310) 834-4772

**FACSIMILE TELECOPY TRANSMISSION**

**To:** Jerry Sherman  
Group Delta Consultants  
**Fax #:**

**From:** Arturo A. Aldana  
**AmeriSci Job #:** 915111031  
**Subject:** PLM 24 hour Results  
**Client Project:** IR641.2; MWH; Graves Reservoir

**Email:** jerrys@groupdelta.com,miket@groupdelta.com

**Date:** Tuesday, November 03, 2015

**Time:** 10:47:48

**Comments:**

**Number of Pages:** 4

(including cover sheet)

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## PLM Bulk Asbestos Report

Group Delta Consultants  
Attn: Jerry Sherman  
9245 Activity Road  
Suite 103  
San Diego, CA 92126

**Date Received** 11/02/15    **AmeriSci Job #** 915111031  
**Date Examined** 11/03/15    **P.O. #**  
**Page** 1 of 2  
**RE:** IR641.2; MWH; Graves Reservoir

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
GR2-001	915111031-01	No	NAD
Location: Main Ceiling Support Beams (Reservoir Int.) Treated Wood Beams / Black			(by CVES) by Arturo A. Aldana on 11/03/15
<b>Analyst Description:</b> Black, Homogeneous, Non-Fibrous, Bulk Material <b>Asbestos Types:</b> <b>Other Material:</b> Non-fibrous 100 %			
GR2-002	915111031-02	No	NAD
Location: Side Walls Reservoir Interior / Tar / Mastic Crack Patch / Black			(by CVES) by Arturo A. Aldana on 11/03/15
<b>Analyst Description:</b> Black, Homogeneous, Non-Fibrous, Bulk Material <b>Asbestos Types:</b> <b>Other Material:</b> Non-fibrous 100 %			
GR2-003	915111031-03	No	NAD
Location: Vertical Columns Throughout Res. Interior / Rubberized Coating / Black			(by CVES) by Arturo A. Aldana on 11/03/15
<b>Analyst Description:</b> Grey, Homogeneous, Non-Fibrous, Bulk Material <b>Asbestos Types:</b> <b>Other Material:</b> Non-fibrous 100 %			
GR2-004	915111031-04	Yes	Trace (<1 %)
Location: Bottom Surface Reservoir Interior / Tar / Mastic Crack Patch / Black			(by CVES) by Arturo A. Aldana on 11/03/15
<b>Analyst Description:</b> Black, Homogeneous, Non-Fibrous, Bulk Material <b>Asbestos Types:</b> Chrysotile <1. % <b>Other Material:</b> Non-fibrous 100 %			
GR2-005	915111031-05	No	NAD
Location: Bottom Surface Reservoir Interior / Accumulated Silt / Brown			(by CVES) by Arturo A. Aldana on 11/03/15
<b>Analyst Description:</b> Brown, Homogeneous, Non-Fibrous, Bulk Material <b>Asbestos Types:</b> <b>Other Material:</b> Non-fibrous 100 %			

See Reporting notes on last page

Client Name: Group Delta Consultants

# PLM Bulk Asbestos Report

IR641.2; MWH; Graves Reservoir

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**Reporting Notes:**

Analyzed By: Arturo A. Aldana at alda; Date Analyzed: 11/3/2015 11/3/15

\*NAD = no asbestos detected; Detection Limit <1%; Reporting Limits: CVES = 1%, 400 Pt Ct = 0.25%, 1000 Pt Ct = 0.1%; NA = not analyzed; NA/PS = not analyzed / positive stop; NVA = No Visible Asbestos; PLM (polarized light microscopy) Bulk Asbestos Analysis by EPA 600/R-93/116, including requirements for EPA 600/M4-82-020 per 40 CFR 763 (NVLAP Lab #200346-0, CA ELAP lab #2322); Note: PLM is not consistently reliable in detecting asbestos in floor coverings and similar NOB materials. TEM is currently the only method that can be used to determine if this material can be considered or treated as non-asbestos-containing in New York State (also see EPA Advisory for floor tile, FR 59, 146, 38970, 8/1/94). NIST Accreditation requirements mandate that this report must not be reproduced except in full with the approval of the laboratory. This PLM report relates ONLY to the items tested.

Reviewed By: at alda

# Asbestos Bulk Sample Log

91511031



Client: MWH  
 Location: GRAVES RESERVOIR  
 Collected By: D. LEWIS

Date: 10/30/15  
 Project Number: FR641-2  
 CAC or SST No: 07-4204

Sample No.	Sample Location	Homo. Area	Material	Description	Quantity (SF/LF)	Friability (F/NF)
GR2-001	MAIN CELLING SUPPORT BEAMS (RESERVOIR INT.)	A	TREATED WOOD BEAMS	BLACK	13 @ 25' x 10" x 12"	N
GR2-002	SIDE WALLS - RESERVOIR INTERIOR	B	TAR/MASTIC CRACK PATCH	BLACK	APX. 100 SF	N
GR2-003	VERTICAL COLUMNS THROUGHOUT RES. INTERIOR	C	RUBBERIZED COATING	BLACK	25 @ 40 SF	N
GR2-004	BOTTOM SURFACE - RESERVOIR INTERIOR	B	TAR/MASTIC CRACK PATCH	BLACK	APX. 200 SF	N
GR2-005	BOTTOM SURFACE RESERVOIR INTERIOR	D	ACCUMULATED SILT	BROWN	APX. 5000 SF	N
<del> </del>						
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<del> </del>						

Analytical Method: PLM

Turnaround Time: Same Day 24-hr 3 Day 5 Day

Lab Results: Please E-mail results to: jerrys@groudelta.com - AND - mariod@groudelta.com

CHAIN OF CUSTODY:

1. <u>D. Lewis</u> Print/Signature	<u>OSSJ</u> Title	<u>10/30/15 - To Fed Ex</u> Inclusive Dates
2. <u>K. [Signature]</u> Print/Signature	_____ Title	<u>11/2/15 @ 1010</u> Inclusive Dates
3. _____ Print/Signature	_____ Title	_____ Inclusive Dates

Reading	Type	Units	COMPONENT	SUBSTRATE	SIDE	CONDITION	COLOR	SITE	ROOM	Results	AL	PbC
1	ShutterCal	cps										0.51
2	Paint	mg / cm ^2			CALI			GRAVES RES		Neg	1	0.9
3	Paint	mg / cm ^2			CALI			GRAVES RES		Pos	1	1
4	Paint	mg / cm ^2	FLOOR	CONCRETE	A	POOR	TAN	GRAVES RES	EXTERIOR	Neg	1	0.9
5	Paint	mg / cm ^2	STAIRS	CONCRETE	A	POOR	TAN	GRAVES RES	EXTERIOR	Pos	1	1.6
6	Paint	mg / cm ^2	STEM WALL	CONCRETE	A	INTACT	TAN	GRAVES RES	EXTERIOR	Neg	1	0.09
7	Paint	mg / cm ^2	DOOR	WOOD	0	INTACT	TAN	GRAVES RES	EXTERIOR	Neg	1	0
8	Paint	mg / cm ^2	WALL	CONCRETE	C	INTACT	WHITE	GRAVES RES	SAND BOX 1	Neg	1	0
9	Paint	mg / cm ^2	PIPE	METAL	A	INTACT	BLUE	GRAVES RES	EXTERIOR	Neg	1	0
10	Paint	mg / cm ^2	VENT PIPE	METAL	D	INTACT	TAN	GRAVES RES	EXTERIOR	Neg	1	0.03
11	Paint	mg / cm ^2	DOOR CS	WOOD	D	INTACT	TAN	GRAVES RES	WELL PIT	Pos	1	1.3
12	Paint	mg / cm ^2	DOOR CS	WOOD	D	INTACT	TAN	GRAVES RES	SAND BOX 2	Neg	1	0.4
13	Paint	mg / cm ^2	DOOR CS	WOOD	D	INTACT	TAN	GRAVES RES	SAND BOX 1	Neg	1	0
14	Paint	mg / cm ^2	FLOOR	CONCRETE	0	POOR	GREEN	GRAVES RES	SAND BOX 1	Neg	1	0.7
15	Paint	mg / cm ^2	STAIRS	METAL	B	INTACT	BLUE	GRAVES RES	WELL PIT	Neg	1	0.8
16	Paint	mg / cm ^2	HANDRAIL	METAL	B	INTACT	BLUE	GRAVES RES	WELL PIT	Pos	1	7.9
17	Paint	mg / cm ^2	FLOOR	CONCRETE	0	POOR	BLUE	GRAVES RES	WELL PIT	Neg	1	0.3
18	Paint	mg / cm ^2	PIPE	METAL	0	INTACT	TAN	GRAVES RES	WELL PIT	Neg	1	0.09
19	Paint	mg / cm ^2	ELEC BOX	METAL	B	INTACT	BLUE	GRAVES RES	WELL PIT	Neg	1	0.04
20	Paint	mg / cm ^2	WALL	CONCRETE	B	INTACT	WHITE	GRAVES RES	WELL PIT	Neg	1	0
21	Paint	mg / cm ^2	DOOR	METAL	0	INTACT	GREEN	GRAVES RES	EXTERIOR	Neg	1	0.06
22	Paint	mg / cm ^2	PIPE	METAL	A	INTACT	TAN	GRAVES RES	EXTERIOR	Neg	1	0.4
23	Paint	mg / cm ^2	FLOOR	CONCRETE	0	POOR	GREEN	GRAVES RES	CHLORINE RM	Neg	1	0.12
24	Paint	mg / cm ^2	TRIM	WOOD	C	INTACT	WHITE	GRAVES RES	CHLORINE RM	Neg	1	0.02
25	Paint	mg / cm ^2	DOOR CS	WOOD	B	INTACT	TAN	GRAVES RES	CHLORINE RM	Neg	1	0.13
26	Paint	mg / cm ^2	DOOR	WOOD	B	INTACT	TAN	GRAVES RES	CHLORINE RM	Neg	1	0.01
27	Paint	mg / cm ^2	TRIM	WOOD	B	INTACT	TAN	GRAVES RES	CHLORINE RM	Neg	1	0
28	Paint	mg / cm ^2	FENCE	METAL	B	INTACT	GREEN	GRAVES RES	CONTROL RM	Pos	1	2.7
29	Paint	mg / cm ^2	WALL	CONCRETE	B	INTACT	TAN	GRAVES RES	CONTROL RM	Pos	1	3.1
30	Paint	mg / cm ^2	VENT	METAL	B	INTACT	TAN	GRAVES RES	CONTROL RM	Neg	1	0.6
31	Paint	mg / cm ^2	DOOR	METAL	A	INTACT	TAN	GRAVES RES	CONTROL RM	Neg	1	0
32	Paint	mg / cm ^2	DOOR CS	METAL	A	INTACT	TAN	GRAVES RES	CONTROL RM	Neg	1	0
33	Paint	mg / cm ^2	VENT	METAL	A	INTACT	BRN	GRAVES RES	CONTROL RM	Pos	1	3.9

34 Paint	mg / cm ^2	VALVE	METAL	A	POOR	TAN	GRAVES RES	CONTROL RM	Pos	1	2.2
35 Paint	mg / cm ^2	STEM WALL	CONCRETE	B	POOR	TAN	GRAVES RES	RESERVOIR	Pos	1	1.8
36 Paint	mg / cm ^2	TRIM	METAL	B	INTACT	WHITE	GRAVES RES	RESERVOIR	Neg	1	0
37 Paint	mg / cm ^2	VENT TRIM	METAL	B	INTACT	TAN	GRAVES RES	WEIR EXT	Neg	1	0
38 Paint	mg / cm ^2	VENT TRIM	WOOD	B	INTACT	TAN	GRAVES RES	WEIR EXT	Neg	1	0
39 Paint	mg / cm ^2	RAIN GUTTER	WOOD	C	INTACT	BRN	GRAVES RES	CONTROL RM	Neg	1	0.02
40 Paint	mg / cm ^2	DOWN SPOUT	WOOD	C	INTACT	TAN	GRAVES RES	CONTROL RM	Neg	1	0
41 Paint	mg / cm ^2	DOOR CS	WOOD	C	INTACT	TAN	GRAVES RES	CONTROL RM	Neg	1	0
42 Paint	mg / cm ^2	DOOR	METAL	C	POOR	TAN	GRAVES RES	CONTROL RM	Pos	1	2.4
43 Paint	mg / cm ^2	STORAGE	METAL	C	POOR	TAN	GRAVES RES	CONTROL RM	Neg	1	0.07
44 Paint	mg / cm ^2	STORAGE	WOOD	C	POOR	TAN	GRAVES RES	CONTROL RM	Neg	1	0.03
45 Paint	mg / cm ^2	VENT TRIM	METAL	C	INTACT	TAN	GRAVES RES	RESERVIOR	Neg	1	0
46 Paint	mg / cm ^2	VENT TRIM	WOOD	C	INTACT	TAN	GRAVES RES	RESERVIOR	Neg	1	0
47 Paint	mg / cm ^2	CONDUIT	METAL	A	INTACT	TAN	GRAVES RES	CONTROL RM	Neg	1	0.1
48 Paint	mg / cm ^2	WALL	CONCRETE	B	INTACT	WHITE	GRAVES RES	CONTROL RM	Neg	1	0
49 Paint	mg / cm ^2	BEAM	WOOD	0	INTACT	WHITE	GRAVES RES	CONTROL RM	Pos	1	2.9
50 Paint	mg / cm ^2	BEAM	CONCRETE	0	INTACT	WHITE	GRAVES RES	CONTROL RM	Neg	1	0.02
51 Paint	mg / cm ^2	BEAM SUPPOR	METAL	0	INTACT	WHITE	GRAVES RES	CONTROL RM	Neg	1	0.9
52 Paint	mg / cm ^2	FLOOR	CONCRETE	0	POOR	BLUE	GRAVES RES	CONTROL RM	Neg	1	0.22
53 Paint	mg / cm ^2	CONDUIT	METAL	B	INTACT	WHITE	GRAVES RES	CONTROL RM	Neg	1	0.07
54 Paint	mg / cm ^2	ELEC BOX	METAL	B	INTACT	GREY	GRAVES RES	CONTROL RM	Neg	1	0.01
55 Paint	mg / cm ^2	STAIRS	WOOD	B	INTACT	BLUE	GRAVES RES	CONTROL RM	Pos	1	1.5
56 Paint	mg / cm ^2	HANDRAIL	WOOD	B	INTACT	GREEN	GRAVES RES	CONTROL RM	Neg	1	0.23
57 Paint	mg / cm ^2	HANDRAIL	METAL	B	INTACT	GREEN	GRAVES RES	CONTROL RM	Neg	1	0.18
58 Paint	mg / cm ^2	CABINET	WOOD	B	INTACT	WHITE	GRAVES RES	CONTROL RM	Pos	1	2.5
59 Paint	mg / cm ^2	FENCE	METAL	C	INTACT	SILVER	GRAVES RES	CONTROL RM	Neg	1	0.11
60 Paint	mg / cm ^2	EXH FLUE	METAL	A	INTACT	GREEN	GRAVES RES	EXTERIOR	Neg	1	0.11
61 Paint	mg / cm ^2			CALI			GRAVES RES		Neg	1	0.9
62 Paint	mg / cm ^2			CALI			GRAVES RES		Pos	1	1.1

