Data Gap Investigation Report
Southwest Operable Unit
San Gabriel Valley Area 3 Superfund Site
Los Angeles County, California

EPA Contract No. EP-S9-08-04

Alhambra RI/FS Task Order No. 016-RICO-09ES

CH2M HILL Project No. 385133

Prepared for

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Contents

Exhibits

Appendixes

Tables

Figures

Acronyms and Abbreviations

µg/kg	micrograms per kilogram
µg/L	micrograms per liter
1,1-DCA	1,1-dichloroethane
1,1-DCE	1,1-dichloroethene
1,2-DCA	1,2-dichloroethane
1,2,3-TCP	1,2,3-trichloropropane
ARCH	air rotary casing hammer
Area 3	San Gabriel Valley Area 3 Superfund Site
bgs	below ground surface
CDDW	California State Water Resources Control Board, Division of Drinking Water
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
cis-1,2-DCE	cis-1,2-dichloroethene
COPC	contaminant of potential concern
DGI	data gap investigation
DO	dissolved oxygen
DOT	U.S. Department of Transportation
DTSC	California Department of Toxic Substances Control
EPA	U.S. Environmental Protection Agency
FS	feasibility study
ft/ft	foot per foot
IDW	investigation-derived waste
LARWQCB	California Regional Water Quality Control Board, Los Angeles Region
MCL	maximum contaminant level
msl	mean sea level
NDMA	n-nitrosodimethylamine
NEOU	Northeast Operable Unit
NEWP	National Exploration Wells & Pumps
NL	notification level
NPL	National Priorities List
NW	northwest
ORP	oxidation-reduction potential
OU	operable unit
PCE	tetrachloroethene

PID	photoionization detector
QAPP	quality assurance project plan
QC	quality control
RAO	remedial action objective
RI	remedial investigation
RSL	Regional Screening Level
SGV	San Gabriel Valley
SVE	soil vapor extraction
SWOU	southwest operable unit
TCE	trichloroethene
TPH-DRO	total petroleum hydrocarbons, diesel-range organics
TPH-GRO	total petroleum hydrocarbons, gasoline-range organics
USA	Underground Service Alert
VOC	volatile organic compound
Watermaster	Main San Gabriel Basin Watermaster

SECTION 1

Area 3 Background

1.1 Introduction

The U.S. Environmental Protection Agency (EPA) prepared this Data Gap Investigation (DGI) Report for the Southwest Operable Unit (SWOU) of the San Gabriel Valley (SGV) Area 3 Superfund Site (Area 3), Los Angeles County, California. EPA conducted this DGI in accordance with the following documents:

- *Data Gap Investigation Work Plan, Southwest Area 3, San Gabriel Valley Area 3 Superfund Site, Los Angeles County, California* (EPA, 2014a)
- *Quality Assurance Project Plan for Data Gap Investigations at San Gabriel Valley Area 3 Superfund Site, Los Angeles County, California, Addendum 4* (QAPP) (EPA, 2014b).

This report includes information on Area 3 background, SWOU field activities, DGI results, and conclusions.

1.2 Area 3 Site

Under the authority of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), EPA placed Area 3 and three other Superfund sites in SGV on the National Priorities List (NPL) in May 1984 based on detections of trichloroethene (TCE) and tetrachloroethene (PCE) in water supply production wells. Figure 1 shows the geographic location of Area 3 in relation to the other SGV Operable Unit (OU) Superfund sites. The other SGV Superfund sites are:

- Area 1 – South El Monte, El Monte, and Whittier Narrows OUs
- Area 2 – Baldwin Park OU
- Area 4 – Puente Valley OU

Area 3 is a 19-square-mile area containing regions of groundwater contamination underlying portions of six cities in Los Angeles County, California. The main sources of contamination in groundwater appear to include former manufacturing and chemical storage facilities located primarily in the southwest portion of Area 3 (the SWOU, which is the subject of this investigation), and dry cleaning facilities located throughout Area 3. Currently, six water purveyors ensure that all drinking water extracted from production wells in Area 3 meets federal and state standards through treatment, blending, and taking contaminated wells out of service.

In 1999, EPA initiated a remedial investigation (RI) that focused on evaluating regional groundwater contamination in Area 3. In 2000, EPA coordinated with the California Regional Water Quality Control Board, Los Angeles Region (LARWQCB) to initiate investigations of potential sources of volatile organic compound (VOC) contamination in groundwater underlying Area 3. LARWQCB continues to lead the investigations (and remediation) of VOC sources in the SWOU, with the exception of two sites where the California Department of Toxic Substances Control (DTSC) has led the investigations.

In 2009, EPA finalized an RI report that summarizes the Area 3 conceptual site model for geology and hydrogeology, nature and extent of contamination associated with key contaminants of potential concern (COPCs), and findings of a baseline human health risk assessment (EPA, 2009).

EPA concluded in the RI report that there are not large, interconnected, regional VOC plumes in Area 3 groundwater, but rather the elevated levels of contamination appear primarily within three geographic source areas identified as follows:

- Southwest Source Area (now designated as the SWOU)
- Northeast Source Area (now designated as the Northeast OU or NEOU)
- Northwest (NW) Source Area

Additionally, EPA concluded that data gaps existed in the conceptual site model in relation to potential sources (facilities) of contamination and the magnitude of residual sources, and that addressing these data gaps would be necessary to select appropriate actions for remediation of groundwater contamination in Area 3.

Between 2010 and 2012, EPA evaluated potential remedial action objectives (RAOs) and remedial alternatives for a feasibility study (FS). Preliminary conclusions included the following:

- EPA would address groundwater contamination in Area 3 through facility-specific cleanup efforts within each Area 3 source area (SWOU, NEOU, and NW).
- If necessary, EPA would address the significant facility-specific vadose zone source(s) contributing to groundwater contamination within each Area 3 source area (SWOU, NEOU, and NW).

In addition, EPA assumed regulatory oversight authority of five facilities from LARWQCB to expedite facility investigations in an effort to delineate facility-specific data gaps within the three primary Area 3 source areas.

EPA conducted initial facility-specific investigations to identify sources and define the nature and extent of key COPCs in the three primary Area 3 source areas between March and May 2013. EPA performed investigations at four facilities: Facilities 12 and 190 (adjacent properties) in the SWOU, Facility 31 in the NW Source Area, and Facility 35 upgradient of the NEOU. EPA described the planned investigations at each facility in an overall facility investigation QAPP (EPA, 2013a) and facility-specific Work Plans (EPA, 2013b, 2013c, 2013d)

EPA installed four soil vapor monitoring wells with multiple soil vapor probes at Facilities 12, 190, 31, and 35. EPA evaluated COPCs in groundwater and the upward or downward migration pathway(s) within the vadose zone during the facility investigations. The results of the facility investigations at Facilities 12, 190, and 35 are documented in Field Investigation Reports (EPA, 2014d, 2014e).

Based on the initial results at Facility 31, EPA installed one groundwater monitoring well with multiple soil vapor probes. Additionally, in May 2014 EPA conducted a second phase of investigation at Facility 31 to evaluate potential vapor intrusion as described in a Phase II Investigation Work Plan (EPA, 2014c).

The following sections provide a summary of Area 3 geography, geology and hydrogeology, groundwater production, and conceptual site model. For more details, refer to the Final RI Report (EPA, 2009).

1.2.1 Area 3 Geography

Area 3 is located in the far western end of the San Gabriel Basin. The San Gabriel Basin is a bowl-shaped topographic depression in the SGV. The San Gabriel Basin is bound by the San Gabriel Mountains to the north; by low-lying hills to the southwest (Repetto Hills), south (Montebello Hills), and southeast (Puente Hills and San Jose Hills); and by a bedrock high to the east that separates the San Gabriel Basin from the Upper Santa Ana Valley Basin. The San Gabriel River, Rio Hondo, and associated tributaries bisect the Montebello Hills and the Puente Hills at Whittier Narrows.

The ground surface of Area 3 slopes generally toward the southeast. However, the extreme southwest portion of Area 3 slopes to the southwest. The highest point occurs in the northwest, where the Repetto Hills exceed an elevation of 800 feet above mean sea level (msl). The lowest point occurs in the southeast, where the Rubio Wash intersects the San Bernardino Freeway at an elevation less than 300 feet above msl.

1.2.2 Area 3 Geology and Hydrogeology

The geology of Area 3 consists of unconsolidated alluvium overlying marine sedimentary bedrock. The bedrock sequence with increasing depth consists of the Pico, Puente, and Topanga Formations, and the Santa Monica Slate basement complex. The hills in the western portion of Area 3 comprise the Pico, Puente, and Topanga Formations. A structural bedrock discontinuity bisects the western and eastern portions of

Area 3. The steep drop in the top of bedrock surface or an unnamed inferred fault zone in the western portion of Area 3 may be associated with the Whittier Fault Zone (Lamar, 1970).

The hydrostratigraphy and aquifer properties of Area 3 are distinctly different to the west and east of the structural bedrock discontinuity. The western Area 3 alluvium primarily consists of relatively fine-grained sediments with less prevalent layers of coarse-grained sediments. The eastern Area 3 alluvium primarily consists of a thick sequence of coarse-grained to fine-grained sediments and forms a heterogeneous alluvial aquifer (Lamar, 1970).

Three distinct groundwater zones occur in Area 3: shallow, intermediate, and deep. The shallow groundwater zone is the first-encountered groundwater in Area 3, with the exception of the western area where the shallow groundwater zone is absent. Each groundwater zone generally dips to the southeast. Although there is considerably variability across Area 3, the transition between groundwater zones is typically observed between 200 and 250 feet below ground surface (bgs) for the shallow and intermediate zones, and between 450 and 650 feet bgs for the intermediate and deep zones (EPA, 2009). Currently, the depth to groundwater ranges from 65 to 195 feet bgs in western Area 3 and from 190 to 365 feet bgs in eastern Area 3.

Groundwater in the western alluvial aquifer flows generally southeastward to eastward following the bedrock structural features, and exhibits steeper horizontal hydraulic gradients than the eastern alluvial aquifer. Finer-grained alluvium restricts groundwater flow.

The eastern alluvial aquifer consists of multiple, leaky aquifers, with groundwater flow generally to the west/southwest in the vicinity of the NEOU. The main influences on groundwater flow in the eastern alluvial aquifer include groundwater pumping, the presence of fine-grained units that either allow leakage or obstruct vertical groundwater flow, and limited groundwater recharge.

1.2.3 Area 3 Groundwater Production

Prior to the late 1940s, the western and eastern alluvial aquifers exhibited similar groundwater level fluctuations and direct hydraulic communication. Groundwater elevations were higher than the top of the bedrock elevation in the western portion of Area 3, resulting in groundwater flow to the east.

After the 1940s, groundwater levels in the eastern alluvial aquifer significantly dropped because of increased groundwater production in Area 3 coupled with extended periods of drought. Natural recharge processes no longer met the demands of groundwater usage, resulting in a groundwater deficit in the San Gabriel Basin.

As groundwater levels dropped below the western bedrock elevation, the western alluvial aquifer hydraulically separated from the eastern alluvial aquifer. Abandonment of production wells in the western portion of Area 3 subsequently occurred.

In 1973, to resolve supply shortages, the court adjudicated water rights in the San Gabriel Basin and appointed the Main San Gabriel Basin Watermaster (Watermaster) to manage groundwater resources. Groundwater in the San Gabriel Basin provides the primary supply of water for local residents and businesses in SGV; six water purveyors currently operate and serve water from production wells in Area 3. Recent production rate changes indicate a shift in the spatial distribution of pumping toward the south and east in Area 3.

Currently, one water purveyor (City of Alhambra) operates a water treatment plant to remove VOCs and nitrates from groundwater extracted from production wells in Area 3 to ensure that all drinking water meets federal and state standards. All other water purveyors in Area 3 meet federal and state standards by blending production wells and shutting down contaminated wells.

1.2.4 Area 3 Conceptual Site Model

The conceptual site model for the nature and extent of VOCs, other contamination, and migration pathways in Area 3 is as follows:

- VOCs at concentrations that exceed screening levels (California or federal primary maximum contaminant level [MCL] or California State Water Resources Control Board, Division of Drinking Water [CDDW] notification level [NL]) for drinking water have impacted local water purveyors' groundwater production wells in Area 3.
- The extent of VOC contamination has not changed significantly for decades primarily because of continuous groundwater pumping by water purveyors in Area 3.
- A structural bedrock discontinuity bisects the western and eastern portions of Area 3, which results in distinct differences in the nature and extent of groundwater properties and contamination on either side of the structural discontinuity.
- VOC distribution in Area 3 appears to be geographically localized; three primary source areas have been identified in Area 3:
  - SWOU
  - NEOU
  - NW Source Area
- Geographic localization of VOCs and the stabilization of these geographic source areas are influenced by:
  - The structural discontinuity that bisects Area 3 hydrogeologically into western and eastern aquifers
  - Many decades of stable regional groundwater levels from water purveyor (Watermaster) control
- VOC geographic sources are based on collected and evaluated Area 3 data; therefore, other source areas may be identified as more investigation data in Area 3 are collected and evaluated.
- Groundwater contamination in Area 3 is primarily limited to the following five chlorinated VOCs and inorganic anion; these are referred to as the key COPCs:
  - Chlorinated VOCs: PCE, TCE, cis-1,2-dichloroethene (cis-1,2-DCE), 1,2,3-trichloropropane (1,2,3-TCP), and carbon tetrachloride
  - Inorganic anion: Perchlorate
- VOCs are associated with commercial, manufacturing, and industrial facilities that use solvents and degreasers (dry cleaners, metal finishing, and chemical storage). VOC detections are geographically localized in Area 3. Perchlorate is associated with rocket fuel and explosives and agricultural fertilizers. Perchlorate detections are not localized in Area 3, but are widespread and occur at low concentrations throughout much of the SGV.
- PCE and TCE concentrations are predominant and have been detected throughout all Area 3 source areas, and on either side of the structural discontinuity. PCE and TCE rank in severity from highest to lowest in the SWOU, NEOU, and NW Source Areas.

1.3 SWOU Data Gap Summary

EPA identified 13 facilities that potentially could be contaminant source(s) within the SWOU. Data from one additional facility (Facility 22) are included and evaluated as part of this SWOU DGI because Facility 22 is located just south of the SWOU.

To facilitate implementation of the SWOU DGI, EPA grouped the 13 SWOU facilities into five subgeographies (numbered SW-1 through SW-5) based on their proximity to each other and the approximate depth to groundwater (Figure 2). EPA expects to redraw the subgeography boundaries shown in Figure 2 using the results of this DGI and ongoing facility investigations.

Figure 2 shows SWOU facilities (plus Facility 22) and the five subgeographies identified in the DGI. SWOU subgeographies and facilities are as follows:

- SW-1: Facilities 5, 7, and 130
- SW-2: Facility 2
- SW-3: Facilities 1, 3, 4, 6, 10, and 11
- SW-4: Facility 20
- SW-5: Facilities 32 and 66

As of late 2014, 34 groundwater monitoring wells were present in and around the SWOU; this included 32 facility wells (including Facility 22) and 2 EPA wells. Ten of the 13 facilities, plus Facility 22, have installed groundwater monitoring wells. However, most of these facilities conducted groundwater monitoring annually for only 2 to 3 years between 2004 and 2011.

Nine of the facility monitoring wells are inactive and, prior to this DGI, had not been monitored for several years.

Table 1 provides a summary of SWOU facility background and operational history, investigation chronology, and remediation history and data.

1.3.1 SWOU Data Gaps and Feasibility Study Assumptions

EPA identified key factors that are likely to influence focused groundwater remedial alternatives within the SWOU including (1) the number of facilities with significant residual contamination, (2) the lateral and vertical extent of contamination near these residual sources, and (3) the varying depth to groundwater and groundwater flow directions.

SWOU facilities have not adequately characterized and delineated the lateral and vertical extent of VOCs in the vadose zone and/or groundwater, resulting in critical data gaps within the SWOU. Additionally, within the SWOU, the depth to groundwater varies from approximately 80 feet bgs to over 200 feet bgs, and localized groundwater flow directions appear to vary considerably, ranging from south to northeast.

During FS planning, EPA identified critical data gaps regarding groundwater and vadose zone sources and associated FS inputs as follows:

- Depth and direction of groundwater flow underlying each SWOU subgeography
- Lateral and vertical extent of COPCs in groundwater and vadose zone source areas
- Volume and mass of groundwater and vadose zone VOC contamination at major sources
- Oxidant demand data for saturated soil and groundwater
- Vadose zone and saturated zone lithologic data
- Vadose zone and saturated zone geotechnical physical property data

1.3.2 Scope of Work and Objectives

EPA conducted this DGI in two field mobilization phases (Phase I and Phase II). The data from the first phase were evaluated prior to performing the second phase so that boring locations could be modified if appropriate. Table 2 summarizes the field activities for each phase of the DGI.

During Phase I, EPA gauged all existing groundwater monitoring wells within and near the SWOU and collected samples from inactive wells that had not been sampled in several years. The intent of Phase I data collection activities was to:

- Identify the depth to groundwater and groundwater flow directions within each SWOU subgeography.
- Identify VOC concentrations in groundwater monitoring wells at facilities with inactive wells that had not been sampled in several years.

During Phase II, EPA installed boreholes near significant vadose zone and/or groundwater contaminant source(s) within SWOU subgeographies SW-1, SW-3, and SW-5, and collected soil and groundwater samples from the boreholes. The intent of Phase II data collection activities was to:

- Identify the depth to groundwater at each borehole location.
- Vertically delineate the vadose zone and groundwater VOC plumes.
- Estimate the oxidant demand for saturated soil and groundwater.
- Collect vadose and saturated zone lithologic data near contaminant sources.
- Evaluate vadose and saturated zone geotechnical physical properties.

EPA plans to evaluate the data from both phases to refine the RAOs and remedial alternatives in the FS as follows:

- Interpret the lateral and vertical extent of the VOC plumes.
- Calculate the mass and volume of the VOC plumes.
- Evaluate remedial technologies and design for vadose zone and groundwater treatment.
- Estimate the number and locations of remediation wells and remedy monitoring wells.
- Evaluate remediation and monitoring well designs.
- Decide if additional data are necessary to refine FS assumptions.

SECTION 2

Field Activities

This section describes the field activities completed as part of the DGI for Area 3 SWOU. EPA completed the DGI in two field mobilization phases (Phase I and Phase II), which included the following:

- Prefield Activities
  - Site reconnaissance and access agreements
  - Permits and procurement
- Field Activities – Phase I
  - Groundwater gauging
  - Groundwater sampling
- Field Activities – Phase II
  - Subsurface utility clearance
  - Borehole drilling
  - Soil sampling
  - Groundwater sampling
- Decontamination
- Investigation-Derived Waste (IDW) Management
- Quality Control (QC) Plan

Figure 2 shows the locations of groundwater monitoring wells gauged and/or sampled during Phase I and II borehole locations. Final borehole locations were selected based on review of Phase I results and access constraints encountered in the field.

Table 3 identifies the SWOU groundwater monitoring wells that EPA gauged and/or sampled during Phase I, including a summary of SWOU groundwater monitoring well construction details.

Table 4 (4A and 4B) includes a complete listing of the analyses requested for each sample matrix during Phase I monitoring well and Phase II borehole sampling:

- Table 4A: Phase I Facility Monitoring Well Sample Analysis Summary
- Table 4B: Phase II Borehole Soil and Groundwater Analysis Summary

2.1 Prefield Activities

EPA performed the following prefield activities prior to field mobilization:

- **Site Reconnaissance:** EPA conducted site visits to assess potential access issues and identify borehole locations.
- **Access Agreements:** EPA established access agreements with facility owners, as necessary, to gauge and sample groundwater wells and drill boreholes.
- **Encroachment Permits:** EPA obtained city encroachment permits and developed traffic control plans, as necessary.
- **Well Permits:** EPA obtained county permits for drilling boreholes down to the groundwater.
- **Subcontractor Procurement:** EPA procured subcontractors to perform the DGI.

2.2 Field Activities – Phase I

In Phase I, EPA conducted a synchronized groundwater elevation gauging event on existing SWOU monitoring wells and collected samples from wells that had not been sampled in several years.

Table 3 identifies the groundwater monitoring wells gauged and/or sampled during Phase I. Figure 2 shows the locations of the monitoring wells. Four new facility monitoring wells were installed during the planning and implementation of EPA's DGI: three on Facility 2 (W12IEMW8, W12IEMW9, and W12IEMW10), and one on Facility 20 (W12AOC1NW). EPA did not gauge or sample new facility wells during Phase I field activities. The locations of the new wells are shown in Figure 2; well construction details are summarized in Table 3.

2.2.1 Groundwater Gauging

The field team gauged the depth to groundwater in 29 monitoring wells within a 48-hour period. Prior to measuring the water level in a given well, the field team inspected its condition and noted any potential issues.

The field team measured the total depth of the well, recorded the depth to groundwater to the nearest 0.01 foot from the top of the casing using an electronic water level sounding device, and then collected two additional water level measurements to verify the initial reading. The field team decontaminated the sounding device between monitoring wells. Groundwater gauging field forms are included in Appendix A.

2.2.2 Groundwater Sampling

The field team collected groundwater samples from eight of the existing facility monitoring wells using low-flow purging and sampling procedures when possible. EPA planned to sample a ninth well (W12ARMW4 at Facility 32), but the well could not be located in the field. Prior to sample collection, the field team attempted to purge a minimum of three well volumes. Due to access restrictions and slow recovery during purging, the field team sampled some wells after removing only one to two well volumes, or collected grab samples. The volume of water purged from each well prior to sample collection is summarized on the field sheets included in Appendix A.

The field team used a turbidity meter and flow-through cell multiparameter meter to obtain groundwater quality measurements (pH, oxidation-reduction potential [ORP], dissolved oxygen [DO], temperature, and electrical conductivity). At wells that were purged, field parameter measurements were used to evaluate when groundwater had reached equilibrium and samples could be collected. Equilibrium was achieved when three consecutive parameter measurements did not change by more than the following: turbidity +/- 10 percent, DO +/- 10 percent, ORP and conductivity ±3 percent, and pH ±0.1. The recorded groundwater parameter measurements are shown on the field forms provided in Appendix A.

Following purging, the field team reduced the flow rate and collected groundwater samples with new, unused tubing. Groundwater samples were analyzed for VOCs, total petroleum hydrocarbons, gasoline-range organics (TPH-GRO), total petroleum hydrocarbons, diesel-range organics (TPH-DRO), total and dissolved metals, hexavalent chromium, emerging contaminants (1,4-dioxane, 1,2,3-TCP, and n-nitrosodimethylamine [NDMA]), and general chemistry analysis. Table 4A summarizes the analyses requested for samples from each monitoring well.

The field team decontaminated the pump before and after use at each monitoring well. Purge water and decontamination water was contained in U.S. Department of Transportation (DOT)-approved 55-gallon drums for offsite disposal.

2.3 Field Activities – Phase II

EPA conducted the following field activities during Phase II:

- Utility clearance activities – Underground Service Alert (USA) and subsurface geophysical utility clearance
- Borehole drilling
- Soil sampling
- Depth-discrete groundwater sampling

Figure 2 shows the seven Phase II borehole locations. Table 5 summarizes the data needs and rationale for each borehole location. The BH-05 and BH-07 locations were selected after review of more recent facility data and the data generated during Phase I.

2.3.1 Subsurface Geophysical Utility Clearance

The field team notified USA to identify subsurface utilities at each borehole drilling location. In addition, Spectrum Geophysics, a licensed geophysical company, identified subsurface utilities and structures in the proposed work areas using ground-penetrating radar, magnetic gradiometer, line tracer, or electromagnetic induction equipment.

2.3.2 Borehole Drilling

EPA retained National Exploration Wells & Pumps (NEWP) to drill seven boreholes in SWOU. NEWP used the air rotary casing hammer (ARCH) drilling method to advance a nominal 9-inch-diameter borehole to total depth and obtain soil and depth-discrete groundwater samples.

Prior to drilling, NEWP cleared the surface at each borehole location by coring the concrete or asphalt surface. After coring, the driller air-knifed down to approximately 10 feet bgs at each borehole location to identify any potential subsurface obstruction(s) missed by USA or the geophysical survey.

2.3.3 Soil Sampling

The driller collected soil samples at 10-foot intervals, or at changes in lithology, for lithologic description by the field geologist using the Unified Soil Classification System. The field geologist field-screened vadose zone soil samples for volatile headspace readings using a photoionization detector (PID).

The driller obtained soil samples during drilling using a California-modified split-spoon sampler equipped with brass sleeves. The field team collected soil samples for laboratory analyses and lithologic logging from the split-spoon sampler. Samples for VOC analysis were collected from the lowermost brass sleeve using EnCore sampling equipment and containers in accordance with EPA Method 5035. The team processed the remaining sleeves into samples for chemical analyses (using acetate liners), oxidant demand analyses, and geotechnical physical properties analyses.

The field team decided which vadose zone soil samples to submit for geotechnical analyses based on field observations and PID readings. Soil samples for laboratory analysis were collected at approximately 30-foot intervals from boreholes in which depth to groundwater was around 100 feet bgs, and at 40-foot intervals from boreholes in which the depth to groundwater was closer to 200 feet bgs.

Soil samples were submitted for VOC, TPH-DRO, TPH-GRO, total metals, total oxidant demand, and physical properties analyses. When possible, samples were analyzed for physical properties from 50 feet bgs to evaluate vadose zone properties and at a second depth, below the apparent water table, to evaluate saturated zone physical properties. Table 4B summarizes the analyses requested for soil samples collected during Phase II. Borehole logs are included in Appendix B.

2.3.4 Depth-Discrete Groundwater Sampling

As part of the drilling process, the driller attempted to collect depth-discrete groundwater samples from each borehole using a HydroPunch, or comparable, sampling method. When the lithologic conditions were

not favorable for HydroPunch sampling (tight formation/poor water production), the field team lowered a disposable bailer through the drill pipe to collect water samples.

The original intent was to collect groundwater samples at the water table and at approximately 10-foot intervals down to approximately 30 feet below the water table. However, poor water recovery limited the number of depth intervals where EPA was able to obtain groundwater samples. Exhibit 1 summarizes the apparent water table depth and the depth of groundwater samples collected for each Phase II borehole.

EXHIBIT 1
Summary of Depth to Water and Groundwater Sample Depths in Phase II Boreholes

Borehole	Approximate Depth Groundwater was Encountered (feet bgs)	Groundwater Sample Depths (feet bgs)
BH-01	Not encountered	-
BH-02	Not encountered	-
BH-03	185	190, 195, 210, 220
BH-04	190	190
BH-05	190	190, 210, 220
BH-06	70	80, 90, 100, 110
BH-07	80	80

The limited sample volumes obtained significantly reduced the set of analyses performed on the depth-discrete samples. The analyses performed on each depth-discrete groundwater sample are listed in Table 4B. Due to limited sample volume, EPA reduced the requested analyses at some locations from what was described in the Work Plan (EPA, 2014a). When possible, depth-discrete groundwater samples were analyzed for the same analytes as the samples collected from monitoring wells in Phase I, with the addition of total organic carbon and total oxidant demand analyses.

2.4 Equipment Decontamination

The field team and/or driller decontaminated all reusable equipment during monitoring well gauging, drilling, and sampling activities to prevent cross contamination. Decontamination of drilling equipment consisted of steam cleaning. Decontamination of sampling and monitoring equipment consisted of a three-stage wash and rinse including an initial wash with nonphosphate detergent, a tap water rinse, a final distilled water rinse, and air drying prior to reuse.

2.5 Investigation-Derived Waste Management

IDW generated during this investigation included disposable materials (such as paper towels and gloves), soil cuttings, decontamination water, and purge water. The field team containerized soil in DOT-approved 20-yard roll-off bins, or in 55-gallon drums (at BH-06), and containerized liquids in DOT-approved 55-gallon drums. The team labeled and stored all waste containers at the drill site pending analytical results and subsequent profiling, transport, and disposal. The field team disposed of general refuse in municipal waste dumpsters. EPA analyzed IDW soil cuttings and water for metals (including mercury), VOCs, TPH-GRO, and TPH-DRO. IDW results and waste manifests are included in Appendix C.

2.6 Quality Control

The field team performed all field investigations, including but not limited to, gauging and sampling groundwater monitoring wells, borehole drilling, and soil and groundwater sample collection and analysis in accordance with the approved Work Plan and QAPP (EPA, 2014a, 2014b). The field team submitted all samples collected to the fixed laboratories under chain-of-custody protocol.

The field team collected and submitted field QC samples for each sample medium to the analytical laboratories for analyses. The QC sample results provide a means to assess the quality of data obtained from the field investigation. The field team collected the following types of QC samples:

- **Field Duplicate:** Approximately 1 field duplicate sample for every 10 samples was collected. The field team collected two samples simultaneously for duplicate samples.
- **Trip Blank:** The field team submitted one trip blank per shipment for 1,2,3-TCP and VOC water samples.

SECTION 3

Investigation Results

This section summarizes the results of the DGI and includes a discussion of groundwater flow and VOC distribution in the SWOU of Area 3.

3.1 Southwest OU Groundwater Flow Conditions

Table 6 summarizes the water level data collected during Phase I. The depth to groundwater ranged from approximately 72 feet bgs in SW-5 to 194 feet bgs in SW-4. Groundwater elevations ranged from 372.26 feet msl in monitoring well W12ARMW1 in SW-5 to 274.03 feet msl in monitoring well EPAMW11 to the east of SW-4. The field team did not encounter groundwater in Phase II boreholes BH-01 and BH-02 even though the boreholes were drilled deeper than the nearby facility monitoring wells that contain groundwater. The lithology observed in the bottom 50 to 60 feet of these boreholes, where the field team anticipated the water table, were fine-grained and not representative of permeable aquifer materials. Fine-grained materials also have been observed at monitoring wells screened near the water table elsewhere in SWOU as described below.

Figure 3 shows the groundwater elevations and contours for the Phase I gauging event. Groundwater generally flows in an approximately west to east direction in SWOU. Observations based on review of the groundwater elevation contour map (Figure 3) are provided below.

- The horizontal gradient in SWOU varies considerably, ranging from 0.002 foot per foot (ft/ft) east of SW-4 to 0.1 ft/ft in the western portion of SW-3. The gradient near SW-5 in western SWOU is approximately 0.04 ft/ft.
- A groundwater high appears to be located in the northern half of SW-2. This feature may be the result of many wells in SW-2 having screen intervals located partially or completely in fine-grained material.
- Two wells in eastern SWOU (W12AOC1S and EPAMW18) are screened in fine-grained material and had anomalously high groundwater elevations, and well W12VCGM1 has a long screen interval compared to other facility wells; these three wells were not used for generating water level contours.

Figure 4 presents Cross Section A-A', which extends from west to east across all of the SWOU (refer to Figure 2 for the orientation of Cross Section A-A'). The cross section shows the position of the water table and the approximate alluvium/bedrock contact. The saturated portion of the alluvium is generally thicker moving from west to east starting beneath SW-2 where a bedrock high is observed. The topography of the bedrock surface appears to affect the horizontal gradient (steepness of the water table) in some locations, as observed between SW-2 and SW-3. Bedrock was not specifically identified in the boring logs for most facility monitoring wells in SWOU, but the presence of fine-grained materials at the water table, as observed at BH-02, likely has an effect on local-scale groundwater flow directions and gradients.

3.2 Contaminant Distribution in Southwest OU

The key COPCs in Area 3 include five chlorinated VOCs (PCE, TCE, cis-1,2-DCE, 1,2,3-TCP, and carbon tetrachloride) and perchlorate. Of the key COPCs, PCE and TCE are detected at the highest concentrations and highest frequency in the SWOU. To evaluate the distribution of key COPCs and other contaminants in the vadose zone and groundwater in the SWOU, EPA collected groundwater samples during Phase I from inactive facility monitoring wells and soil and depth-discrete groundwater samples from boreholes during Phase II.

Table 7A summarizes groundwater results from Phase I and 2013-2014 facility sampling for PCE, TCE, cis-1,2-DCE, carbon tetrachloride, and three other VOCs frequently detected at select SWOU facilities (1,1-dichloroethane [1,1-DCA], 1,2-dichloroethane [1,2-DCA], and 1,1-dichloroethene [1,1-DCE]).

Table 7B summarizes groundwater results for the Phase II borehole depth-discrete groundwater samples. Tables 8A and 8B summarize Phase I and the most recent facility groundwater results and borehole depth-discrete groundwater sample results for emerging contaminants (1,2,3-TCP, perchlorate, 1,4-dioxane, NDMA, and hexavalent chromium) and nitrate, respectively. Soil sampling results from all Phase II borehole samples were below screening levels outlined in the QAPP for all key COPCs. Therefore, the specific results are not tabulated in this report. All of the Phase I and Phase II soil and groundwater analytical results are summarized electronically in Appendix D.

3.2.1 Distribution of PCE and TCE in Southwest OU

Figure 5 shows the distribution of PCE and TCE in SWOU groundwater based on Phase I groundwater sample results, 2013-2014 facility monitoring well results, and depth-discrete groundwater sample results from Phase II boreholes. PCE and TCE were detected in SWOU groundwater above their respective MCLs of 5 micrograms per liter (μg/L) in all SWOU subgeographies (SW-1 through SW-5) and in downgradient EPA monitoring well EPAMW11. In general, TCE was detected at higher concentrations in groundwater than PCE throughout the SWOU. South of the SWOU at Facility 22 (a former dry cleaner), PCE is the dominant VOC and was detected at high levels (greater than 100 μg/L), while TCE was below the MCL.

Cross Section A-A' (Figure 4) shows the vertical distribution of PCE and TCE in groundwater through the central part of the SWOU. Most monitoring wells are screened across or just below the water table; however, depth-discrete samples at BH-06 in SW-5 and BH-03 in SW-3, as well as results from EPAMW11 to the east, suggest that the full saturated thickness of the alluvium is potentially impacted by PCE and TCE in portions of the SWOU.

A discussion of the distribution of PCE and TCE in the areas included in the Phase II investigation (SW-1, SW-3, and SW-5) is presented below.

3.2.1.1 Subgeography 1 (SW-1), Facilities 5, 7, and 130

Figure 6 shows the distribution of PCE and TCE in soil, soil vapor, and groundwater in SW-1 based on data collected during the DGI and historical facility data. Groundwater samples collected during Phase I from inactive wells at Facilities 5 and 7 confirmed the presence of TCE and PCE above the MCL in SW-1. DGI results are as follows:

- Facility 5 – Phase I groundwater sample at well W12CW202 contained TCE at 20 μg/L adjacent to this facility. However, the comparatively low TCE concentration combined with the historical soil vapor data imply that this facility is not a significant residual source of contamination.
- Facility 7 – Phase I groundwater sample at well W12PMMW1 contained PCE at 34 μg/L and TCE at 60 μg/L at this facility. PCE and TCE were not detected in soil from borehole BH-01 drilled adjacent to Facility 7 during Phase II. Fine-grained material (silt) was observed from 180 to 230 feet bgs at BH-01 and groundwater was not encountered. Groundwater was measured in W12PMMW1 at 181.05 feet, suggesting groundwater and associated contamination in the vicinity of Facility 7 may be isolated to fine-grained sediments with limited mobility. RWQCB staff indicated that during the original investigation of this facility, it took many days before any groundwater accumulated in the onsite monitoring well.
- Facility 130 – EPA did not collect data at Facility 130 during the DGI. However, the property owner did conduct an additional soil and soil vapor investigation concurrent with the DGI (Astech Environmental Services, Inc., 2014). The preliminary results of the owner's investigation are included in the data summary shown in Figure 6. As part of the upcoming fieldwork, expected to occur prior to EPA completing the FS, the property owner will install a groundwater monitoring well just downgradient of Facility 130.

3.2.1.2 Subgeography 3 (SW-3), Facilities 1, 3, 4, 6, 10, and 11

Figure 7 shows the distribution of PCE and TCE in soil, soil vapor, and groundwater in SW-3 based on data collected during the DGI and historical facility data. Samples collected during Phase I from inactive wells at

Facilities 4, 6, and 10 confirmed the presence of TCE and PCE above the MCL in groundwater beneath or adjacent to these facilities. DGI results are as follows:

- Facility 1 – Recent groundwater samples at facility monitoring wells (W12ASMW1, W12ASMW2, and W12AOC1NW) and depth-discrete groundwater samples from BH-05 confirm the presence of TCE at concentrations ranging from 32 to 790 μg/L beneath and surrounding Facility 1. PCE detections in groundwater in the vicinity of Facility 1 were between 2.9 and 36 μg/L. TCE was also detected below the current EPA Regional Screening Level (RSL) for residential soil of 940 micrograms per kilogram (μg/kg) (EPA, 2015). The field team did not encounter groundwater in BH-02 south of Facility 1. BH-02 was advanced to 220 feet bgs, approximately 40 feet deeper than the depth to water in nearby monitoring wells, and silt was observed from 160 to 220 feet bgs. Similar conditions were encountered in the past by parties attempting to install monitoring wells a few hundred feet to the northeast of BH-02 at the east end of Facility 1 and on the western edge of Facility 20. The fine-grained material near the water table likely has a significant effect on local-scale groundwater flow and contaminant migration south and east of Facility 1.
- Facility 3 – Recent groundwater samples at facility monitoring wells (W12CVMW3, W12CVMW4, and W12CVMW5) confirm the presence of TCE at concentrations ranging from 54 to 85 μg/L beneath Facility 3. PCE detections in groundwater at Facility 3 ranged from 5.3 to 12 μg/L. Soil and groundwater samples were collected downgradient of Facility 3 in BH-04. PCE and TCE were detected at low levels in soil at 80 feet, but well below EPA's RSLs for residential soil of 2,400 μg/kg and 940 μg/kg, respectively. PCE and TCE levels in groundwater at BH-04 were consistent with concentrations observed in Facility 3 monitoring wells. Extensive vadose zone remediation (soil vapor extraction [SVE]) was completed historically at Facility 3 and the groundwater concentrations detected during the DGI are much lower than historical maximums.
- Facility 4 – A Phase I groundwater sample collected at Facility 4 monitoring well W12CPMW1 confirms the presence of PCE (10 μg/L) and TCE (38 μg/L) beneath the facility. There has been an SVE system in operation at Facility 4 for the last several years to address VOCs in the vadose zone.
- Facility 6 – A Phase I groundwater sample collected at Facility 6 monitoring well W12IWMW1 confirms the presence of PCE (62 μg/L) and TCE (110 μg/L) beneath the facility. (Note that this sample was collected without purging any water from the well, so the results should be considered more uncertain than other monitoring well samples.) Soil and groundwater samples were collected upgradient of Facility 6 in BH-04. PCE and TCE were detected at low levels in soil at 80 feet, as described above. TCE levels in BH-04 groundwater were slightly lower than the concentrations observed at Facility 6. PCE levels at BH-04 (7.7 μg/L) were considerably lower than those at Facility 6.
- Facility 10 and Facility 11– A Phase I groundwater sample collected at Facility 10 monitoring well W12USMW1 confirms the presence of PCE (11 μg/L) and TCE (27 μg/L) at the facility. No monitoring wells are specifically associated with the adjacent Facility 11. EPA collected soil and groundwater samples at Facility 10, but adjacent to Facility 11, in BH-03. PCE and TCE were not detected in soil. TCE was detected in all three depth-discrete groundwater samples from BH-03 at concentrations ranging from 33 J μg/L (the J flag indicates the result should be considered an estimated concentration) to 55 μg/L. PCE was detected at a low concentration (less than 2 μg/L) in the depth-discrete groundwater samples from BH-03.

3.2.1.3 Subgeography 5 (SW-5), Facilities 32 and 66

Figure 8 shows the distribution of PCE and TCE in soil, soil vapor, and groundwater in SW-5 based on data collected during the DGI and historical facility data. Groundwater samples collected during Phase I from inactive wells at Facility 32 confirmed the presence of TCE and PCE above the MCL in SW-5. DGI results are as follows:

- Facility 32 – EPA collected soil and groundwater samples on and near Facility 32 during the DGI. PCE and TCE were not detected in soil from borehole BH-06 at Facility 32 or to the east in BH-07 during Phase II. Groundwater samples collected from wells W12ARMW1, W12ARMW2, and W12ARMW3 and depth-discrete samples from boreholes BH-06 and BH-07 contained elevated levels of TCE and PCE. TCE concentrations ranged from 13 to 450 μg/L. PCE concentrations were generally much lower and ranged from 0.24 J to 16 μg/L.
- EPA did not collect data at Facility 66 during the DGI.

3.2.2 Distribution of Emerging Contaminants and Nitrate in SWOU

Emerging contaminants (perchlorate, 1,2,3-TCP, 1,4-dioxane, NDMA, and hexavalent chromium) and nitrate were analyzed in select monitoring well samples and depth-discrete groundwater samples from boreholes. Perchlorate and 1,2,3-TCP are key COPCs in Area 3. Tables 8A and 8B summarize the results for emerging contaminants and nitrate for monitoring wells and boreholes, respectively.

Exhibit 2 summarizes the locations where emerging contaminants and nitrate exceeded their respective screening levels, MCLs, or NLs, in groundwater for each SWOU subgeography and at EPA well locations downgradient of the SWOU facilities.

EXHIBIT 2
Summary of Exceedances of Screening Levels for Emerging Contaminants and Nitrate

	Location of Exceedance					
Constituent	**SW-1**	**SW-2**	**SW-3**	**SW-4**	**SW-5**	**EPA MWs**
Perchlorate MCL = 6 μg/L	No results	No results	BH-03 (6.7 μg/L) BH-04 (11 μg/L) BH-05 (7.3 μg/L)	No results	No exceedance	No exceedance
1,2,3-TCP NL = 0.005 μg/L	No exceedance	No results	No exceedance	No exceedance	No exceedance	No exceedance
1,4-dioxane NL = 1 μg/L	No results	No results	W12ASMW1 (6.2 μg/L)	W12AOC3SE (2.3 J μg/L)	W12ARMW1 (1 μg/L)	No exceedance
NDMA NL = 0.01 μg/L	No exceedance	No results	BH-04 (1.4 μg/L) BH-05 (0.32 J μg/L)	No results	BH06 (0.015 μg/L)	No exceedance
Hexavalent chromium MCL = 10 μg/L	No exceedance	No results	W12CPMW1 (19 J μg/L)	No results	W12ARMW1 (140 J μg/L) W12ARMW2 (59 μg/L) W12ARMW3 (100 J μg/L)	No exceedance
Nitrate-N MCL = 10 μg/L	No exceedance	No results	BH-03 (11 μg/L) BH-04 (11 μg/L) BH-05 (12 μg/L)	No results	W12ARMW1 W12ARMW3 BH06 (11 μg/L)	EPAMW11 (11 μg/L)

3.2.3 Oxidant Demand and Physical Properties

EPA submitted select soil and depth-discrete groundwater samples from Phase II boreholes for oxidant demand analysis and geotechnical physical properties testing (soil only) for use in FS evaluations. Refer to Table 4B for a summary of samples submitted for oxidant demand analysis and geotechnical physical properties testing. The results have not yet been received from the laboratory. Appendix E will eventually include the laboratory reports for oxidant demand and geotechnical physical properties.

SECTION 4

Conclusions

The key findings and conclusions from the DGI in SWOU of Area 3 are summarized as follows:

- Groundwater flow in SWOU is generally from west to east with a gradient between 0.002 and 0.1 ft/ft, although flow directions appear to vary considerably in localized areas. The bedrock topography and presence of significant fine-grained sequences in the saturated portion of the alluvium appear to affect groundwater occurrence and flow direction in areas within SWOU. FS evaluations for individual SWOU subgeographies or facilities will require additional focused evaluation of specific subsurface conditions.
- The fine-grained sequences, lack of apparent saturated intervals, and difficulty in obtaining groundwater from the boreholes highlight the complex groundwater flow conditions in the SWOU and indicate that delineation of migration pathways will be challenging.
- The seven soil borings were generally located on or along the perimeter of individual facilities. PCE and TCE were not frequently detected in soil samples collected from the boreholes, and all detections were well below EPA's residential soil RSLs for each analyte. This may suggest that there is not extensive residual soil contamination outside of the individual facility footprints. It should be noted that evaluation of residual soil vapor contamination was not a component of this DGI.
- PCE and TCE are the VOCs detected most frequently in the SWOU, with TCE generally detected at higher concentrations in groundwater (refer to Tables 7A and 7B). Currently, the highest concentrations of TCE in groundwater are observed in monitoring wells in the central portion of Facility 20 in SW-4 (Figure 5).
- Tables 7A and 7B include other chlorinated VOCs (carbon tetrachloride, cis-1,2-DCE, 1,1-DCE, 1,1-DCA, and 1,2-DCA) detected at low levels in SWOU. Additional review of the distribution of these VOCs may assist in identifying individual source areas for the FS.
- Perchlorate, 1,4-dioxane, NDMA, hexavalent chromium, and nitrate exceed screening levels (MCLs or NLs) in SWOU (refer to Exhibit 2). The distribution of these compounds at individual facilities will be an important consideration for FS evaluations.
- Oxidant demand and physical property data were not reviewed for this report. These data will be considered for FS evaluations.

SECTION 5

References

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Tables

TABLE 1

Summary of Southwest Operable Unit Facility Background Information

San Gabriel Valley Area 3 Superfund Site

Facility	Background and Operational History	Investigation Chronology (as of early 2014)	Remediation History	Data Summary (Historical Maximums)	Comments
1	• Early 1950s – 1960: Electric motor manufacturing, transformer manufacturing, and machine shop • 1960 – early 1980s: Multiple industrial uses and owners • Early 1980s – present day: Laser optics equipment manufacturer	• Groundwater: 2005 - 2013 annually • Soil Vapor: 2000, 2001, 2005 • Soil: 2005, 2006	RWQCB approved installation and operation of an SVE system. SVE operations have not begun.	• Shallow Vadose Zone: >100 µg/L • Intermediate Vadose Zone: >1,000 µg/L • Deep Vadose Zone: >1,000 µg/L • Groundwater: >3,000 µg/L	Five AOCs: Building No. 1: • Sump outside the northeast corner of the building • Chemical storage area outside the western portion of the building Building No. 2: • Degreasers in the north-central portion of the building • Former TCE aboveground storage tank outside the northeast corner of the building • Sewer sampling vault outside the southeast portion of the building
2	• 1965 – early 2000s: Aluminum foundry for extrusion and finishing • Currently, under redevelopment	• Groundwater: 2012, 2013 annually • Soil Vapor: 2010, 2012 • Soil: 2010, 2012, 2013	RWQCB approved soil excavation and installation and operation of an SVE system. SVE operations have not begun.	• Shallow Vadose Zone: 2,000 µg/L • Intermediate Vadose Zone: >2,000 µg/L • Deep Vadose Zone: ND • Groundwater: <100 µg/L	
3	• 1969 – 1984: Nardon Manufacturing Company • 1984 – 1995: Santa Fe International Corporation (SFIC); furniture and electrical parts storage • 1995 – 2001: Charter Communications • 2001: Campus 1000 Fremont, LLC; property was vacant/no operations • June 2003: Corner Company, LLC; currently leased to adult education provider	• Groundwater: 2002 - 2013 annually • Soil Vapor: 1996, 2001, 2001, 2007, 2008 • Soil: 2007, 2010	• May 2003: SVE (500 cfm) pilot test; ROI = 98 feet (40-60 ft bgs) • July 2003 through December 2004 and January 2011 through June 2011: SVE operated • August 2008: Soil excavation in northern parking lot 7-11 ft bgs • July 2012: Granted NFA soil case closure with institutional controls implemented	• Shallow Vadose Zone: <8,000 µg/L • Intermediate Vadose Zone: >2,000 µg/L • Deep Vadose Zone: >1,000 µg/L • Groundwater: <500 µg/L	
4	Operating printing, publishing, and commercial printing business.	• Groundwater: 2005 - 2007 annually • Soil Vapor: 2000, 2002, 2003 • Soil: 2003	2013: RWQCB approved a work plan to install and operate an SVE system. System operations ongoing.	• Shallow Vadose Zone: >2,000 µg/L • Intermediate Vadose Zone: <4,000 µg/L • Deep Vadose Zone: >2,000 µg/L • Groundwater: >100 µg/L	
5	1954 - 2009: Commercial printing and lithography business.	• Groundwater: 2006 - 2008, 2011 • Soil Vapor: 2001, 2006, 2011 • Soil: 2010		• Shallow Vadose Zone: >500 µg/L • Intermediate Vadose Zone: >100 µg/L • Deep Vadose Zone: >100 µg/L • Groundwater: <100 µg/L	
6	1923 – present: Operating commercial printing and lithography business.	• Groundwater: 2004 - 2006 • Soil Vapor: 2000, 2003 • Soil: none performed		• Shallow Vadose Zone: >3.000 µg/L • Intermediate Vadose Zone: >4,000 µg/L • Deep Vadose Zone: >1,000 µg/L • Groundwater: >100 µg/L	

TABLE 1

Summary of Southwest Operable Unit Facility Background Information

San Gabriel Valley Area 3 Superfund Site

Facility	Background and Operational History	Investigation Chronology (as of early 2014)	Remediation History	Data Summary (Historical Maximums)	Comments
7	1946 – present: Operating metal plating (chrome, nickel, and brass) business.	• Groundwater: 2004 - 2007 • Soil Vapor: 2000, 2001, 2002 • Soil: 2003	February 2004 - June 2005: SVE operation. NFA for soil has not been granted.	• Shallow Vadose Zone: >3.000 µg/L • Intermediate Vadose Zone: >2,000 µg/L • Deep Vadose Zone: >1,000 µg/L • Groundwater: >100 µg/L	
10	• 1922 – 1981: Lumber company and furniture manufacturer operated the northern portion of the property. During this time, the southern portion of the property was reportedly vacant and/or used as parking. • 1990s: Buildings were demolished. • 2002: The property was subdivided. Facility 10 maintained ownership of the southern portion of the property. The northern portion of the property is currently identified as Facility 11. • Currently, operating storage rental facility.	• Groundwater: 2006 - 2009 • Soil Vapor: 1994, 2004, 2005, 2006 • Soil: 2010	• July 1994: Shallow soil excavation 6 feet wide/long and 7 feet deep • 2008: Proposed ISCO to remediate groundwater, but no remediation has been conducted.	• Shallow Vadose Zone: >3.000 µg/L • Intermediate Vadose Zone: >1,000 µg/L • Deep Vadose Zone: >500 µg/L • Groundwater: >100 µg/L	
11	2000 – present: Operating electronic (CDs and DVDs) duplication manufacturer and supplier.	• Groundwater: none performed • Soil Vapor: 2006 • Soil: none performed		• Shallow Vadose Zone: <500 µg/L • Groundwater: no data	
20	1920s – present: Operating industrial public utility business; 33 acres.	• Groundwater: 2013 • Extensive soil vapor and soil investigations: not summarized here	Multiple underground storage tank removals and excavations have occurred. No active vadose zone and/or groundwater remedial actions have been implemented.	• Shallow Vadose Zone: <500 µg/L • Intermediate Vadose Zone: <500 µg/L • Deep Vadose Zone: >1,000 µg/L • Groundwater: <1,000 µg/L	Currently working with DTSC to further evaluate potential impacts to groundwater. AOCs are as follows: • AOC 1: 10.5 acres on the southern portion of the facility • AOC 2: 2 acres on the western portion of the facility • AOC 3: 20.5 acres on the northern portion of the facility
22	1975 – 2013/2014: Dry cleaner business; currently for lease.	• Groundwater: 2006, 2008, 2011 - 2013 annually • Soil Vapor: 2000, 2002, 2008, 2009, 2011, 2012 • Soil: 2006, 2008, 2011	September and November 2011: SVE pilot test	• Shallow Vadose Zone: <9,000 µg/L • Intermediate Vadose Zone: >2,000 µg/L • Deep Vadose Zone: >1,000 µg/L • Groundwater: >100 µg/L	

TABLE 1

Summary of Southwest Operable Unit Facility Background Information

San Gabriel Valley Area 3 Superfund Site

Facility	Background and Operational History	Investigation Chronology (as of early 2014)	Remediation History	Data Summary (Historical Maximums)	Comments
32	• 1978 – 2000: RCRA permitted facility that transported, stored, and disposed of hazardous waste under numerous ownerships and company names.	• Groundwater: 2005 • Soil Vapor: 1998, 2003, 2004 • Soil: 1987, 1990, 1994, 1998, 2000 - 2003	• November 1995: approximately 3,451 tons of soil removed • 2005: NFA for soil closure was granted with a land use covenant by DTSC	• Shallow Vadose Zone: >100 µg/L • Intermediate Vadose Zone: >100 µg/L • Deep Vadose Zone: not available • Groundwater: <1,000 µg/L	AOCs: • Solvent still was located north of building along eastern property boundary. • ASTs (two) were located in the northeast corner of property. • Concrete containment pads for the solvent still and AST were intentionally breached to allow rainwater to drain. • Two USTs for diesel fuel located west of the AST under a canopy and southwest of the AST concrete pad, respectively. • Highest concentrations reported along eastern property boundary the former solvent still.
66	Operating die-cut paper, paperboard, and cardboard manufacturer.	• Groundwater: not performed • Soil Vapor: 2000 • Soil: not performed		• Shallow Vadose Zone: <100 µg/L • Groundwater: no data	
130	1978 through present: Operating metal finisher (electroplating, plating, polishing, anodizing, and coloring processes).	• Groundwater: not performed • Soil Vapor: 2000, 2008, 2010 • Soil: 2000, 2008, 2010		• Shallow Vadose Zone: >100 µg/L • Intermediate Vadose Zone: >500 µg/L • Deep Vadose Zone: <100 µg/L • Groundwater: no data	In 2013, entered a voluntary cleanup agreement with EPA to investigate the nature and extent of contamination in both the intermediate and deep vadose zone and evaluate whether impacts to groundwater have occurred.

Notes:

Vadose zone data are based on soil vapor analytical data.

Soil vapor and ground water data presented are the maximum reported tetrachloroethene (PCE) and/or trichloroethene (TCE) concentrations

Facility 20 vadose zone data summary includes samples collected on the facility property (onsite), only

µg/L - micrograms per liter

> - greater than

< - less than

AOC - area of concern

AST - aboveground storage tank

cfm - cubic feet per minute

DTSC - Department of Toxic Substances Control

ft bgs - feet below ground surface

ISCO - in situ chemical oxidation

ND - not detected

NFA - No Further Action

RCRA - Resource Conservation and Recovery Act

RWQCB - Regional Water Quality Control Board

SVE - soil vapor extraction

UST - underground storage tank

TABLE 2

Summary of Southwest Operable Unit Data Gap Investigation Field Activities

San Gabriel Valley Area 3 Superfund Site

Investigation Phase	Planned Field Investigation Activities	Number of Locations	Description of Activities
Phase I	Site Reconnaissance	Sitewide	Field-located groundwater monitoring wells and assessed site access issues.
	Groundwater Gauging	30	Measured and recorded the depth to groundwater in 27 facility monitoring wells and 2 EPA monitoring wells. One facility monitoring well could not be located (W12ARMW4).
	Groundwater Sampling	8	Collected groundwater samples from eight monitoring wells at six facilities in southwest Area 3.
Phase II	Site Access and Site Reconnaissance	Sitewide	Obtained all necessary access agreements, encroachment permits, and borehole permitting. Field-located and marked proposed borehole locations.
	Utility Clearance	7	Conducted subsurface geophysical utility survey to clear the proposed boring locations of underground utilities prior to drilling.
	Borehole Drilling, Soil, and Groundwater Sampling	7	Surface clearance (asphalt or concrete core). Air-knifed boreholes to approximately 10 feet bgs.
			Advanced soil borings using ARCH drilling method. Collected soil samples at 10-foot intervals for lithologic description using the Unified Soil Classification System and volatile headspace readings using a photoionization detector.
			Collected soil samples at 3 to 5 depths per borehole and submitted to a fixed laboratory for geotechnical/physical property analyses, oxidant demand analyses, and/or for laboratory chemical analyses.
			Collected depth-discrete groundwater samples during ARCH drilling from boreholes where water was encountered. Groundwater samples were collected at 1 to 4 depths, including at the apparent water table (all boreholes where water was encountered) and at approximately 10-foot intervals to approximately 30 feet below the water table in three boreholes. Submitted depth-discrete groundwater samples for oxidant demand analyses and/or for laboratory chemical analyses.

Notes:

ARCH - air rotary casing hammer

bgs - below ground surface

TABLE 3

Summary of Southwest Operable Unit Groundwater Monitoring Well Details

San Gabriel Valley Area 3 Superfund Site

Facility	SWOU Subgeography	Facility Well ID	EPA Well ID	Total Borehole Depth (feet bgs)	Casing Elevation (feet msl)	Casing Diameter (inches)	Top of Screen (feet bgs)	Bottom of Screen (feet bgs)	Well Depth (feet bgs)
1	SW-3	EMW-1	W12ASMW1	201.5	471.45	4	170	200	200
		EMW-2	W12ASMW2	188.5	473.67	4	165	185	185
		EMW-3	W12ASMW3	195.5	468.58	4	179	194	194
2	SW-2	MW-1	W12IEMW1	146.2	461.39	4	130	145	145.5
		MW-2	W12IEMW2	141.5	460.94	4	130	140	140.5
		MW-3	W12IEMW3	145.8	463.53	4	130	145	145.5
		MW-4	W12IEMW4	121.5	462.15	4	110	120	120.5
		MW-5	W12IEMW5	121.5	457.04	4	110	120	120.5
		MW-6	W12IEMW6	127	461.86	4	117	127	127
		MW-7	W12IEMW7	121.5	466.95	4	110	120	120.5
		MW-8	W12IEMW8	NA	NA	NA	NA	NA	NA
		MW-9	W12IEMW9	NA	NA	NA	NA	NA	NA
		MW-10	W12IEMW10	NA	NA	NA	NA	NA	NA
3	SW-3	VMW-3	W12CVMW3	168	468.12	NA	155	165	166
		VMW-4	W12CVMW4	184	465.93	NA	152	167	167
		VMW-5	W12CVMW5	163.4	466.27	NA	152	163	163
4	SW-3	MW-1	W12CPMW1	192.5	466.27	4	160	190	190
5	SW-1	MW-202	W12CW202	200	480.86	2	180	200	200
6	SW-3	FW-1	W12IWMW1	190	471.55	4	NA	NA	190
7	SW-1	MW-1	W12PMMW1	200	489.83	4	10	200	200
10	SW-3	AAMW-1	W12USMW1	NA	467.32	2	165	195	200
20	SW-4	AOC-3-N	W12AOC3N	201	473.44	4	191	201	201
		AOC-3-SE	W12AOC3SE	200	472.61	4	190	200	200
		AOC-1-SE	W12AOC1S	202	465.69	4	170	190	202
		AOC-1-NW	W12AOC1NW	189	472.50	4	179	189	189
22	South of SWOU	GM-1	W12VCGM1	201	443.72	2	75	180	185
		MW-2	W12VCMW2	NA	442.78	4	85.0	115.5	NA
		MW-3	W12VCMW3	NA	447.24	4	90	129	NA
32	SW-5	MW-1	W12ARMW1	99.5	448.82	4	70	96	99
		MW-2	W12ARMW2	97	447.46	4	70	96	97
		MW-3	W12ARMW3	96.5	442.29	4	70	90	90
		MW-4	W12ARMW4	96.5	448.04	4	65	95	96
EPA	East of SW-4	EPAMW11	EPAMW11	450	462.08	4	252	272	282
		EPAMW18	EPAMW18	300	479.01	4	196	226	236

Notes:

bgs - below ground surface

msl - mean sea level

NA - not available

SWOU - Southwest Operable Unit

TABLE 4A

Phase I Monitoring Well Sample Analysis Summary - Southwest Operable Unit Data Gap Investigation

San Gabriel Valley Area 3 Superfund Site

Well	Sample ID	VOCs	1,2,3-TCP	TPH-GRO	TPH-DRO	1,4-Dioxane	NDMA	Cr6	Dissolved Metals	Total Metals	Nitrate (N)	Phosphate (P)	TDS
		EPA 8260B		EPA 8015P	EPA 8015E	EPA 8270C	EPA 1625	EPA 218.6	EPA SW6010B		EPA 300		SM 2540C
W12CPMW1	W12CPMW1	X	X	X	X	X	X	X	X	X	X	X	X
W12CPMW1 (duplicate)	W12CPMW1FD	X	X	X	X	X	X	X	X	X	X	X	X
W12CW202	W12CW202	X	X	X									
W12IWMW1	W12IWMW1	X	X	X									
W12PMMW1	W12PMMW1	X	X	X	X		X	X	X	X	X	X	X
W12USMW1	W12USMW1	X	X	X									
W12ARMW1	W12ARMW1	X	X	X	X	X	X	X	X	X	X	X	X
W12ARMW2	W12ARMW2	X	X	X	X	X	X	X	X	X	X	X	X
W12ARMW3	W12ARMW3	X	X	X	X	X	X	X	X	X	X	X	X

Notes:

1,2,3-TCP - 1,2,3-trichloropropane

Cr6 - hexavalent chromium

NDMA - n-nitrosodimethylamine

TDS - total dissolved solids

TPH-DRO - total petroleum hydrocarbons (diesel- and oil-range organics)

TPH-GRO - total petroleum hydrocarbons (gasoline-range organics)

VOC - volatile organic compound

TABLE 4B

Phase II Borehole Soil and Groundwater Analysis Summary - Southwest Operable Unit Data Gap Investigation

San Gabriel Valley Area 3 Superfund Site

			Soil Analyses						Borehole Groundwater Samples														
Borehole	Sample Depth (feet bgs)	Native Sample ID	VOCs	TPH-DRO	TPH-GRO	Total Metals	Oxygen Demand	Physical Properties	VOCs	1,2,3-TCP	TPH-GRO	TPH-DRO	1,4-Dioxane	NDMA	ClO4	Cr6	Dissolved Metals	Total Metals	TOC	Nitrate (N)	Phosphate (PO4)	TDS	Oxygen Demand
			EPA 8260B	EPA 8015P	EPA 8015E	EPA 6010B	ASTM D7262	Various	EPA 8260B		EPA 8015P	EPA 8015E	EPA 8270C	EPA 1625	EPA 6850	EPA 218.6	EPA 6010B		EPA 9060	EPA 300		SM 2540C	ASTM D7262
BH-01	40	SW1-BHSO-01-40	X	X	X	X																	
	50	SW1-BHSO-01-50						X															
	80	SW1-BHSO-01-80	X	X	X	X																	
	120	SW1-BHSO-01-120	X	X	X	X																	
	140	SW1-BHSO-01-140	X	X	X	X																	
BH-02		SW3-BHSO-02-40	X	X	X	X																	
	40	SW3-BHSO-02-40FD	X	X	X	X																	
	50	SW3-BHSO-02-50						X															
	80	SW3-BHSO-02-80	X	X	X	X																	
	120	SW3-BHSO-02-120	X	X	X	X																	
	140	SW3-BHSO-02-140	X	X	X	X																	
BH-03	40	SW3-BHSO-03-40	X	X	X	X																	
	50	SW3-BHSO-03-50						X															
	80	SW3-BHSO-03-80	X	X	X	X																	
	120	SW3-BHSO-03-120	X	X	X	X																	
	140	SW3-BHSO-03-140	X	X	X	X																	
		SW3-BHGW-03-170							X														
	190	SW3-BHGW-03-190								X	X												
	195	SW3-BHGW-03-195					X	X															X
	210	SW3-BHGW-03-210							X	X	X	X	X		X	X	X	X	X	X	X	X	
	220	SW3-BHGW-03-220							X	X	X	X	X		X	X	X	X	X	X	X	X	
BH-04	40	SW3-BHSO-04-40	X	X	X	X																	
	50	SW3-BHSO-04-50						X															
		SW3-BHSO-04-80	X	X	X	X																	
	80	SW3-BHSO-04-80FD	X	X	X	X																	
	120	SW3-BHSO-04-120	X	X	X	X																	
	140	SW3-BHSO-04-140	X	X	X	X																	
		SW3-BHGW-04-170							X				X										
	190	SW3-BHGW-04-190					X			X	X	X		X	X		X	X	X	X	X	X	X
BH-05	40	SW3-BHSO-05-40	X	X	X	X																	
	50	SW3-BHSO-05-50						X															
	80	SW3-BHSO-05-80	X	X	X	X																	
	120	SW3-BHSO-05-120	X	X	X	X																	
	140	SW3-BHSO-05-140	X	X	X	X																	
	190	SW3-BHGW-05-190							X	X	X							X					
	210	SW3-BHGW-05-210					X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X
	220	SW3-BHGW-05-220							X	X	X	X	X	X	X		X	X	X	X	X	X	
BH-06	30	SW5-BHSO-06-30	X	X	X	X																	
	50	SW5-BHSO-06-50						X															
		SW5-BHSO-06-60	X	X	X	X																	
	60	SW5-BHSO-06-60FD	X	X	X	X																	
	80	SW5-BHGW-06-80						X	X	X	X	X											
	90	SW5-BHGW-06-90							X	X	X												
	100	SW3-BHGW-06-100					X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	110	SW3-BHGW-06-110							X														
BH-07	30	SW5-BHSO-07-30	X	X	X	X																	
	50	SW5-BHSO-07-50						X															
	60	SW5-BHSO-07-60	X	X	X	X																	
		SW5-BHGW-07-80					X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	80	SW5-BHGW-07-80FD							X	X	X	X	X	X	X	X	X	X	X	X	X	X	

Notes:

1,2,3-TCP - 1,2,3-trichloropropane
bgs - below ground surface
ClO4 - perchlorate
Cr6 - hexavalent chromium
NDMA - n-nitrosodimethylamine
TDS - total dissolved solids
TOC - total organic carbon
TPH-DRO - total petroleum hydrocarbons, diesel- and oil-range organics
TPH-GRO - total petroleum hydrocarbons, gasoline-range organics
VOC - volatile organic compound

TABLE 5

Data Needs and Rationale for Borehole Locations - Southwest Operable Unit Data Gap Investigation

San Gabriel Valley Area 3 Superfund Site

SWOU Subgeography	Borehole ID	Data Need	Rationale for Proposed Borehole Location
SW-1	BH-01	Vertical delineation of groundwater plume; geotechnical and oxidant demand data for saturated zone.	Located downgradient of Facility 7 and the groundwater well with the highest PCE/TCE concentrations in SW-1.
SW-2	None	None	Currently performing vadose zone investigation/remediation and groundwater monitoring.
SW-3	BH-02	Lateral and vertical delineation of groundwater plume; geotechnical and oxidant demand data for saturated zone.	Adjacent to Facility 1 and downgradient of the groundwater well that historically had the highest TCE concentrations in SW-3. Northernmost facility within SW-3.
	BH-03	Vertical delineation of groundwater plume; geotechnical and oxidant demand data for saturated zone.	Centrally located within SW-3. Adjacent to the groundwater well at Facility 10. Downgradient of Facilities 4 and 6 and adjacent to Facility 11, which lacks groundwater data.
	BH-04	Lateral and vertical delineation of groundwater plume; geotechnical and oxidant demand data for saturated zone.	Downgradient of Facility 3 wells that historically had elevated TCE concentrations. Facility 3 is the southwesternmost and farthest upgradient facility within SW-3.
	BH-05	Lateral and vertical delineation of groundwater plume; geotechnical and oxidant demand data for saturated zone.	Between the two sides of Facility 1, which historically had the highest TCE concentrations in SWOU groundwater. Northernmost facility within SW-3.
SW-4	None	None	Currently performing vadose zone and groundwater investigations.
SW-5	BH-06	Vertical delineation of groundwater plume; geotechnical and oxidant demand data for saturated zone.	Only two facilities within SW-5: Facility 32 and Facility 66. Located on Facility 32, adjacent to the primary source area identified on the facility. Downgradient of Facility 66, which has not performed any groundwater investigations.
	BH-07	Lateral delineation of groundwater plume; geotechnical and oxidant demand data for saturated zone.	Downgradient of Facility 32 which has had, both historically and currently, elevated TCE concentrations in groundwater.

Notes:

PCE - tetrachloroethene

TCE - trichloroethene

SWOU - Southwest Operable Unit

TABLE 6

Summary of Southwest Operable Unit Water Levels

San Gabriel Valley Area 3 Superfund Site

Facility	SWOU Subgeography	EPA Well ID	Casing Elevation (feet msl)	Top of Screen (feet bgs)	Bottom of Screen (feet bgs)	Phase I Gauging			
						Date	Depth to water (feet btoc)	Total Depth (feet btoc)	Groundwater Elevation (feet msl)
1	SW-3	W12ASMW1	471.45	170	200	7/29/2014	188.71	199.82	282.74
		W12ASMW2	473.67	165	185	7/29/2014	176.58	184.62	297.09
		W12ASMW3	468.58	179	194	7/29/2014	183.87	193.15	284.71
2	SW-2	W12IEMW1	461.39	130	145	7/29/2014	102.22	136.90	359.17
		W12IEMW2	460.94	130	140	7/29/2014	103.17	116.64	357.77
		W12IEMW3	463.53	130	145	7/29/2014	101.86	136.01	361.67
		W12IEMW4	462.15	110	120	7/29/2014	104.54	114.82	357.61
		W12IEMW5	457.04	110	120	7/29/2014	99.85	117.86	357.19
		W12IEMW6	461.86	117	127	7/29/2014	92.88	124.74	368.98
		W12IEMW7	466.95	110	120	7/29/2014	101.15	112.65	365.80
3	SW-3	W12CVMW3	468.12	155	165	7/31/2014	162.36	164.30	305.76
		W12CVMW4	465.93	152	167	7/31/2014	158.58	166.37	307.35
		W12CVMW5	466.27	152	163	7/31/2014	158.28	162.20	307.99
4	SW-3	W12CPMW1	466.27	160	190	7/30/2014	179.15	189.82	287.12
5	SW-1	W12CW202	480.86	180	200	7/29/2014	185.71	198.02	295.15
6	SW-3	W12IWMW1	471.55	60	100	7/31/2014	183.69	189.78	287.86
7	SW-1	W12PMMW1	489.83	10	200	7/29/2014	181.05	198.76	308.78
10	SW-3	W12USMW1	467.32	165	195	7/29/2014	180.29	190.48	287.03
20	SW-4	W12AOC3N	473.44	191	201	7/29/2014	194.14	200.74	279.30
		W12AOC3SE	472.61	190	200	7/29/2014	194.22	199.30	278.39
		W12AOC1S	465.69	170	190	7/29/2014	155.36	189.66	310.33
22	South of SWOU	W12VCGM1	443.72	75	180	7/29/2014	108.06	178.12	335.66
		W12VCMW2	442.78	85.0	115.5	7/29/2014	102.59	115.36	340.19
		W12VCMW3	447.24	90	129	7/29/2014	DRY	128.72	DRY
32	SW-5	W12ARMW1	448.82	70	96	7/29/2014	76.56	94.14	372.26
		W12ARMW2	447.46	70	96	7/29/2014	75.74	95.02	371.72
		W12ARMW3	442.29	70	90	7/29/2014	71.71	89.84	370.58
		W12ARMW4	448.04	65	95	7/30/2014	Unable to Locate		
EPA	East of SW-4	EPAMW11	462.08	252	272	7/30/2014	188.05	NG	274.03
		EPAMW18	479.01	196	226	7/30/2014	178.08	NG	300.93

Notes:

bgs - below ground surface

btoc - below top of casing

msl - mean sea level

NG - not gauged

SWOU - Southwest Operable Unit

TABLE 7A

Phase I and Recent Facility Monitoring Well VOC Groundwater Results - Southwest Operable Unit Data Gap Investigation

San Gabriel Valley Area 3 Superfund Site

Facility	Well ID	Date	PCE (MCL = 5)	TCE (MCL = 5)	CT (MCL = 0.5)	cis-1,2-DCE (MCL = 6)	1,1-DCE (MCL = 6)	1,2-DCA (MCL = 5)	1,1-DCA (MCL = 0.5)
Phase I Groundwater Samples									
4	W12CPMW1	7/30/2014	**10/10**	**33/38**	<0.5/<0.5	1.9/2.1	<0.5/<0.5	<0.5/<0.5	<0.5/<0.5
5	W12CW202	7/31/2014	0.6	**20**	<0.2	0.6 J	<0.2	<0.2	<0.2
6	W12IWMW1	7/31/2014	**62**	**110**	**0.5**	4.1 J	0.8	<0.2	<0.2
7	W12PMMW1	7/30/2014	**34**	**60**	<0.5	2.3	0.5 J	<0.5	<0.5
10	W12USMW1	7/31/2014	**11**	**27**	<0.2	1.6 J	<0.2	<0.2	<0.2
32	W12ARMW1	7/31/2014	**9.8**	**190 J**	<0.5	**14 J**	0.5 J	<0.5	<0.5
	W12ARMW2	7/30/2014	2.6 J	**28**	<0.5	0.7	<0.5	<0.5	<0.5
	W12ARMW3	7/31/2014	**16**	**340**	<0.5	**23**	3.2	<0.5	<0.5
Facility Groundwater Sample Results									
1	W12ASMW1	3/11/2014	4.6/4.3	**430/410**	<0.5	**6.2**/5	4.1/3.8	<0.5/<0.5	<1/<1
	W12ASMW2	3/11/2014	**20**	**790**	**2.0**	3.7	**12.0**	2.2	<2
	W12ASMW3	3/11/2014	3.0	**32**	<0.5	<1.0	1.5	<0.5	<1
2	W12IEMW1	10/1/2013	<1	<1	NA	<1	<1	NA	<1
	W12IEMW2	10/1/2013	**18**	**20**	NA	<1	**9.4**	NA	<1
	W12IEMW3	10/1/2013	2.7	**8.1**	NA	5.2	<1	NA	**2.3**
	W12IEMW4	10/1/2013	**12**	**8**	NA	<1	<1	NA	<1
	W12IEMW5	10/1/2013	**9**	**7.7**	NA	<1	1.2	NA	<1
	W12IEMW6	10/1/2013	<1	<1	NA	<1	<1	NA	<1
	W12IEMW7	10/1/2013	<1	<1	NA	<1	<1	NA	<1
	W12IEMW8	10/1/2013	<1	<1	NA	<1	<1	NA	<1
	W12IEMW9	10/1/2013	<1	<1	NA	<1	<1	NA	<1
	W12IEMW10	10/1/2013	**5**	3	NA	<1	<1	NA	<1
3	W12CVMW3	12/10/2014	**11**	**70**	**0.54**	2.1	<1	<0.5	<1
	W12CVMW4	12/10/2014	**12**	**85**	**0.65**	2.3	<1	<0.5	<1
	W12CVMW5	12/10/2014	**5.3**	**54**	<0.5	1.9	<1	<0.5	<1
20	W12AOC3N	2/13/2014	<1	4.3	<0.5	<1	<1	<0.5	<1
	W12AOC3SE	2/13/2014	**11**	**1,400**	<0.5	**42**	**6.8**	**7.1**	<1.0
	W12AOC1S	2/13/2014	<1	<1	<0.5	<1	<1	<0.5	<1
	W12AOC1NW	9/15/2014	**11**	**2,700**	<5.0	**31**	<5.0	<5.0	<5.0
22	W12VCGM1	9/17/2014	**106**	3.37	ND	0.555 J	ND	ND	ND
	W12VCMW2	9/17/2014	**15.1**	ND	ND	ND	ND	ND	ND
EPA	EPAMW11	6/26/2014	**7.2/7.4**	**150/150**	**0.57/0.59**	2.9/3	1.2/1.2	0.23 J/0.23 J	0.46 J/ 0.43 J
	EPAMW18	6/26/2014	<0.5/<0.5	0.1 J/<0.5	<0.5/<0.5	<0.5/<0.5	<0.5/<0.5	<0.5/<0.5	<0.5/<0.5

Notes:

All concentrations reported in micrograms per liter (µg/L)

1,1-DCA - 1,1-dichloroethane

1,1-DCE - 1,1-dichloroethene

1,2-DCA - 1,2-dichloroethane

cis-1,2-DCE - cis-1,2-dichloroethene

CT - carbon tetrachloride

J - Estimated concentration

MCL - maximum contaminant level

NA - not available

ND - not detected

PCE - tetrachloroethene

TCE - trichloroethene

VOC - volatile organic compound

TABLE 7B

Borehole VOC Groundwater Sample Results - Southwest Operable Unit Data Gap Investigation

San Gabriel Valley Area 3 Superfund Site

Borehole	Depth (feet bgs)	PCE (MCL = 5)	TCE (MCL = 5)	CT (MCL = 0.5)	cis-1,2-DCE (MCL = 6)	1,1-DCE (MCL = 6)	1,2-DCA (MCL = 5)	1,1-DCA (MCL = 0.5)
BH-03	190	1.6 J	**33 J**	0.16 J	2 J	<0.5	<0.5	<0.5
	210	0.95 J	**36 J**	0.18 J	2.4 J	<0.5	<0.5	<0.5
	220	0.62 J	**55**	0.31 J	4 J	<0.5	<0.5	0.41 J
BH-04	190	**7.7**	**64**	0.15 J	1.9	0.63	<0.5	<0.5
BH-05	190	**36**	**330**	0.17 J	**8.5**	2.9	1.1	<0.5
	210	**13**	**97**	0.39 J	2.3	0.83	0.5	<0.5
	220	2.9	**93**	0.3 J	2.2	<0.5	<0.5	<0.5
BH-06	80	1.8	**34**	<0.5	5.4	<0.5	<0.5	<0.5
	90	**9.7 J**	**330 J**	0.5 UJ	5 J	0.5 UJ	0.5 UJ	0.5 UJ
	100	**14 J**	**450**	0.052 J	**13 J**	4.5 J	0.49 J	<0.5
	110	0.91	**230**	0.11 J	**48**	<0.5	<0.5	<0.5
BH-07	80	0.24 J	**13**	<0.5	0.99	<0.5	<0.5	<0.5
	80 (FD)	0.18 J	**11**	<0.5	0.93	<0.5	<0.5	<0.5

Notes:

All concentrations reported in micrograms per liter (µg/L)

1,1-DCA - 1,1-dichloroethane

1,1-DCE - 1,1-dichloroethene

1,2-DCA - 1,2-dichloroethane

bgs - below ground surface

cis-1,2-DCE - cis-1,2-dichloroethene

CT - carbon tetrachloride

FD - field duplicate

J - Estimated concentration

MCL - maximum contaminant level

PCE - tetrachloroethene

TCE - trichloroethene

UJ - not detected above quantitation limit; quantitation limit is estimated

TABLE 8A

Phase I and Facility Monitoring Well Emerging Contaminant and Nitrate Groundwater Results - Southwest Operable Unit Data Gap Investigation

San Gabriel Valley Area 3 Superfund Site

Facility	Well ID	Perchlorate (MCL = 6 µg/L)		1,2,3-TCP (NL = 0.005 µg/L)		1,4-Dioxane (NL = 1 µg/L)		NDMA (NL = 0.01 µg/L)		Cr6 (MCL = 10 µg/L)		Nitrate-N (MCL = 10 mg/L)	
		Date	Result	Date	Result	Date	Result	Date	Result	Date	Result	Date	Result
Phase I Groundwater Sample Results													
4	W12CPMW1	-	-	7/30/2014	<0.005/ <0.005	7/30/2014	0.6 J/ 0.6 J	7/30/2014	<0.0019/ <0.0019	7/30/2014	**18 J/19 J**	7/30/2014	**12/12**
5	W12CW202	-	-	7/31/2014	<0.005	-	-	-	-	-	-	-	-
6	W12IWMW1	-	-	7/31/2014	<0.0025	-	-	-	-	-	-	-	-
7	W12PMMW1	-	-	7/30/2014	<0.005	-	-	7/30/2014	<0.0019	7/30/2014	<0.02	7/30/2014	<0.1
10	W12USMW1	-	-	7/31/2014	<0.0025	-	-	-	-	-	-	-	-
32	W12ARMW1	-	-	7/31/2014	<0.005	7/31/2014	**1**	7/31/2014	<0.0019	7/31/2014	**140 J**	7/31/2014	**11**
	W12ARMW2	-	-	7/30/2014	<0.005	7/30/2014	<1	7/30/2014	<0.0019	7/30/2014	**59**	7/30/2014	9.1
	W12ARMW3	-	-	7/31/2014	<0.005	7/31/2014	<1.1	7/31/2014	0.002	7/31/2014	**100 J**	7/31/2014	**12**
Facility Groundwater Sample Results													
1	W12ASMW1	-	-	-	-	2/27/2007	**6.2/6**	-	-	-	-	-	-
	W12ASMW2	-	-	-	-	2/27/2007	<0.47	-	-	-	-	-	-
	W12ASMW3	-	-	-	-	2/27/2007	<0.48	-	-	-	-	-	-
20	W12AOC3SE	-	-	5/24/2013	<0.025	5/24/2013	**2.3 J**	-	-	-	-	-	-
	W12AOC1NW	-	-	9/15/2014	<5	9/15/2014	<2.4	-	-	-	-	-	-
22	W12VCGM1	-	-	3/27/2012	ND	3/27/2012	ND	-	-	-	-	-	-
	W12VCMW2	-	-	3/27/2012	ND	3/27/2012	ND	-	-	-	-	-	-
EPA	EPAMW11	5/3/2011	5.2	11/16/2007	<0.005	12/2/2005	<1	12/2/2005	0.0009 J	11/16/2007	9.98	6/26/2014	**11/11**
	EPAMW18	12/19/2011	0.59	11/16/2007	<0.005	11/16/2007	0.6 UJ	5/24/2005	<0.002	11/16/2007	<0.2	6/26/2014	1.6

Notes:

1,2,3-TCP - 1,2,3-trichloropropane

µg/L - micrograms per liter

Cr6 - hexavalent chromium

J - estimated concentration

MCL - maximum contaminant level

mg/L milligrams per liter

ND - not detected

NDMA - n-nitrosodimethylamine

NL - notification level

UJ - not detected above quantitation limit; quantitation limit is estimated

TABLE 8B

Borehole Emerging Contaminant and Nitrate Groundwater Sample Results - Southwest Operable Unit Data Gap Investigation

San Gabriel Valley Area 3 Superfund Site

Borehole	Depth (feet bgs)	Perchlorate (MCL = 6)	1,2,3-TCP (NL = 0.005)	1,4-Dioxane (NL = 1)	NDMA (NL = 0.01)	Cr6 (MCL = 10)	Nitrate-N (MCL = 10)
BH-03	190	-	<0.005	-	-	-	-
	210	5.9	<0.005	<0.5	-	0.02 J	**11**
	220	**6.7**	0.005 UJ	<0.49	-	0.01 J	**11**
BH-04	190	**11**	0.0029 J	0.57	**1.4**	-	**11**
BH-05	190	-	<0.005	-	-	-	-
	210	**7.3**	0.0046 J	0.45 J	**0.31 J**	-	**12**
	220	5.4	<0.005	<0.47	**0.32 J**	-	9.1
BH-06	80	-	0.005 UJ	-	-	-	-
	90	-	<0.005	-	-	-	-
	100	2.9	<0.005	0.64	**0.015**	<0.01	**11**
BH-07	80	3.7	<0.005	<0.48	0.0056	0.01 UJ	5.4
	80 (FD)	4.1	<0.005	<0.49	0.02 UJ	0.08 J	6.1

Notes:

1,2,3-TCP - 1,2,3-trichloropropane

Cr6 - hexavalent chromium

FD - field duplicate

bgs - below ground surface

J - estimated concentration

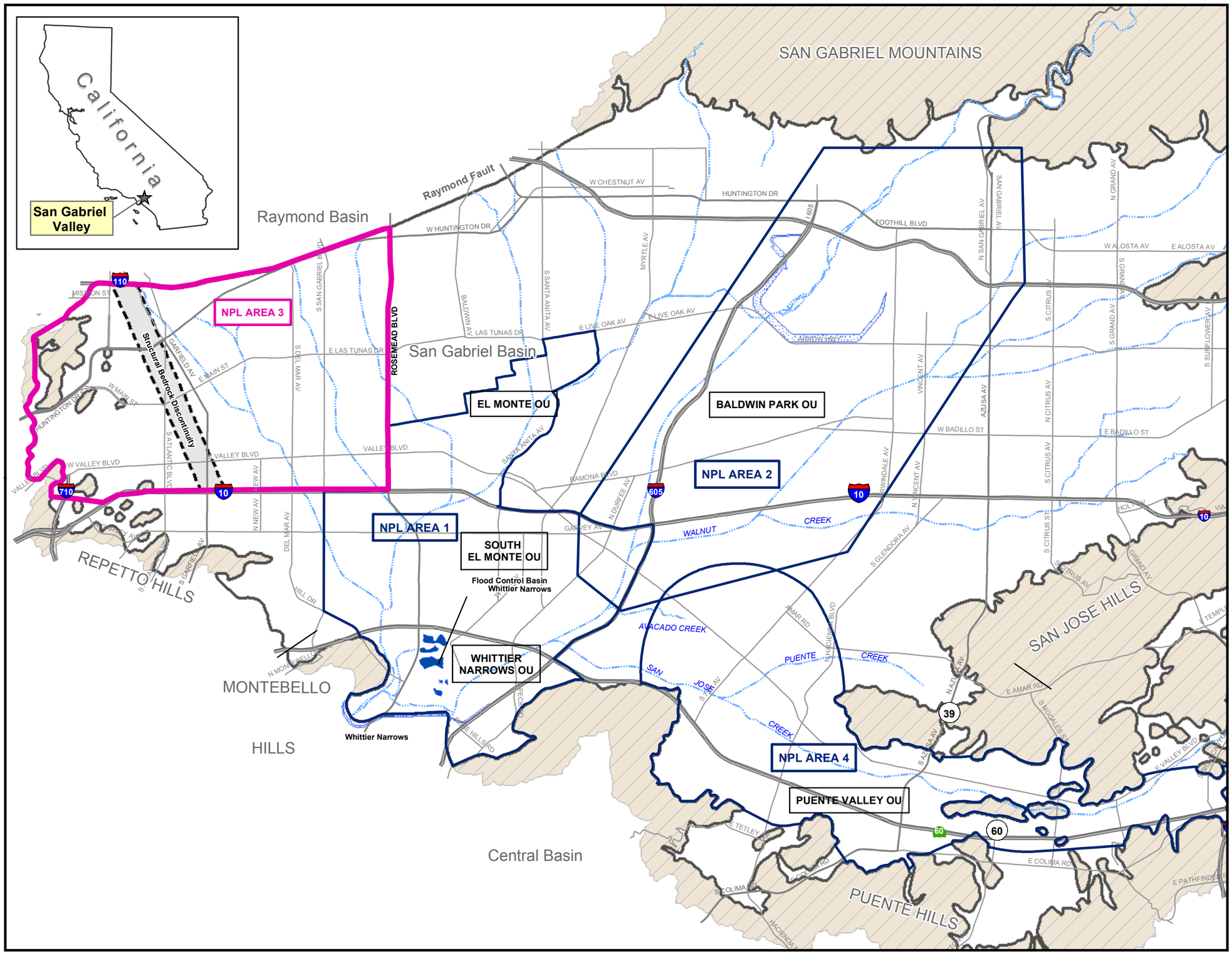
MCL - maximum contaminant level

NDMA - n-nitrosodimethylamine

NL - notification level

UJ - not detected above quantitation limit; quantitation limit is estimated

Figures



LEGEND

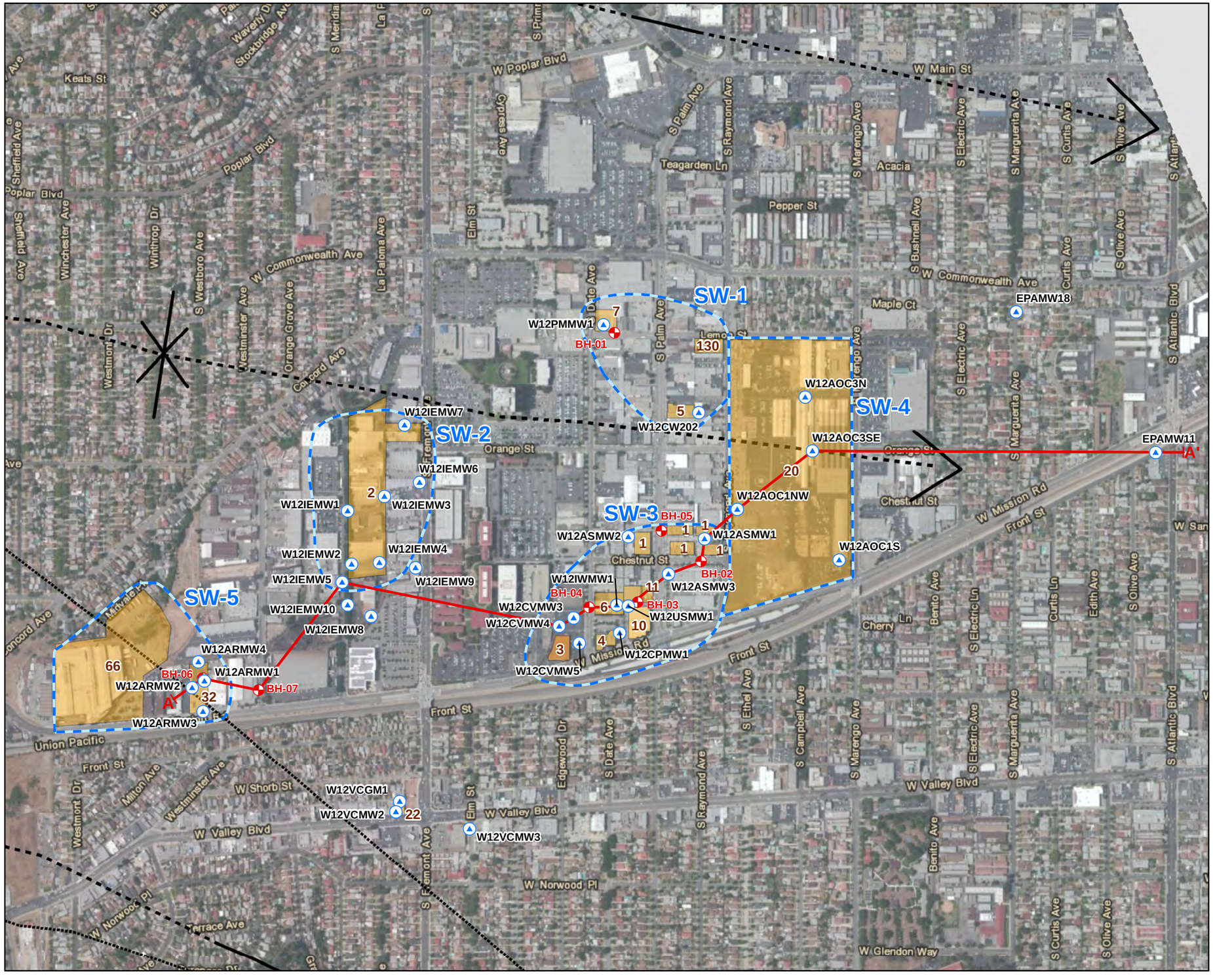
- NPL AREA 3 — National Priorities List (NPL) Area/San Gabriel Valley Superfund Site Name
- Structural Bedrock Discontinuity
- San Gabriel Basin Boundary
- Lakes
- Spreading Grounds
- Bedrock

N

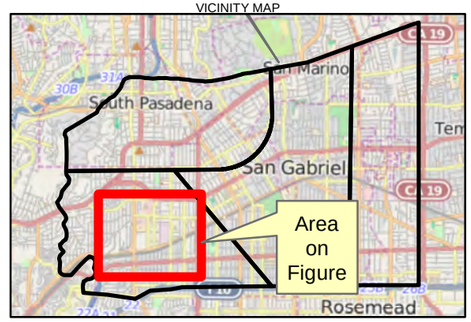
0 0.75 1.5 3

Miles

FIGURE 1
Location of Area 3 and Other San Gabriel Valley Superfund Sites
San Gabriel Valley Area 3 Superfund Site
Los Angeles County, California



VICINITY MAP



LEGEND

- Groundwater Monitoring Well
- Investgation Borehole
- Line of Cross-Section (A-A')
- Facility Location
- Approximate Subgeographies
- Faults
- Structural Bedrock Discontinuity
- Syncline
- Anticline
- Direction of Plunge

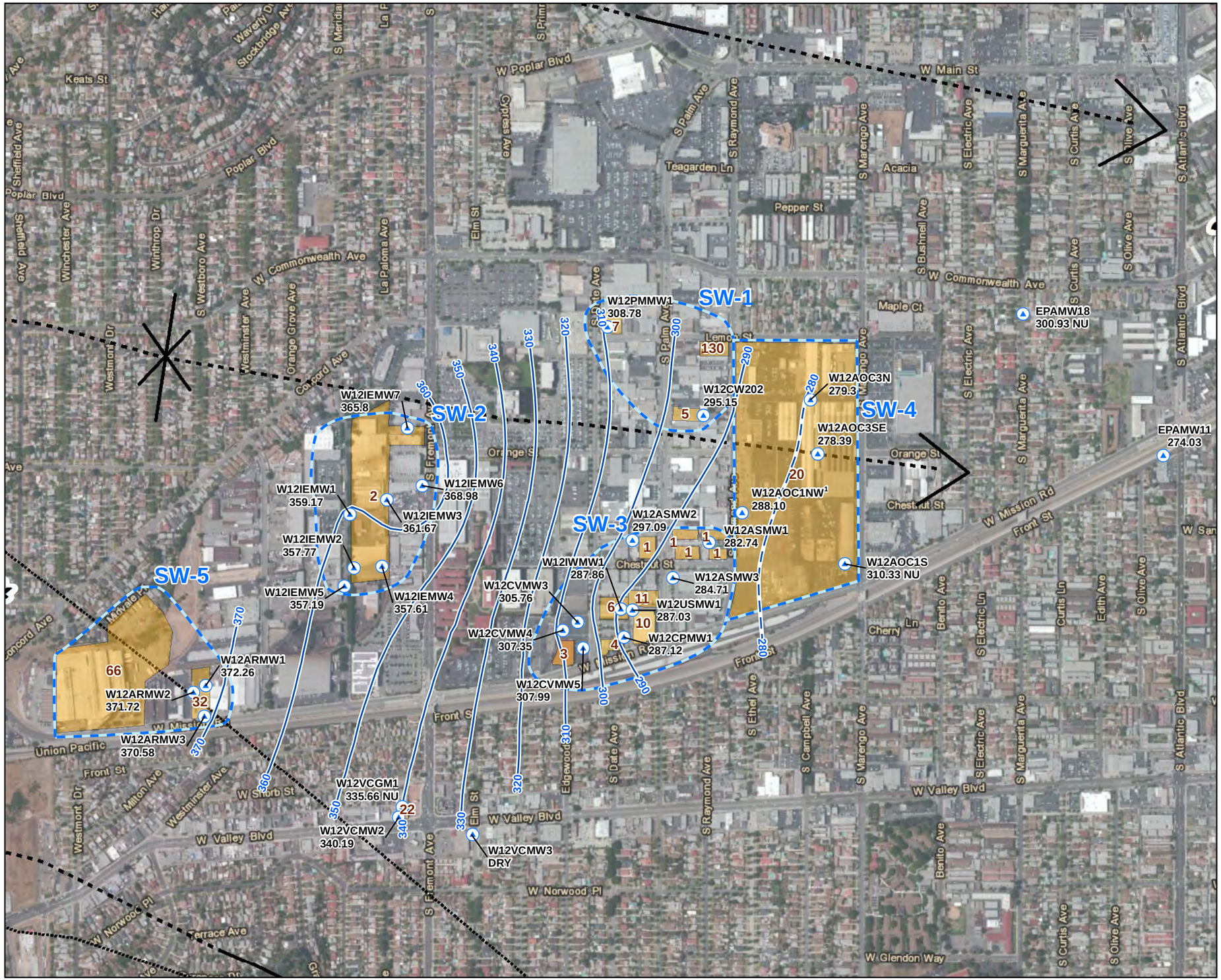
Note:
1. Subgeographies subject to change.

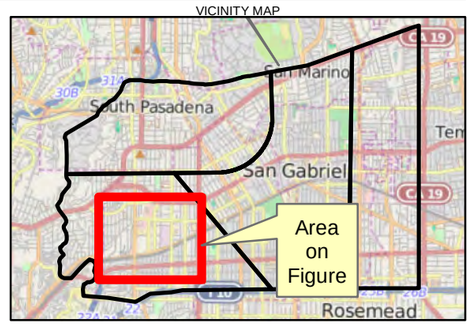
N

0 350 700 1,400
Feet

1 inch = 700 feet

FIGURE 2
Area 3 Southwest OU Subgeographies and Investigation Locations
San Gabriel Valley Area 3 Superfund Site
Los Angeles County, California





LEGEND

- Groundwater Monitoring Well
- Groundwater Elevation Contour (ft msl)
- Facility Location
- Approximate Subgeographies
- Faults
- Structural Bedrock Discontinuity
- Syncline
- Anticline
- Direction of Plunge

Notes:
1. Water level measured 09/25/2014
2. Subgeographies subject to change.
3. NU = Data not used for contouring
   ft msl = Feet (relative to) mean sea level
4. Groundwater elevation contours dashed where uncertain

N

0 350 700 1,400
Feet

1 inch = 700 feet

FIGURE 3
Area 3 Southwest OU Groundwater Elevation Contour Map
San Gabriel Valley Area 3 Superfund Site
Los Angeles County, California

CH2MHILL

West
A

East
A'

SW-5 SW-2 SW-3 SW-4

W12ARMW2 BH-06 BH-07 W12IEMW5 W12CVMW4 W12CVMW3 BH-04 BH-03 W12ASMW3 BH-02 W12ASMW1 W12AOC1NW W12AOC3SE EPAMW11

Elevation (ft msl)

500 450 400 350 300 250 200

2.6 J
28
1.8
34
9.7 J
330 J
14 J
450
0.91
230
0.24 J
13
9
7.7
12
85
1
70
7.7
64
1.6 J
33 J
3.0
32
0.95 J
36 J
0.62 J
55 J
4.6
430
11
2,700
11
1,400
7.4
150

?

Groundwater no encountered at BH-02

BEDROCK

0 350 700
(IN FEET)
Horizontal Scale 1 inch = 700 ft
Vertical Scale: 1 inch = 50 ft

LEGEND

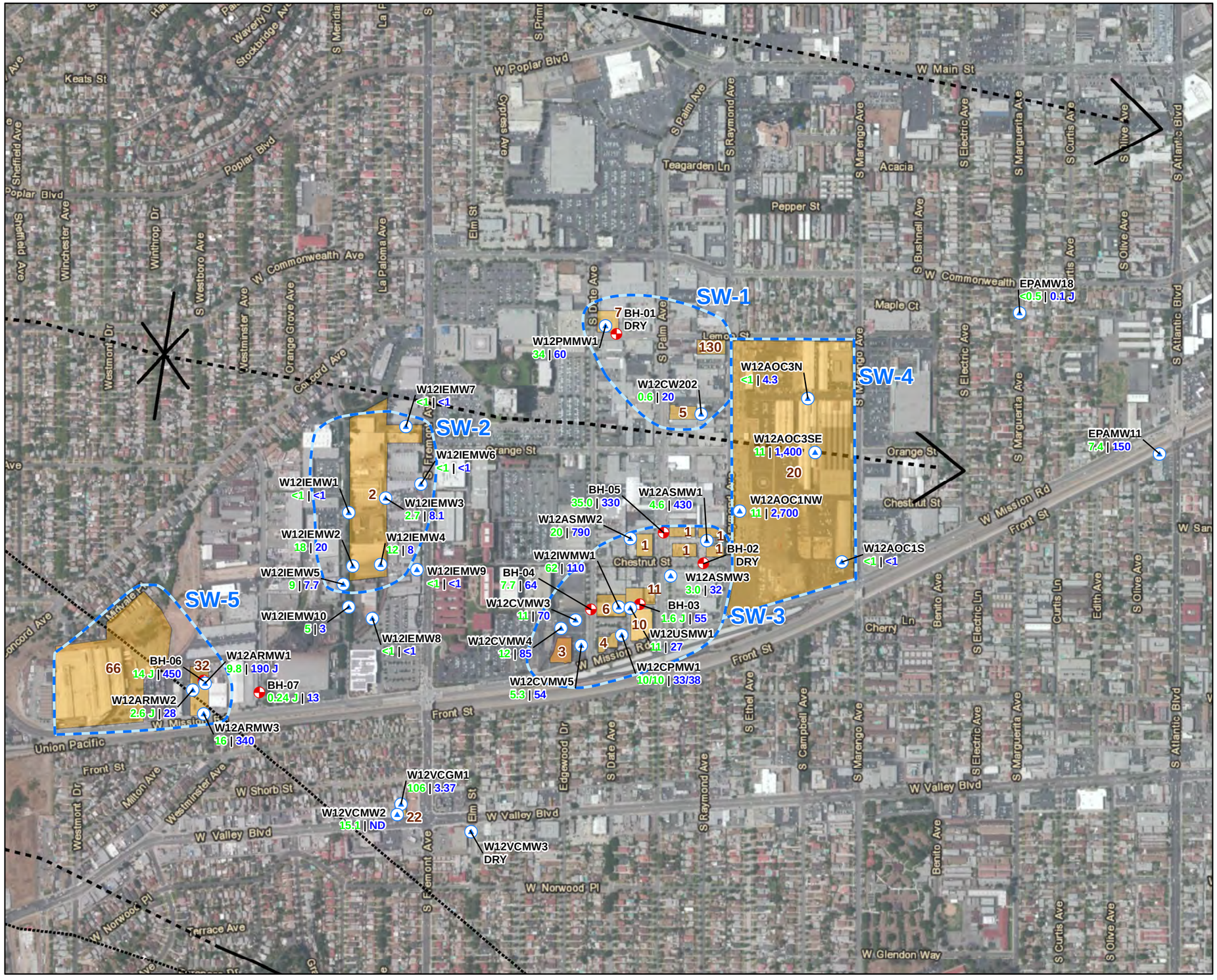
Groundwater Elevation
PCE: (µg/L)
TCE: (µg/L)
Monitoring Well Screen
Hydropunch Sample

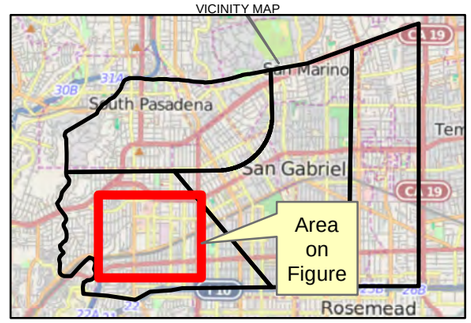
Bedrock
Clay
Silty or Clayey Sand or Gravel
Silt
Gravel
Silt or Clay
Sand
Sand and Gravel

FIGURE 4
Cross Section A-A'
San Gabriel Valley Area 3 Superfund Site
Los Angeles County, California

CH2MHILL

SGV AREA 3 - XY METERS 11X17 SW AREA 3.GPJ SW AREA 3 GDT.GDT 6/9/15
SCO385133.FI.01 SGV_cross_sectionAA_rev1.ai 6/15





LEGEND

- Groundwater Monitoring Well
- Investgation Borehole
- Facility Location
- Approximate Subgeographies
- Faults
- Structural Bedrock Discontinuity
- Syncline
- Anticline
- Direction of Plunge

EPAMW11
7.4 | 150 PCE|TCE (µg/L)

Notes:
1. Subgeographies subject to change.
2. Borehole data is maximum result in groundwater
3. J - Estimated concentration

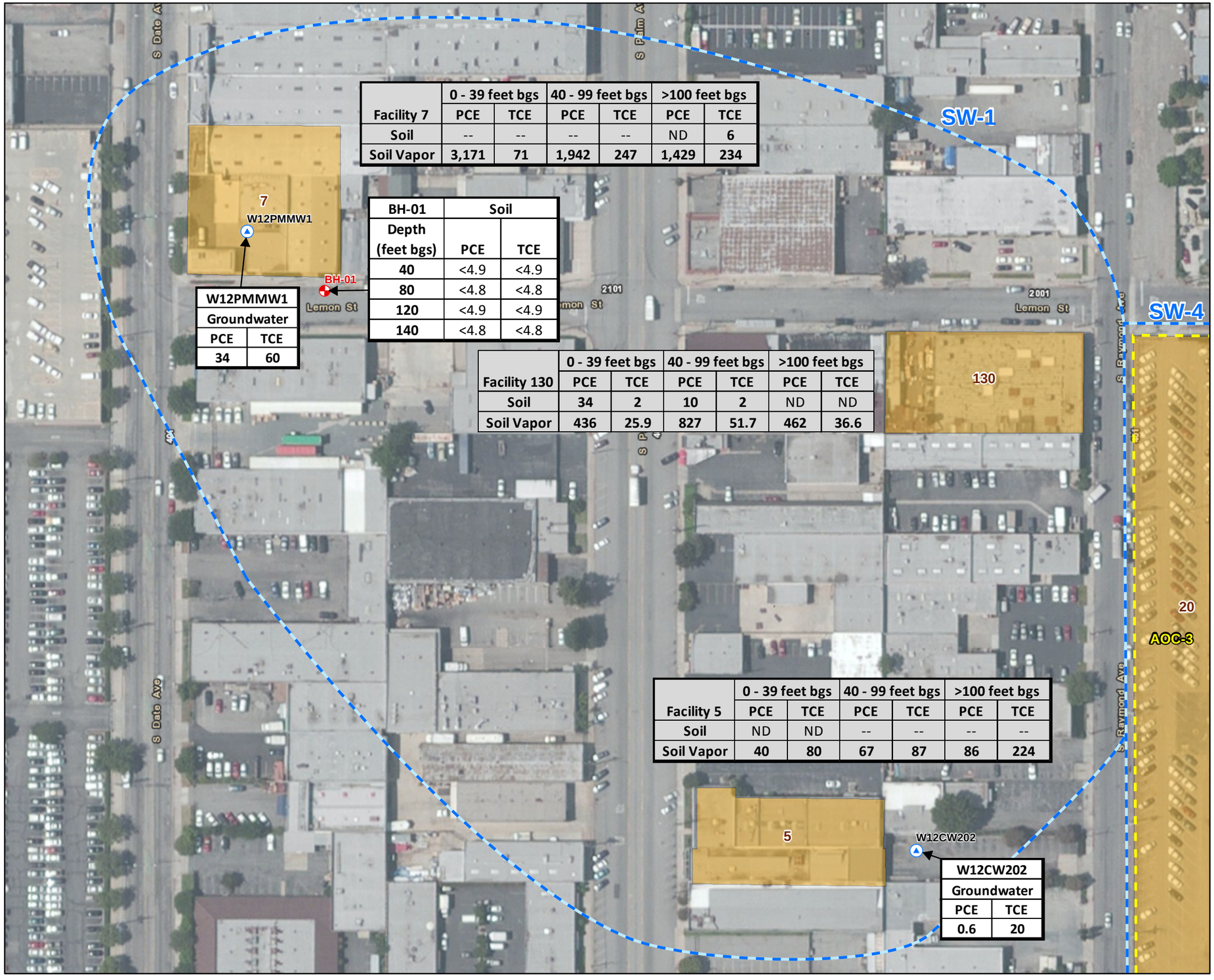
N

0 350 700 1,400
Feet

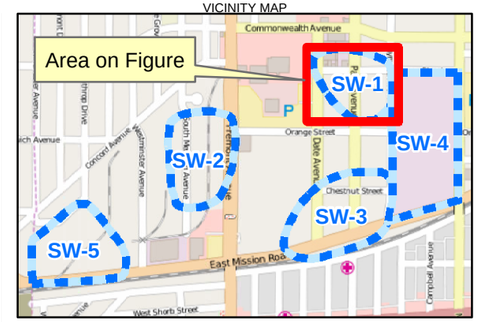
1 inch = 700 feet

FIGURE 5
Area 3 Southwest OU PCE and TCE Distribution in Groundwater
San Gabriel Valley Area 3 Superfund Site
Los Angeles County, California

CH2MHILL



VICINITY MAP



LEGEND

- Groundwater Monitoring Well
- Investgation Borehole
- Facility Location
- Approximate Subgeographies
- Area of Concern

Notes:
Groundwater and soil vapor data in micrograms per liter (ug/L).
Soil data in micrograms per kilogram (ug/kg).
White data boxes summarize EPA's 2014 Data Gap Investigation data.
Gray data boxes summarize data from individual facility reports.
All groundwater data from 2014.
Facility soil and soil vapor data represent maximum detections reported in historical reports.
SW - southwest
feet bgs - feet below ground surface
PCE - tetrachloroethene
TCE - trichloroethene
-- - not available
ND - not detected above laboratory method detection limit

N

0 50 100
Feet

FIGURE 6
Area 3 Southwest OU Subgeography SW-1
PCE and TCE Distribution
San Gabriel Valley Area 3 Superfund Site
Los Angeles County, California

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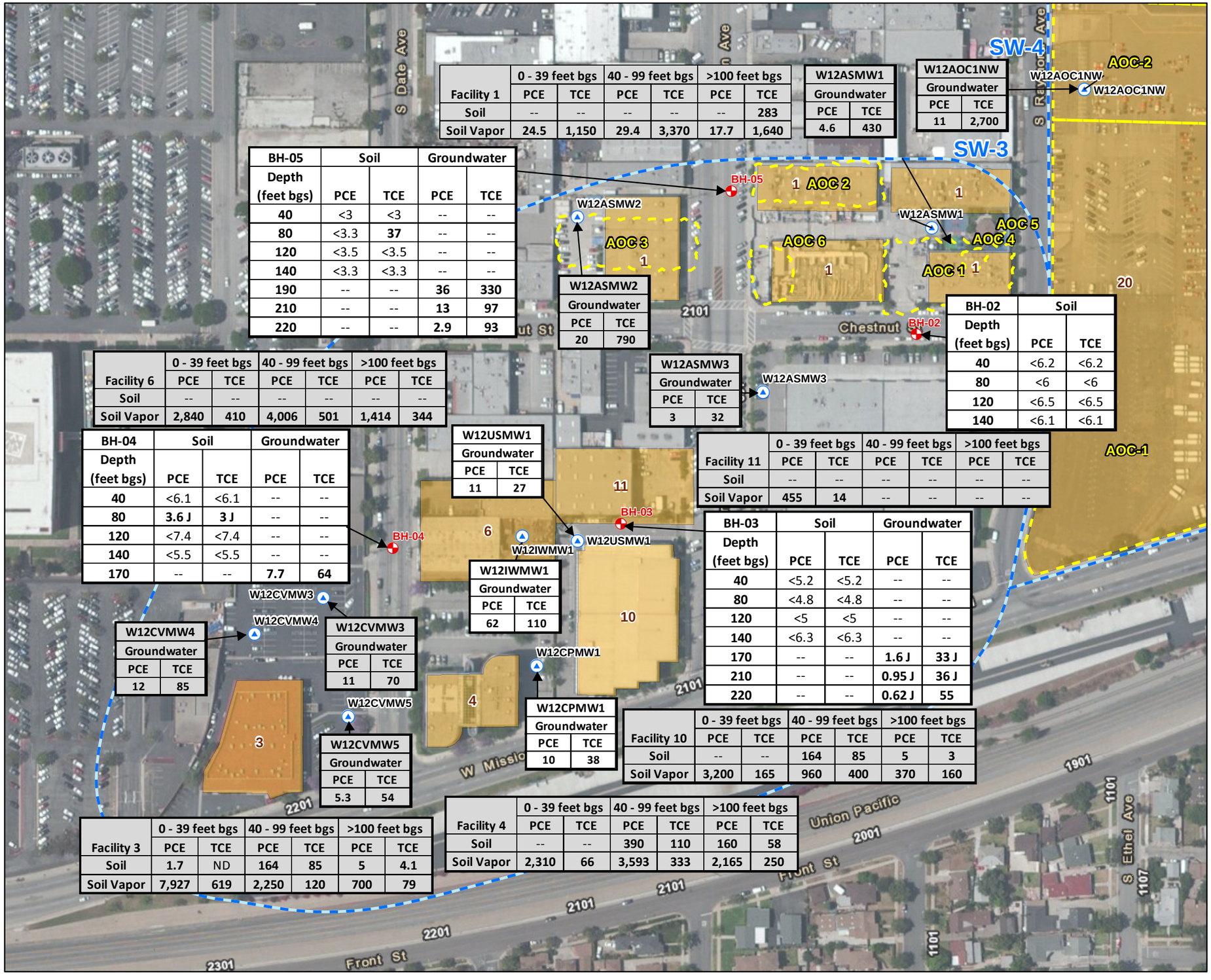
CH2MHILL



Facility 1	0 - 39 feet bgs		40 - 99 feet bgs		>100 feet bgs	
	PCE	TCE	PCE	TCE	PCE	TCE
Soil	--	--	--	--	--	283
Soil Vapor	24.5	1,150	29.4	3,370	17.7	1,640

W12ASMW1 Groundwater	
PCE	TCE
4.6	430

W12AOC1NW Groundwater	
PCE	TCE
11	2,700

BH-05	Soil		Groundwater	
Depth (feet bgs)	PCE	TCE	PCE	TCE
40	<3	<3	--	--
80	<3.3	37	--	--
120	<3.5	<3.5	--	--
140	<3.3	<3.3	--	--
190	--	--	36	330
210	--	--	13	97
220	--	--	2.9	93

W12ASMW2 Groundwater	
PCE	TCE
20	790

Facility 6	0 - 39 feet bgs		40 - 99 feet bgs		>100 feet bgs	
	PCE	TCE	PCE	TCE	PCE	TCE
Soil	--	--	--	--	--	--
Soil Vapor	2,840	410	4,006	501	1,414	344

W12ASMW3 Groundwater	
PCE	TCE
3	32

BH-02	Soil	
Depth (feet bgs)	PCE	TCE
40	<6.2	<6.2
80	<6	<6
120	<6.5	<6.5
140	<6.1	<6.1

BH-04	Soil		Groundwater	
Depth (feet bgs)	PCE	TCE	PCE	TCE
40	<6.1	<6.1	--	--
80	3.6 J	3 J	--	--
120	<7.4	<7.4	--	--
140	<5.5	<5.5	--	--
170	--	--	7.7	64

W12USMW1 Groundwater	
PCE	TCE
11	27

Facility 11	0 - 39 feet bgs		40 - 99 feet bgs		>100 feet bgs	
	PCE	TCE	PCE	TCE	PCE	TCE
Soil	--	--	--	--	--	--
Soil Vapor	455	14	--	--	--	--

W12IWMW1 Groundwater	
PCE	TCE
62	110

BH-03	Soil		Groundwater	
Depth (feet bgs)	PCE	TCE	PCE	TCE
40	<5.2	<5.2	--	--
80	<4.8	<4.8	--	--
120	<5	<5	--	--
140	<6.3	<6.3	--	--
170	--	--	1.6 J	33 J
210	--	--	0.95 J	36 J
220	--	--	0.62 J	55

W12CVMW4 Groundwater	
PCE	TCE
12	85

W12CVMW3 Groundwater	
PCE	TCE
11	70

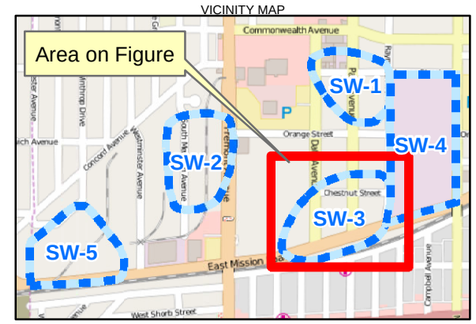
W12CVMW5 Groundwater	
PCE	TCE
5.3	54

W12CPMW1 Groundwater	
PCE	TCE
10	38

Facility 10	0 - 39 feet bgs		40 - 99 feet bgs		>100 feet bgs	
	PCE	TCE	PCE	TCE	PCE	TCE
Soil	--	--	164	85	5	3
Soil Vapor	3,200	165	960	400	370	160

Facility 3	0 - 39 feet bgs		40 - 99 feet bgs		>100 feet bgs	
	PCE	TCE	PCE	TCE	PCE	TCE
Soil	1.7	ND	164	85	5	4.1
Soil Vapor	7,927	619	2,250	120	700	79

Facility 4	0 - 39 feet bgs		40 - 99 feet bgs		>100 feet bgs	
	PCE	TCE	PCE	TCE	PCE	TCE
Soil	--	--	390	110	160	58
Soil Vapor	2,310	66	3,593	333	2,165	250



LEGEND
- Groundwater Monitoring Well
- Investgation Borehole
- Approximate Subgeographies
- Facility Location
- Area of Concern

Notes:
Groundwater and soil vapor data in micrograms per liter (ug/L).
Soil data in micrograms per kilogram (ug/kg).
White data boxes summarize EPA's 2014 Data Gap Investigation data.
Gray data boxes summarize data from individual facility reports.
All groundwater data from 2014.
Facility soil and soil vapor data represent maximum detections reported in historical reports.
SW - southwest
feet bgs - feet below ground surface
PCE - tetrachloroethene
TCE - trichloroethene
-- - not available
ND - not detected above laboratory method detection limit
J - Estimated concentration

N

0 75 150
Feet

FIGURE 7
Area 3 Southwest OU Subgeography SW-3
PCE and TCE Distribution
San Gabriel Valley Area 3 Superfund Site
Los Angeles County, California

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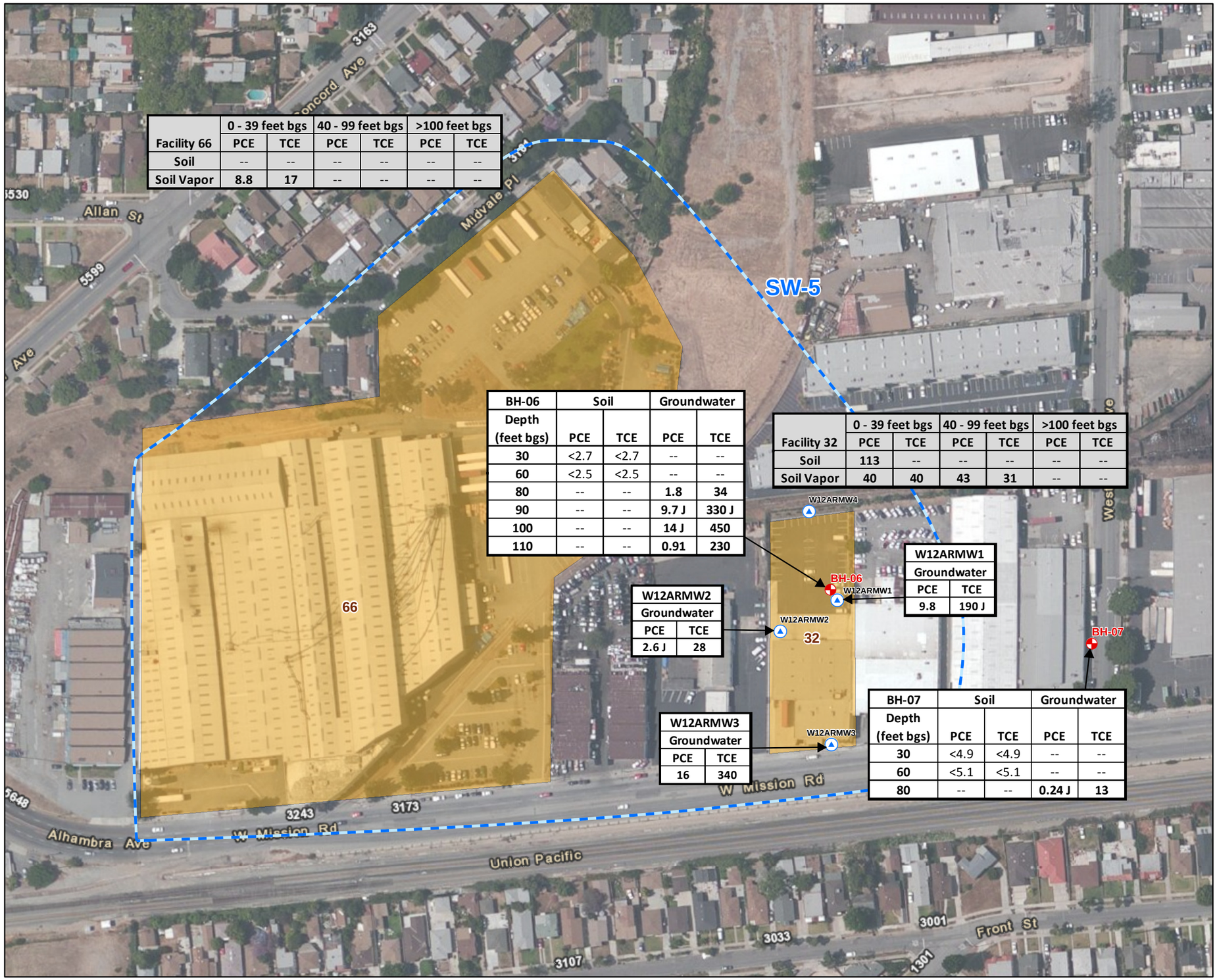


Facility 66	0 - 39 feet bgs		40 - 99 feet bgs		>100 feet bgs	
	PCE	TCE	PCE	TCE	PCE	TCE
Soil	--	--	--	--	--	--
Soil Vapor	8.8	17	--	--	--	--

BH-06	Soil		Groundwater	
Depth (feet bgs)	PCE	TCE	PCE	TCE
30	<2.7	<2.7	--	--
60	<2.5	<2.5	--	--
80	--	--	1.8	34
90	--	--	9.7 J	330 J
100	--	--	14 J	450
110	--	--	0.91	230

Facility 32	0 - 39 feet bgs		40 - 99 feet bgs		>100 feet bgs	
	PCE	TCE	PCE	TCE	PCE	TCE
Soil	113	--	--	--	--	--
Soil Vapor	40	40	43	31	--	--

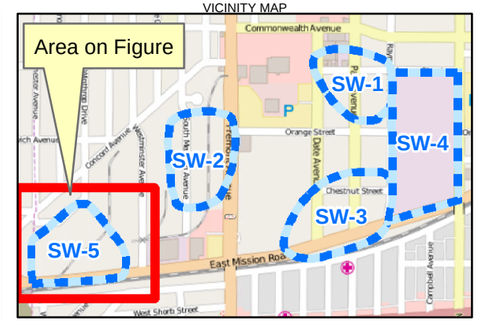
W12ARMW1	
Groundwater	
PCE	TCE
9.8	190 J

W12ARMW2	
Groundwater	
PCE	TCE
2.6 J	28

W12ARMW3	
Groundwater	
PCE	TCE
16	340

BH-07	Soil		Groundwater	
Depth (feet bgs)	PCE	TCE	PCE	TCE
30	<4.9	<4.9	--	--
60	<5.1	<5.1	--	--
80	--	--	0.24 J	13

VICINITY MAP



LEGEND

- Groundwater Monitoring Well
- Investgation Borehole
- Facility Location
- Approximate Subgeographies

Notes:
Groundwater and soil vapor data in micrograms per liter (ug/L).
Soil data in micrograms per kilogram (ug/kg).
White data boxes summarize EPA's 2014 Data Gap Investigation data.
Gray data boxes summarize data from individual facility reports.
All groundwater data from 2014.
Facility soil and soil vapor data represent maximum detections reported in historical reports.
SW - southwest
feet bgs - feet below ground surface
PCE - tetrachloroethene
TCE - trichloroethene
-- - not available
ND - not detected above laboratory method detection limit
J - Estimated distribution

N

0 75 150
Feet

FIGURE 8
Area 3 Southwest OU Subgeography SW-5
PCE and TCE Distribution
San Gabriel Valley Area 3 Superfund Site
Los Angeles County, California

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CH2MHILL

Appendix A
Groundwater Level Gauging and Purging Field Forms

TABLE 1

Summary of Southwest Area 3 Facility Contact Information and Field Activities

San Gabriel Valley Area 3 Superfund Site

EPA-MW11 DTW = 188.05 @ 1030 EPA-MW18 DTW = 178.08 @ 1040

Facility	SW Subgeography	Facility address	Gauge Order	Facility Contact Information	GWMWs	EPA Well ID	Historical DTW (ft bgs)	Historical TD (ft bgs)	Depth to Water	Comments
1	SW-3	2015-2025 West Chestnut Street, Alhambra, CA, 91803	2	Emcore's General Manager: Steve De Sena, Operations Support Manager	3	W12ASMW1	183	200	188.71	TD - 199.82 0832
						W12ASMW2	175	185	176.58	TD - 184.62 0808
						W12ASMW3	179	194	183.87	TD = 193.15 0815
2	SW-2	1000 South Meridian Avenue, Alhambra, CA, 91803	10	Ron/Construction Manager 949 294-1532	7	W12IEMW1	94	145.5	102.22	No well vault 136.90 0933
						W12IEMW2	107	140.5	103.17	TD 116.64 0938
						W12IEMW3	87	145.5	101.86	TD = 136.01 0925
						W12IEMW4	102	120.5	104.54	TD = 114.82 0945
						W12IEMW5	100	120.5	99.85	TD = 117.86 1003
						W12IEMW6	92	127	92.88	TD = 124.74 1015
						W12IEMW7	100	120.5	101.15	TD = 112.65 0954
3	SW-3	2215 Mission Road, Alhambra, CA, 91803	5		3	W12CVMW3	159	166	162.36	7/31/14 TD 164.30
						W12CVMW4	155	167	158.58	7/31/14 TD 166.35
						W12CVMW5	155	163	158.28	7/31/14 162.20
4	Vilma SW-3	2121 West Mission Road, Alhambra, CA, 91803	626 825-9888 4	Denton/contact	1	W12CPMW1	170	190	Car on top of well 7/30 179.15	189.82 0700
5	SW-1	500 South Palm Avenue, Alhambra, CA	John 8 626 201-0800		1	W12CW202 2in	184	200	185.71	TD 198.02 1102
6	SW-3	820 South Date Avenue, Alhambra, CA, 91803	6		1	W12IWMW1	178	100	183.69	189.78
7	SW-1	2125 Lemon Street, Alhambra, CA, 91803	9	Jose Manager	1	W12PMMW1	190	200	181.05 179.44	198.76 dry well 1136 ~~199.62~~
10	SW-3	2101 West Mission Road, Alhambra, CA	3		1	W12USMW1 2in	166	200	180.29	TD = 190.44 1200

TABLE 1

Summary of Southwest Area 3 Facility Contact Information and Field Activities

San Gabriel Valley Area 3 Superfund Site

Facility	SW Subgeography	Facility address	Gauge Order	Facility Contact Information	GWMWs	EPA Well ID	Historical DTW (ft bgs)	Historical TD (ft bgs)	Depth to Water	Comments
20	SW-4	501 South Merango, Alhambra, CA, 91803	1	John Johnsen/EHS manager 626.756.6403	3	W12AOC3N	193	201	194.14	TD 200.74 0722
						W12AOC3SE	193	200	194.22	TD 199.30 0730
						W12AOC1SE	161	202	155.36	TD 189.60 0740
22	SW-6	2619 Valley Boulevard, Alhambra, CA, 91803	7		3	W12VCGM1 2in	108	185	108.06	TD 178.12 1218
						W12VCMW2	102		102.59	TD 115.36 1213
						W12VCMW3	129		——	TD 128.72 dry well 1226
32	SW-5	3033 West Mission Road, Alhambra, CA, 91803	11		4	W12ARMW1	72	99	76.56	TD 94.14 1310
						W12ARMW2	70	97	75.74	TD 95.02 1300
						W12ARMW3	67	90	71.71	TD 89.84 1240
						W12ARMW4	70	96		Unable to locate will try tomorrow with metal Detector

CH2MHILL

Groundwater Monitoring Field Activity Sheet

Well ID: WIZIWMW1
Date of Field Visit: 7/31/14
Field Staff: Mike Palm
NT

Well Casing Dia. 4"
Static WL: 183.69
Total Depth 189.78
Sampling Equipment disposable bailer

Field Parameters

Clock Time (24 HR)	Water Level (ft bgs)	Temp. °C	Specific Conductivity (mS/cm)	DO (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Comments
1400	183.69	24.8	1.091	6.55	6.77	189.2	121	-No purge sample taken -
								sample time = 1400

Final SWL: -
Total Vol.: -

CH2MHILL

Groundwater Monitoring Field Activity Sheet

Well ID: W12CPMW1
Date of Field Visit: 7/30/14
Field Staff: Mike Palm
NT

Well Casing Dia. 4"
Static WL: 179.15
Total Depth 189.82
Sampling Equipment 2" Redi flo Grundfos
New tubing

Field Parameters

start purge @ 0912

case vol. = 6.9 x 3 = 20.7
flow rate = 1 gpm

Clock Time (24 HR)	Water Level (ft bgs)	Temp. °C	Specific Conductivity (mS/cm)	DO (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Comments gallons removed
0916	181.60	24.9	1.051	9.13	7.12	172.7	548	4
0919	181.82	25.5	0.969	9.12	7.10	173.9	419	7
0923	181.85	25.6	0.933	8.78	7.14	171.7	279	11
0927	181.85	25.1	1.003	9.08	7.12	172.2	249	15
0931	181.86	26.5	1.001	9.09	7.12	171.3	252	19
0935	182.02	26.2	0.999	9.02	7.12	170.4	214	23
0939	182.10	25.7	0.998	9.13	7.11	170.8	386	27
0943	182.12	25.7	0.994	9.08	7.11	170.7	335	31
0947	182.12	25.7	0.995	9.11	7.13	172.5	321	35
0951	182.13	25.8	0.998	9.12	7.10	175.6	316	39
0955	182.13	25.7	0.996	9.13	7.10	176.1	310	43
								sample time = 1000 dup = 1015

Final SWL: 182.13
Total Vol.: 43 gals

CH2MHILL

Groundwater Monitoring
Field Activity Sheet

Well ID: W12PMMW1
Date of Field Visit: 7/30/14
Field Staff: Mike Palm
NT

Well Casing Dia. 4"
Static WL: 191.05
Total Depth 198.76
Sampling Equipment 2" Redi-Flo Grundfos
New Tubing

case vol. = 11.5 x 3 = 34.5
flow rate = 1 gpm

Field Parameters

start purge @ 1059

Clock Time (24 HR)	Water Level (ft bgs)	Temp. °C	Specific Conductivity (mS/cm)	DO (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Comments gals removed
1105	186.68	25.3	4026	1.01	6.94	-16.8	17	6
1111	190.96	27.1	4.035	1.04	6.93	-22.7	19	12
1117	192.76	27.2	4.041	1.05	6.92	-27.4	11	18
1123	193.26	27.3	4.037	0.71	6.91	-34.1	7	24
1129	193.58	27.3	4.036	0.68	6.91	-30.4	6	30
1134	193.64	27.2	4.034	0.66	6.90	-31.6	6	35
								sample time = 1135

Final SWL: 193.64
Total Vol.: 35 gals.

CH2MHILL

Groundwater Monitoring Field Activity Sheet

Well ID: W12ARMW2
Date of Field Visit: 7/30/14
Field Staff: Mike Palm
NT

Well Casing Dia. 4"
Static WL: 75.74
Total Depth 95.02
Sampling Equipment 2" Redi flo
New tubing

Field Parameters

start purge @ 1323

case vol. = 12.5 x 3 = 37.5
flow rate = 1 gpm

Clock Time (24 HR)	Water Level (ft bgs)	Temp. °C	Specific Conductivity (mS/cm)	DO (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Comments gals removed
1330	76.52	23.6	1.068	4.26	6.36	169.8	49	7
1337	76.55	23.6	1.066	4.35	6.34	143.0	24	14
1344	76.56	23.6	1.049	4.27	6.33	143.8	7	21
1351	76.56	23.5	1.058	4.27	6.34	144.7	4	28
1357	76.56	23.6	1.060	4.25	6.34	142.4	3	34
1401	76.57	23.6	1.061	4.25	6.34	142.0	3	38
								Sample time = 1402

Final SWL: 76.57
Total Vol.: 38 gals

CH2MHILL

Groundwater Monitoring Field Activity Sheet

Well ID: W12CW202
Date of Field Visit: 7/31/14
Field Staff: Mike Palm
NT

Well Casing Dia. 2"
Static WL: 185.71
Total Depth 198.02
Sampling Equipment 2" Rediflo
New tubing

Field Parameters

start purge @ 0848

case vol. = 1.9 x 3 = 5.7
flow rate = 1/2 gpm

Clock Time (24 HR)	Water Level (ft bgs)	Temp. °C	Specific Conductivity (mS/cm)	DO (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Comments gals removed
0854	——	pump off, pump overheated ——						3
								9 HCL voas collected
0915	~	24.1	1.211	7.80	7.01	218.4	>1000	sample time = 0915

Final SWL:
Total Vol.:

CH2MHILL

Groundwater Monitoring Field Activity Sheet

Well ID: WIZARMW3
Date of Field Visit: 7/30/14
Field Staff: Mike Palm
NT

Well Casing Dia. 4"
Static WL: 71.71
Total Depth 89.84
Sampling Equipment 2" Rediflo
New Tubing

case vol. = 11.8 x 3 = 35.4
purge rate = 1 gpm

Field Parameters

start purge @ 1220

Clock Time (24 HR)	Water Level (ft bgs)	Temp. °C	Specific Conductivity (mS/cm)	DO (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Comments
								gals removed
1226	74.31	24.3	0.989	3.75	6.46	205.6	127	6
1232	76.95	25.9	0.986	3.68	6.43	187.9	103	12
1238	80.40	25.0	0.978	3.88	6.42	177.2	899	18
1250	86.30	27.2	1019	3.25	6.47	169.7	>1000	24 lowered purge rate to ½ gpm
1258	87.68	27.8	1006	3.20	6.47	165.1	>1000	26 lowered purge rate to ¼ gpm
		well	developed @	26	gallons			
7/31/14								
0815	80.36	23.4	1.016	3.97	6.46	185.1	610	sample time = 0815

Final SWL: 80.36
Total Vol.: 26 gals

CH2MHILL

Groundwater Monitoring Field Activity Sheet

Well ID: W12SMW1
Date of Field Visit: 7/30/14
Field Staff: Mike Palm
NT

Well Casing Dia. 2"
Static WL: 180.29
Total Depth 190.44
Sampling Equipment 2" Redi-flo grundfos
New tubing

case vol. = 1.6 x 3 = 4.8

Field Parameters

Clock Time (24 HR)	Water Level (ft bgs)	Temp. °C	Specific Conductivity (mS/cm)	DO (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Comments
0802	— pump off		, pump	overheated				
~~0~~								
7/31/14								
0732	— bladder pump clogged, fine silt in pump inlet							
0930	—	22.1	1.009	8.51	7.49	204.1	>1000	
~~0915~~	~	24.1	1.211	1.80	7.01	~~218.4~~	>1000	9 HCL voas collected

sample time = ~~0915~~ 0930

Final SWL: —
Total Vol.: —

CH2MHILL

Groundwater Monitoring
Field Activity Sheet

Well ID:	W12ARMW1	**Well Casing Dia.**	4"
Date of Field Visit:	7/31/14	**Static WL:**	76.56
Field Staff:	Mike Palm	**Total Depth**	94.14
	NT	**Sampling Equipment**	2" Rediflo
			New Tubing

Field Parameters

start purge @ 1110

case vol. = 11.5 x 3 = 34.5

flow rate = 1 gpm

Clock Time (24 HR)	Water Level (ft bgs)	Temp. °C	Specific Conductivity (mS/cm)	DO (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Comments gals removed
1116	77.09	23.7	0.980	4.16	6.44	187.7	89	6
1122	77.09	23.8	0.933	4.38	6.38	181.5	72	12
1128	77.09	23.7	0.923	4.38	6.36	171.7	20	18
1134	77.09	23.7	0.952	4.36	6.36	163.3	6	24
1140	77.09	23.7	0.954	4.33	6.36	160.1	5	30
1145	77.09	23.7	0.954	4.32	6.36	159.0	5	35
								sample time = 1145

Final SWL: 77.09

Total Vol.: 35 gals

Appendix B
Borehole Logs

CH2MHILL

PROJECT NUMBER:	BORING NUMBER:
385133.FL.01	BH-01 SHEET 1 OF 6

SOIL BORING LOG

PROJECT : Area 3 DGI Phase II Investigation LOCATION : Alhambra, CA

ELEVATION : DRILLING CONTRACTOR : National

DRILLING METHOD AND EQUIPMENT : Air Rotary Casing Hammer (ARCH) with 9 5/8" Casing and 2" Hammer

WATER LEVELS : --- START : 8/20/14 13:00 END : 8/21/14 14:30 LOGGER : Nicole Alkov

DEPTH BELOW GROUND SURFACE (ft)	INTERVAL (ft)	RECOVERY (ft)	#TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION
					0-6" - Asphalt.	
5						
	8.5					
10	10.0	1.5	SS-1	50 (50)	**Well Graded Gravel** White (5Y 8/1), dry, very dense, 90% gravel (50% fine, 50% coarse to 2"), angular to subangular, 10% sand (5% fine, 5% medium to coarse), coarse grained.	PID = 1.0 ppm
15						
	18.5					
	19.0	1.5	SS-2	50 (50)	**Well Graded Sand with Gravel** Brown (7.5YR 5/3), dry, very dense, 20% gravel (10% fine, 5% coarse to 1"), subangular to subrounded, 80% sand (70% fine, 5% medium, 5% coarse).	PID = 1.7 ppm
20					**Well Graded Sand** Brown (7.5YR 5/3), dry, very dense, 5% gravel, fine to 0.5", subangular to subrounded, 95% sand (85% fine, 5% medium, 5% coarse).	
25						
	28.5					
30	30.0	1.5	SS-3	6-9-11 (20)	**Silty Sand** Brown (7.5YR 4/3), moist, loose to medium dense, 75% sand (70% fine, 5% medium), 25% fines, trace fine subrounded gravel to 0.25", fine grained.	PID = 0.7 ppm
35						
	38.5					
40	40.0	1.5	SS-4	7-7-12 (19)		

PROJECT NUMBER:	BORING NUMBER:
385133.FL.01	BH-01 SHEET 2 OF 6

SOIL BORING LOG

PROJECT : Area 3 DGI Phase II Investigation LOCATION : Alhambra, CA

ELEVATION : DRILLING CONTRACTOR : National

DRILLING METHOD AND EQUIPMENT : Air Rotary Casing Hammer (ARCH) with 9 5/8" Casing and 2" Hammer

WATER LEVELS : --- START : 8/20/14 13:00 END : 8/21/14 14:30 LOGGER : Nicole Alkov

DEPTH BELOW GROUND SURFACE (ft)	INTERVAL (ft)	RECOVERY (ft)	#TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION
45					**Silty Sand** Brown (7.5YR 4/3), moist, loose to medium dense, 80% fine sand, 20% fines.	PID = 1.6 ppm Soil sample at 40' (8/20/14, 1410)': SW1-BHSO-01-40 VOCs and chemical analyses
	48.5					
50	50.0	1.5	SS-5	50 (50)	**Well Graded Sand with Gravel** Yellowish brown (10YR 5/4), dry, very dense, 20% gravel (10% fine, 10% coarse to 1.25"), angular to subrounded, 80% sand (50% fine, 15% medium, 5% coarse).	PID = 3.0 ppm Soil sample at 50' (8/20/14, 1430): SW1-BHSO-01-50 Geotech
55						
	58.5					
60	60.0	1.5	SS-6	50 (50)	**Well Graded Sand with Gravel** Light yellowish brown (10YR 6/4), dry, very dense, 15% gravel (10% fine, 5% coarse to 1"), angular to subrounded, 85% sand (65% fine, 10% medium, 10% coarse).	PID = 3.6 ppm
65						
	68.5					
70	70.0	1.5	SS-7	10-13-15 (28)	**Silty Sand** Brown (7.5YR 4/4), moist, loose to medium dense, 55% fine sand, trace medium sand, 45% fines (silt).	PID = 0.3 ppm
75						
	78.5					
80	80.0	1.5	SS-8	9-13-22 (35)		

CH2MHILL

PROJECT NUMBER:	BORING NUMBER:
385133.FL.01	BH-01 SHEET 3 OF 6

SOIL BORING LOG

PROJECT : Area 3 DGI Phase II Investigation LOCATION : Alhambra, CA

ELEVATION : DRILLING CONTRACTOR : National

DRILLING METHOD AND EQUIPMENT : Air Rotary Casing Hammer (ARCH) with 9 5/8" Casing and 2" Hammer

WATER LEVELS : --- START : 8/20/14 13:00 END : 8/21/14 14:30 LOGGER : Nicole Alkov

DEPTH BELOW GROUND SURFACE (ft)	INTERVAL (ft)	RECOVERY (ft)	#TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION
85					**Silty Sand** Brown (7.5YR 4/4), moist, loose to medium dense, 85% fine sand, 15% fines (silt).	PID = 0.2 ppm Soil sample at 80 (8/20/14, 1530): SW1-BHSO-01-80 VOCs and chemical analyses
	88.5					
90	90.0	1.5	SS-9	8-14-21 (35)	**Silty Sand** Brown (10YR 4/3), moist, loose to medium dense, 65% fine sand, 35% fines (silt).	PID = 0.3 ppm
95						
	98.5					
100	100.0	1.5	SS-10	50 (50)	**Well Graded Sand with Gravel** Light yellowish brown (10YR 6/4), dry, very dense, 15% gravel (10% coarse to 1", 5% fine), angular to subangular, 80% sand (5% coarse, 10% medium, 65% fine), 5% fines.	PID = 0.4 ppm
105						
	108.5					
110	110.0	1.5	SS-11	8-11-13 (24)	**Well Graded Sand** Very pale brown (10YR 7/3), dry, loose to medium dense, 95% sand (35% coarse, 45% medium, 15% fine), 5% fines.	PID = 0.3 ppm
115						
	118.5					
120	120.0	1.5	SS-12	50 (50)		

CH2MHILL

PROJECT NUMBER:	BORING NUMBER:
385133.FL.01	BH-01 SHEET 4 OF 6

SOIL BORING LOG

PROJECT : Area 3 DGI Phase II Investigation LOCATION : Alhambra, CA

ELEVATION : DRILLING CONTRACTOR : National

DRILLING METHOD AND EQUIPMENT : Air Rotary Casing Hammer (ARCH) with 9 5/8" Casing and 2" Hammer

WATER LEVELS : --- START : 8/20/14 13:00 END : 8/21/14 14:30 LOGGER : Nicole Alkov

DEPTH BELOW GROUND SURFACE (ft)	INTERVAL (ft)	RECOVERY (ft)	#TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION
125					**Poorly Graded Sand** Light brown (7.5YR 6/3), dry, very dense, 10% gravel, fine to 0.5", subangular to subrounded, 90% Sand (5% coarse, 5% medium, 80% fine).	PID = 4.9 ppm Soil sample at 120' (8/21/14, 0830): SW1-BHSO-01-120 VOCs and chemical analyses
	128.5					
130	130.0	1.5	SS-13	9-12-16 (28)	**Poorly Graded Sand** Light brown (75YR 6/3), moist, loose to medium dense, 100% sand, 5% medium sand, 95% fine sand, trace subrounded gravel to 0.25".	PID = 2.6 ppm
135						
	138.5					
140	140.0	1.5	SS-14	12-16-21 (37)	**Silty Sand** Yellowish brown (10YR 5/4), moist, medium dense, 75% fine sand, 25% fines.	PID = 1.4 ppm Soil sample at 140' (8/21/14, 0900): SW1-BHSO-01-140 VOCs and chemical analyses
145						
	148.5					
150	150.0	1.5	SS-15	10-14-21 (35)	**Silty Sand** Light yellowish brown (10YR 6/4), moist, loose to medium dense, 55% fine sand, 45% fines.	PID = 1.6 ppm
155						
	158.5					
160	160.0	1.5	SS-16	10-15-18 (33)		

CH2MHILL

PROJECT NUMBER:	BORING NUMBER:
385133.FL.01	BH-01 SHEET 5 OF 6

SOIL BORING LOG

PROJECT : Area 3 DGI Phase II Investigation LOCATION : Alhambra, CA

ELEVATION : DRILLING CONTRACTOR : National

DRILLING METHOD AND EQUIPMENT : Air Rotary Casing Hammer (ARCH) with 9 5/8" Casing and 2" Hammer

WATER LEVELS : --- START : 8/20/14 13:00 END : 8/21/14 14:30 LOGGER : Nicole Alkov

DEPTH BELOW GROUND SURFACE (ft)	INTERVAL (ft)	RECOVERY (ft)	#TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION
165					**Silty Sand** Brown (7.5YR 4/3), mist, loose to medium dense, 75% fine sand, 25% fines, trace fine gravel to 0.5".	PID = 1.1 ppm
	168.5					
170	170.0	1.5	SS-17	8-12-18 (30)	**Silty Sand** Yellowish brown (10YR 5/4), moist, loose to medium dense, 55% fine sand, 45% fines.	PID = 0.0 ppm
175						
	178.5					
180	180.0	1.5	SS-18	11-14-17 (31)	**Silt** Brown (10YR 5/3), moist, stiff to very stiff, 10% fine sand, trace medium sand, 90% fines.	PID = 0.0 ppm
185						
	188.5					
190	190.0	1.5	SS-19	12-19-22 (41)	**Silt** Brown (10YR 5/3), slightly moist, stiff to very stiff, 5% fine sand, 95% fines.	PID = 1.1 ppm
195						
	198.5					
200	200.0	1.5	SS-20	11-14-19 (33)		

PROJECT NUMBER:	BORING NUMBER:
385133.FL.01	BH-01 SHEET 6 OF 6

SOIL BORING LOG

PROJECT : Area 3 DGI Phase II Investigation LOCATION : Alhambra, CA

ELEVATION : DRILLING CONTRACTOR : National

DRILLING METHOD AND EQUIPMENT : Air Rotary Casing Hammer (ARCH) with 9 5/8" Casing and 2" Hammer

WATER LEVELS : --- START : 8/20/14 13:00 END : 8/21/14 14:30 LOGGER : Nicole Alkov

DEPTH BELOW GROUND SURFACE (ft)	INTERVAL (ft)	RECOVERY (ft)	#TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION
205					**Silt** Brown (7.5YR 5/3), slightly moist, stiff to very stiff, 100% fines, trace fine sand.	PID = 1.6 ppm
	208.5					
210	210.0	1.5	SS-21		**Silt** Brown (7.5YR 5/3), slightly moist, 100% fines, trace fine sand.	PID = 1.2 ppm
215						
	218.5					
220	220.0	1.5	SS-22		**Silt** Light greenish gray (GLEY1 7/1) wit streaks of brownish yellow (10YR 6/6), slightly moist, 100% fines.	PID = 2.3 ppm
225						
	228.5					
230	230.0	1.5	SS-23		**Silt** Light greenish gray (GLEY1 7/1) with some streaks of brownish yellow (10YR 6/6), slightly moist, 5% fine sand, 95% fines.	PID = 6.5 ppm
					Boring terminated at 230.0 ft bgs.	
235						
240						

PROJECT NUMBER:	BORING NUMBER:
385133.FL.01	BH-02 SHEET 1 OF 6

SOIL BORING LOG

PROJECT : Area 3 DGI Phase II Investigation LOCATION : Alhambra, CA

ELEVATION : DRILLING CONTRACTOR : National

DRILLING METHOD AND EQUIPMENT : Air Rotary Casing Hammer (ARCH)

WATER LEVELS : --- START : 9/3/14 10:15 END : 9/5/14 09:30 LOGGER : Nicole Alkov

DEPTH BELOW GROUND SURFACE (ft)	INTERVAL (ft)	RECOVERY (ft)	#TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION
					0-6" - Asphalt.	
5						
	8.5					
10	10.0	1.5	SS-1	5-5-6 (11)	**Silty Sand** Brown (7.5YR 4/4), moist, medium stiff, 85% fine sand, 15% fines.	PID = 5.2 ppm
15						
	18.5					
20	20.0	1.5	SS-2	6-6-7 (13)	**Well Graded Sand with Gravel** Light brown (7.5YR 6/3), dry, medium stiff, 15% fine gravel, angular to subrounded, 85% sand (65% fine, 5% medium, 15% coarse).	PID = 6.1 ppm
25						
	28.5					
30	30.0	1.5	SS-3	7-8-8 (16)	**Well Graded Sand with Gravel** Pale brown (10YR 6/3), dry, medium stiff, 15% fine to coarse gravel to 1.25" (5% fine, 10% coarse), 85% sand (70% fine, 10% medium, 5% coarse).	PID = 7.1 ppm
35						
	38.5					
40	40.0	1.5	SS-4	8-9-10 (19)		

CH2MHILL

PROJECT NUMBER:	BORING NUMBER:
385133.FL.01	BH-02 SHEET 2 OF 6

SOIL BORING LOG

PROJECT : Area 3 DGI Phase II Investigation LOCATION : Alhambra, CA

ELEVATION : DRILLING CONTRACTOR : National

DRILLING METHOD AND EQUIPMENT : Air Rotary Casing Hammer (ARCH)

WATER LEVELS : --- START : 9/3/14 10:15 END : 9/5/14 09:30 LOGGER : Nicole Alkov

DEPTH BELOW GROUND SURFACE (ft)	INTERVAL (ft)	RECOVERY (ft)	#TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION
45					**Silt with Sand** Dark yellowish brown (10YR 4/4), moist, stiff, 20% fine sand, 80% fines.	PID = 1.7 ppm Soil sample at 40' (9/3/14, 1115): SW3-BHSO-02-40 VOCs and chemical analyses
	48.5					
50	50.0	1.5	SS-5	8-12-14 (26)	**Silt** Very pale brown (10YR 7/4), moist, stiff, 10% fine sand, 90% fines.	PID = 0.5 ppm Sample at 50' (9/3/14, 1130): SW3-BHSO-02-50 Geotech
55						
	58.5					
60	60.0	1.5	SS-6	50 (50)	**Well Graded Sand with Gravel** Very pale brown (10YR 7/3), dry, very dense, 20% gravel (10% fine, 10% coarse to 1"), angular to subangular, 75% sand (20% fine, 20% medium, 35% coarse), 5% fines.	PID = 0.3 ppm
65						
	68.5					
70	70.0	1.5	SS-7	8-12-14 (26)	**Silt** Dark yellowish brown (10YR 4/4), moist, stiff, 5% fine sand, 95% fines (silt).	PID = 3.7 ppm
75						
	78.5					
80	80.0	1.5	SS-8	9-12-14 (26)		

PROJECT NUMBER:	BORING NUMBER:
385133.FL.01	BH-02 SHEET 3 OF 6

SOIL BORING LOG

PROJECT : Area 3 DGI Phase II Investigation LOCATION : Alhambra, CA

ELEVATION : DRILLING CONTRACTOR : National

DRILLING METHOD AND EQUIPMENT : Air Rotary Casing Hammer (ARCH)

WATER LEVELS : --- START : 9/3/14 10:15 END : 9/5/14 09:30 LOGGER : Nicole Alkov

DEPTH BELOW GROUND SURFACE (ft)	INTERVAL (ft)	RECOVERY (ft)	#TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION
85					**Poorly Graded Sand with Silt** Yellowish brown (10YR 5/6), moist, medium dense, 90% fine sand, 10% fines.	PID = 30.5 ppm Soil sample at 80' (9/3/14, 1400): SW3-BHSO-02-80 VOCs and chemical analyses
	88.5					
90	90.0	1.5	SS-9	50 (50)	**Well Graded Sand with Gravel** Pale brown (10YR 6/3), dry, very dense, 15% gravel (5% fine, 10% coarse to 1.5"), angular to subangular, 75% sand (55% fine, 10% medium, 10% coarse).	PID = 13.6 ppm
95						
	98.5					
100	100.0	1.5	SS-10	50 (50)	**Well Graded Gravel** Very pale brown (10YR 8/3), dry, very dense, 90% gravel (70% fine, 20% coarse to 2"), angular to subangular, 5% fine to coarse sand, 5% fines.	PID = 0.9 ppm
105						
	108.5					
110	110.0	1.5	SS-11	50 (50)	**Sandy Silt** Yellowish brown (10YR 5/6), moist, hard, 40% fine sand, 60% fines.	PID = 3.3 ppm
115						
	118.5					
120	120.0	1.5	SS-12	50 (50)		

PROJECT NUMBER:	BORING NUMBER:
385133.FL.01	BH-02 SHEET 4 OF 6

SOIL BORING LOG

PROJECT : Area 3 DGI Phase II Investigation LOCATION : Alhambra, CA

ELEVATION : DRILLING CONTRACTOR : National

DRILLING METHOD AND EQUIPMENT : Air Rotary Casing Hammer (ARCH)

WATER LEVELS : --- START : 9/3/14 10:15 END : 9/5/14 09:30 LOGGER : Nicole Alkov

DEPTH BELOW GROUND SURFACE (ft)	INTERVAL (ft)	RECOVERY (ft)	#TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION
125					**Well Graded Sand with Gravel** Yellowish brown (10YR 5/4), dry, very dense, 15% fine to coarse gravel to 1", angular to subrounded, 85% sand (70% fine, 10% medium, 5% coarse).	PID = 2.4 ppm Soil sample at 120' (9/4/14, 0915): SW3-BHSO-02-120 VOCs and chemical analyses
	128.5					
130	130.0	1.5	SS-13	50 (50)	**Well Graded Sand with Gravel** Light yellowish brown (10YR 6/4), dry, very dense, 25% gravel (10% fine, 15% coarse to 1.5"), 75% sand (50% fine, 10% medium, 15% coarse).	PID = 3.0 ppm
135						
	138.5					
140	140.0	1.5	SS-14	50 (50)	**Well Graded Sand with Gravel** Yellowish brown (10YR 5/4), dry, very dense, 15% gravel to 1", angular to subangular, 85% sand (75 fine, 5% medium, 5% coarse).	PID = 20.8 ppm Soil sample at 140' (9/4/14, 1030): SW3-BHSO-02-140 VOCs and chemical analyses
145						
	148.5					
150	150.0	1.5	SS-15	50 (50)	**Well Graded Sand with Gravel** Light yellowish brown (10YR 6/4), dry, very dense, 15% gravel to 1", angular to subrounded, 85% sand (70 fine, 5% medium, 5% coarse).	PID = 9.1 ppm
155						
	158.5					
160	160.0	1.5	SS-16	11-12-14 (26)		

CH2MHILL

PROJECT NUMBER:	BORING NUMBER:
385133.FL.01	BH-02 SHEET 5 OF 6

SOIL BORING LOG

PROJECT : Area 3 DGI Phase II Investigation LOCATION : Alhambra, CA

ELEVATION : DRILLING CONTRACTOR : National

DRILLING METHOD AND EQUIPMENT : Air Rotary Casing Hammer (ARCH)

WATER LEVELS : --- START : 9/3/14 10:15 END : 9/5/14 09:30 LOGGER : Nicole Alkov

DEPTH BELOW GROUND SURFACE (ft)	INTERVAL (ft)	RECOVERY (ft)	#TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION
165					**Silt** Light yellowish brown (2.5Y 6/4), moist, stiff, 100% fines, trace fine sand.	PID = 4.9 ppm
	168.5					
170	170.0	1.5	SS-17	12-14-16 (30)	**Silt** Light yellowish brown (2.5Y 6/3), moist, stiff, 100% fines, trace fine sand.	PID = 5.6 ppm
175						
	178.5					
180	180.0	1.5	SS-18	50 (50)	**Silt** Light gray (5Y 7/2), moist, hard, 100% fines.	PID = 2.7 ppm
185						
	188.5					
190	190.0	1.5	SS-19	11-14-15 (29)	**Silt** Olive gray (5Y 5/2), moist, stiff, 100% fines.	PID = 1.0 ppm
195						
	198.5					
200	200.0	1.5	SS-20	11-12-14 (26)	**Silt** Olive gray (5Y 5/2), moist, stiff, 100% fines.	

PROJECT NUMBER:	BORING NUMBER:
385133.FL.01	BH-02 SHEET 6 OF 6

SOIL BORING LOG

PROJECT : Area 3 DGI Phase II Investigation LOCATION : Alhambra, CA

ELEVATION : DRILLING CONTRACTOR : National

DRILLING METHOD AND EQUIPMENT : Air Rotary Casing Hammer (ARCH)

WATER LEVELS : --- START : 9/3/14 10:15 END : 9/5/14 09:30 LOGGER : Nicole Alkov

DEPTH BELOW GROUND SURFACE (ft)	INTERVAL (ft)	RECOVERY (ft)	#TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION
205						PID = 0.9 ppm
	208.5					
210	210.0	1.5	SS-21	50 (50)	**Silt** Light olive gray (5Y 6/2), moist, hard, 100% fines.	PID = 0.8 ppm
215						
	218.5					
220	220.0	1.5	SS-22	50 (50)	**Silt** Olive gray (5Y 5/2), moist, hard, 100% fines.	PID = 0.7 ppm
					Boring terminated at 220.0 ft bgs.	
225						
230						
235						
240						

CH2MHILL

PROJECT NUMBER:	BORING NUMBER:
385133.FL.01	BH-03 SHEET 1 OF 6

SOIL BORING LOG

PROJECT : Area 3 DGI Phase II Investigation LOCATION : Alhambra, CA

ELEVATION : DRILLING CONTRACTOR : National

DRILLING METHOD AND EQUIPMENT : Air Rotary Casing Hammer (ARCH)

WATER LEVELS : 185.0 ft bgs START : 8/15/14 10:30 END : 8/19/14 08:30 LOGGER : Nicole Alkov

DEPTH BELOW GROUND SURFACE (ft)	INTERVAL (ft)	RECOVERY (ft)	#TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION
0					0-6" - Asphalt.	
5						
	8.5					
10	10.0	1.5	SS-1	4-6-6 (12)	**Well Graded Gravel** White (5Y 8/1), dry, loose, 100% gravel (50% coarse to 1.5", 50% fine), angular to subangular.	PID = 6.4 ppm
					Well Graded Sand with Gravel Yellowish brown (10YR 5/4), dry, loose, 15% fine to coarse gravel to 1", angular to subangular, 80% sand (10% coarse, 5% medium, 65% fine), 5% fines.	
15						
	18.5					
20	20.0	1.5	SS-2	9-11-14 (25)	**Well Graded Gravel** White (5Y 8/1), dry, loose, 100% gravel (50% coarse to 1.75", 50% fine), angular to subangular.	PID = 0.6 ppm
					Well Graded Sand with Gravel Light yellowish brown (10YR 6/4), dry, medium dense, 15% fine to coarse gravel to 1", angular to subangular, 80% sand (5% coarse, 10% medium, 65% fine), 5% fines.	
25						
	28.5					
30	30.0	1.5	SS-3	5-6-7 (13)	**Poorly Graded Sand** Yellowish brown (10YR 5/4), moist, loose, 100% fine sand.	PID = 0.9 ppm
35						
	38.5					
40	40.0	1.5	SS-4	7-7-10 (17)		

CH2MHILL

PROJECT NUMBER:	BORING NUMBER:
385133.FL.01	BH-03 SHEET 2 OF 6

SOIL BORING LOG

PROJECT : Area 3 DGI Phase II Investigation LOCATION : Alhambra, CA

ELEVATION : DRILLING CONTRACTOR : National

DRILLING METHOD AND EQUIPMENT : Air Rotary Casing Hammer (ARCH)

WATER LEVELS : 185.0 ft bgs START : 8/15/14 10:30 END : 8/19/14 08:30 LOGGER : Nicole Alkov

DEPTH BELOW GROUND SURFACE (ft)	INTERVAL (ft)	RECOVERY (ft)	#TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION
45					**Silty Sand** Yellowish brown (10YR 5/4), moist, loose, 80% fine sand, 20% fines.	PID = 1.2 ppm Soil sample at 40 (8/15/14, 1240): SW3-BHSO-03-40 VOCs and chemical analyses
	48.5					
50	50.0	1.5	SS-5	6-9-15 (24)	**Silty Sand** Yellowish brown (10YR 5/4), moist, loose to medium dense, 80% fine sand, 20% fines.	PID = 5.4 ppm Soil sample at 50': Geotech only
55						
	58.5					
60	60.0	1.5	SS-6	9-13-17 (30)	**Poorly Graded Sand** Brown (10YR 5/3), moist, loose to medium dense, 100% fine sand.	PID = 0.6 ppm
65						
	68.5					
70	70.0	1.5	SS-7	8-10-13 (23)	**Poorly Graded Sand with Silt** Brown (7.5YR 5/4), moist, loose to medium dense, 90% fine sand, 10% fines.	PID = 0.7 ppm
75						
	78.5					
80	80.0	1.5	SS-8	12-17-22 (39)		

PROJECT NUMBER:	BORING NUMBER:
385133.FL.01	BH-03 SHEET 3 OF 6

SOIL BORING LOG

PROJECT : Area 3 DGI Phase II Investigation LOCATION : Alhambra, CA

ELEVATION : DRILLING CONTRACTOR : National

DRILLING METHOD AND EQUIPMENT : Air Rotary Casing Hammer (ARCH)

WATER LEVELS : 185.0 ft bgs START : 8/15/14 10:30 END : 8/19/14 08:30 LOGGER : Nicole Alkov

DEPTH BELOW GROUND SURFACE (ft)	INTERVAL (ft)	RECOVERY (ft)	#TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION
85					**Silty Sand** Brown (7.5YR 4/3), moist, medium dense, 85% fine sand, 15% fines, trace fine gravel.	PID = 1.2 ppm Soil sample at 80' (8/15/14, 1330): SW3-BHSO-03-80 VOCs and chemical analyses
	88.5					
90	89.0	1.5	SS-9	11-18-23 (41)	**Well Graded Sand with Gravel** Light yellowish brown (10YR 6/4), dry, medium dense, 15% fine to coarse gravel to 1.5", angular to subrounded, 80% sand (50% fine, 20% medium, 10% coarse), 5% fines.	PID = 1.0 ppm
95					**Well Graded Sand with Gravel** Pale yellow (2.4Y 7/3), dry, medium dense, 20% fine to coarse gravel to 1", angular to subangular, 75% sand (45% fine, 10% medium, 20% coarse), 5% fines.	
	98.5					
100	100.0	1.5	SS-10	50 (50)	**Well Graded Sand with Gravel** Light yellowish brown (2.5Y 6/4), dry, very dense, 80% fine to coarse gravel to 1", angular to subangular, 20% sand (5% fine, 10% medium, 5% coarse).	PID = 0.7 ppm
105						
	108.5					
110	110.0	1.5	SS-11	9-9-12 (21)	**Silty Sand** Yellowish brown (10YR 5/4), moist, loose to medium dense, 80% fine/very fine sand, 20% fines (silt).	PID = 0.5 ppm
115						
	118.5					
120	120.0	1.5	SS-12	10-14-17 (31)		

PROJECT NUMBER:	BORING NUMBER:
385133.FL.01	BH-03 SHEET 4 OF 6

SOIL BORING LOG

PROJECT : Area 3 DGI Phase II Investigation LOCATION : Alhambra, CA

ELEVATION : DRILLING CONTRACTOR : National

DRILLING METHOD AND EQUIPMENT : Air Rotary Casing Hammer (ARCH)

WATER LEVELS : 185.0 ft bgs START : 8/15/14 10:30 END : 8/19/14 08:30 LOGGER : Nicole Alkov

DEPTH BELOW GROUND SURFACE (ft)	INTERVAL (ft)	RECOVERY (ft)	#TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION
125					**Well Graded Sand with Gravel** Very pale brown (10YR 7/3), dry, loose to medium dense, 15% fine gravel to 0.5", angular to subangular, 90% sand (60% fine, 10% medium, 10% coarse), 5% fines.	PID = 8.9 ppm Soil sample at 120' (8/15/14, 1440): SW3-BHSO-03-120 VOCs and chemical analyses
	128.5					
130	130.0	1.5	SS-13	50 (50)	**Poorly Graded Sand with Gravel** Yellowish brown (10YR 5/4), moist, very dense, 15% fine to coarse gravel to 2", angular to subangular, 85% sand (80% fine, 5% medium, trace coarse).	PID = 146.0 ppm
135						
	138.5					
140	140.0	1.5	SS-14	50 (50)	**Well Graded Sand with Gravel** Pale yellow (5Y 8/2), dry, very dense, 15% fine to coarse gravel to 1", angular to subangular, 80% sand (65% fine, 5% medium, 10% coarse), 5% fines.	PID = 3.3 ppm Soil sample at 140' (8/18/14, 0915): SW3-BHSO-03-140 VOCs and chemical analyses
145						
	148.5					
150	150.0	1.5	SS-15	50 (50)	**Well Graded Sand with Gravel** Light brownish gray (10YR 6/2), dry, very dense, 25% fine gravel to 0.5", angular to subangular, 70% sand (50% fine, 10% medium, 10% coarse), 5% fines.	PID = 1.5 ppm
155						
	158.5					
160	160.0	1.5	SS-16	50 (50)		

PROJECT NUMBER:	BORING NUMBER:
385133.FL.01	BH-03 SHEET 5 OF 6

SOIL BORING LOG

PROJECT : Area 3 DGI Phase II Investigation LOCATION : Alhambra, CA

ELEVATION : DRILLING CONTRACTOR : National

DRILLING METHOD AND EQUIPMENT : Air Rotary Casing Hammer (ARCH)

WATER LEVELS : 185.0 ft bgs START : 8/15/14 10:30 END : 8/19/14 08:30 LOGGER : Nicole Alkov

DEPTH BELOW GROUND SURFACE (ft)	INTERVAL (ft)	RECOVERY (ft)	#TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION
165					**Well Graded Sand with Gravel** Light yellowish brown (10YR 6/4), dry, very dense, 15% fine to coarse gravel to 1.5", angular to subangular, 80% sand (65% fine, 10% medium, 5% coarse), 5% fines.	PID = 33.1 ppm
	168.5					
170	170.0	1.5	SS-17	50 (50)	**Silty Sand** Brown (7.5YR 4/3), moist, very dense, 80% sand (70% fine, 5% medium, 5% coarse), 20% fines, trace fine gravel to 0.5", subangular to subrounded.	PID = 1.1 ppm
175						
	178.5					
180	180.0	1.5	SS-18	50 (50)	**Poorly Graded Sand** Dark yellowish brown (10YR 4/4), damp, very dense, 95% fine sand, 5% fines.	PID = 2.8 ppm
	183.5					
185	185.0	1.5	SS-19		**Poorly Graded Sand with Silt** Brown (7.5YR 4/3), wet, very dense, 90% sand (90% fine, 5% medium, trace coarse), trace fine to coarse gravel to 1", subangular to subrounded, 10% fines.	
	188.5					
190	190.0	0.0	SS-20		**No Recovery** .	PID = N/R Water sample at 190' (8/18/14, 1330): SW3-BHGW-03-190 VOCs and chemical analyses
	193.5					
195	195.0	1.5	SS-21		**Well Graded Sand with Gravel** Yellowish brown (10YR 5/4), moist, 5% fine to coarse gravel to 1", subangular to subrounded, 85% sand (65% fine, 15% medium, 5% coarse), 10% fines.	Soil and water samples at 195': SW3-BHGW-03-195 PTOD soil, PTOD water, geotech
	198.5					
200	200.0	1.5	SS-22			

CH2MHILL

PROJECT NUMBER:	BORING NUMBER:
385133.FL.01	BH-03 SHEET 6 OF 6

SOIL BORING LOG

PROJECT : Area 3 DGI Phase II Investigation LOCATION : Alhambra, CA

ELEVATION : DRILLING CONTRACTOR : National

DRILLING METHOD AND EQUIPMENT : Air Rotary Casing Hammer (ARCH)

WATER LEVELS : 185.0 ft bgs START : 8/15/14 10:30 END : 8/19/14 08:30 LOGGER : Nicole Alkov

DEPTH BELOW GROUND SURFACE (ft)	INTERVAL (ft)	RECOVERY (ft)	#TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION
205					**Silty Sand** Brown (10YR 4/3), moist, loose to medium dense, 65% sand, (60% fine, trace medium, 5% coarse), 35% fines.	PID = 0.4 ppm
	208.5					
210	210.0	1.5	SS-23	50 (50)	**Poorly Graded Sand** Brown (10YR 4/4), damp, very dense, 95% fine sand, 5% fines.	PID = 0.2 ppm Water sample at 210': SW3-BHGW-03-210 VOCs and chemical analyses
215						
	218.5					
220	220.0	1.5	SS-24		**Well Graded Sand** Yellowish brown (10YR 5/4), wet, 95% sand (50% fine, 40% medium, 5% coarse), 5% fines. Boring terminated at 220.0 ft bgs.	PID = 0.7 ppm
225						
230						
235						
240						

CH2MHILL

PROJECT NUMBER:	BORING NUMBER:
385133.FL.01	BH-04 SHEET 1 OF 6

SOIL BORING LOG

PROJECT : Area 3 DGI Phase II Investigation LOCATION : Alhambra, CA

ELEVATION : DRILLING CONTRACTOR : National

DRILLING METHOD AND EQUIPMENT : Air Rotary Casing Hammer (ARCH)

WATER LEVELS : 190.0 ft bgs START : 8/27/14 10:30 END : 8/29/14 10:00 LOGGER : Nicole Alkov

DEPTH BELOW GROUND SURFACE (ft)	INTERVAL (ft)	RECOVERY (ft)	#TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION
					0-6" - Asphalt.	
5						
	8.5					
10	10.0	1.5	SS-1	6-6-8 (14)	**Well Graded Sand with Gravel** Light gray (10YR 7/2), dry, loose, 15% gravel (10% fine, 5% coarse to 2"), angular to subrounded, 80% sand (30% fine, 30% medium, 20% coarse), 5% fines.	PID = 0.0 ppm
15						
	18.5					
20	20.0	1.5	SS-2	6-7-9 (16)	**Well Graded Gravel with Sand** Light gray (10YR 7/2), dry, loose, 60% gravel (40% fine, 20% coarse to 1.5"), angular to subangular, 40% sand (20% fine, 10% medium, 10% coarse).	PID = 0.0 ppm
25						
	28.5					
30	30.0	1.5	SS-3	8-8-12 (20)	**Poorly Graded Sand** Very pale brown (10YR 7/3), dry, loose to medium dense, 100% fine sand.	PID = 0.0 ppm
35						
	38.5					
40	40.0	1.5	SS-4	9-12-18 (30)		

PROJECT NUMBER:	BORING NUMBER:
385133.FL.01	BH-04 SHEET 2 OF 6

SOIL BORING LOG

PROJECT : Area 3 DGI Phase II Investigation LOCATION : Alhambra, CA

ELEVATION : DRILLING CONTRACTOR : National

DRILLING METHOD AND EQUIPMENT : Air Rotary Casing Hammer (ARCH)

WATER LEVELS : 190.0 ft bgs START : 8/27/14 10:30 END : 8/29/14 10:00 LOGGER : Nicole Alkov

DEPTH BELOW GROUND SURFACE (ft)	INTERVAL (ft)	RECOVERY (ft)	#TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION
45					**Silty Sand** Light yellowish brown (10YR 6/4), dry, loose to medium dense, 70% fine sand, 30% fines.	PID = 0.0 ppm Soil sample at 40' (8/27/14, 1200): SW3-BHSO-04-40 VOCs and chemical analyses
	48.5					
50	50.0	1.5	SS-5	9-12-14 (26)	**Silty Sand** Yellowish brown (10YR 5/4), moist, loose to medium dense, 80% fine sand, 20% fines.	PID = 0.0 ppm Soil sample at 50' (8/27/14, 1130): SW3-BHSO-04-50 Geotech
55						
	58.5					
60	60.0	1.5	SS-6	8-12-16 (28)	**Poorly Graded Sand** Very pale brown (10YR 7/3), dry, loose to medium dense, 100% fine sand.	PID = 0.0 ppm
65						
	68.5					
70	70.0	1.5	SS-7	8-8-10 (18)	**Sandy Lean Clay** Dark yellowish brown (10YR 4/4), moist, medium to stiff, 45% sand (30% fine, 10% medium, 5% coarse), 55% fines (clay).	PID = 0.4 ppm
75						
	78.5					
80	80.0	1.5	SS-8	9-12-14 (26)		

PROJECT NUMBER:	BORING NUMBER:
385133.FL.01	BH-04 SHEET 3 OF 6

SOIL BORING LOG

PROJECT : Area 3 DGI Phase II Investigation LOCATION : Alhambra, CA

ELEVATION : DRILLING CONTRACTOR : National

DRILLING METHOD AND EQUIPMENT : Air Rotary Casing Hammer (ARCH)

WATER LEVELS : 190.0 ft bgs START : 8/27/14 10:30 END : 8/29/14 10:00 LOGGER : Nicole Alkov

DEPTH BELOW GROUND SURFACE (ft)	INTERVAL (ft)	RECOVERY (ft)	#TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION
85					**Silt with Sand** Yellowish brown (10YR 5/4), moist, stiff, 20% fine sand, 80% fines.	PID = 0.3 ppm Soil sample at 80': SW3-BHSO-04-80 VOCs and chemical analyses
	88.5					
90	90.0	1.5	SS-9	10-14-16 (30)	**Well Graded Sand** Light yellowish brown (10YR 6/4), dry, loose to medium dense, 100% sand (50% fine, 45% medium, 5% coarse), trace fine gravel.	PID = 0.7 ppm
95						
	98.5					
100	100.0	1.5	SS-10	50 (50)	**Well Graded Sand** Very pale brown (10YR 7/4), dry, very dense, 5% fine to coarse gravel to 1", 95% sand (40% fine, 50% medium, 5% coarse).	PID = 0.8 ppm
105						
	108.5					
110	110.0	1.5	SS-11	10-14-18 (32)	**Sandy Silt** Yellowish brown (10YR 5/4), moist, stiff, 35% fine sand, 65% silt.	PID = 0.2 ppm
115						
	118.5					
120	120.0	1.5	SS-12	50 (50)		

CH2MHILL

PROJECT NUMBER:	BORING NUMBER:
385133.FL.01	BH-04 SHEET 4 OF 6

SOIL BORING LOG

PROJECT : Area 3 DGI Phase II Investigation LOCATION : Alhambra, CA

ELEVATION : DRILLING CONTRACTOR : National

DRILLING METHOD AND EQUIPMENT : Air Rotary Casing Hammer (ARCH)

WATER LEVELS : 190.0 ft bgs START : 8/27/14 10:30 END : 8/29/14 10:00 LOGGER : Nicole Alkov

DEPTH BELOW GROUND SURFACE (ft)	INTERVAL (ft)	RECOVERY (ft)	#TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION
125					**Well Graded Sand with Gravel** Light gray (10YR 7/1), dry, very dense, 20% fine gravel, 75% sand (40% fine, 20% medium, 15% coarse), 5% fines.	PID = 0.6 ppm
	128.5					
130	130.0	1.5	SS-13	50 (50)	**Well Graded Sand with Gravel** Very pale brown (10YR 8/2), dry, very dense, 20% gravel (10% fine, 10% coarse to 1"), angular to subangular, 75% sand (50% fine, 15% medium, 10% coarse), 5% fines.	PID = 1.1 ppm
135						
	138.5					
140	140.0	1.5	SS-14	50 (50)	**Well Graded Gravel with Sand** Light gray (10YR 7/1), dry, very dense, 80% gravel (40% fine, 40% coarse to 1.25"), angular to subrounded, 15% sand (5% fine, 5% medium, 5% coarse), 5% fines.	PID = 0.1 ppm Soil sample at 140' (8/28/14, 1015): SW3-BHSO-04-140 VOCs and chemical analyses
145						
	148.5					
150	150.0	1.5	SS-15	50 (50)	**Well Graded Gravel with Sand** White (7.5YR 8/1), dry, very dense, 80% gravel (20% fine, 60% coarse to 1"), angular to subrounded, 20% sand (10% fine, 5% medium, 5% coarse).	PID = 4.2 ppm
155						
	158.5					
160	160.0	1.5	SS-16	10-12-16 (28)		

CH2MHILL

PROJECT NUMBER:	BORING NUMBER:
385133.FL.01	BH-04 SHEET 5 OF 6

SOIL BORING LOG

PROJECT : Area 3 DGI Phase II Investigation LOCATION : Alhambra, CA

ELEVATION : DRILLING CONTRACTOR : National

DRILLING METHOD AND EQUIPMENT : Air Rotary Casing Hammer (ARCH)

WATER LEVELS : 190.0 ft bgs START : 8/27/14 10:30 END : 8/29/14 10:00 LOGGER : Nicole Alkov

DEPTH BELOW GROUND SURFACE (ft)	INTERVAL (ft)	RECOVERY (ft)	#TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION
165					**Well Graded Sand with Gravel** Light yellowish brown (2.5Y 6/4), dry, loose to medium dense, 15% fine gravel, angular to subrounded, 85% sand (75% fine, 5% medium, 5% coarse).	PID = 1.2 ppm
	168.5					
170	170.0	1.5	SS-17	8-9-18 (27)	**Sandy Silt** Brown (10YR 4/3), moist, very stiff, 35% fine sand with trace medium and coarse sand, 65% fines (silt).	PID = 0.2 ppm
175						
	178.5					
180	180.0	1.5	SS-18	10-12-19 (31)	**Silty Sand** Dark yellowish brown (10YR 4/4), moist, loose to medium dense, 70% fine sand, 30% fines.	PID = 0.4 ppm
185						
	188.5					
190	190.0	1.5	SS-19	9-12-16 (28)	**Poorly Graded Sand** Light yellowish brown (10YR 6/4), wet, loose to medium dense, 100% sand (95% medium, 5% coarse).	PID = 0.8 ppm Samples at 190': Soil (1) SW3-BHSO-04-190 PTOD (0930) Water (2) SW3-BHGW-04-190 PTOD (0930) (3) VOCs and chemical analyses (0800)
195						
	198.5					
200	200.0	1.5	SS-20			

PROJECT NUMBER:	BORING NUMBER:
385133.FL.01	BH-04 SHEET 6 OF 6

SOIL BORING LOG

PROJECT : Area 3 DGI Phase II Investigation LOCATION : Alhambra, CA

ELEVATION : DRILLING CONTRACTOR : National

DRILLING METHOD AND EQUIPMENT : Air Rotary Casing Hammer (ARCH)

WATER LEVELS : 190.0 ft bgs START : 8/27/14 10:30 END : 8/29/14 10:00 LOGGER : Nicole Alkov

DEPTH BELOW GROUND SURFACE (ft)	INTERVAL (ft)	RECOVERY (ft)	#TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION
					Sandy Silt Dark yellowish brown (10YR 4/4), moist, 30% fine sand, 70% fines. Boring terminated at 200.0 ft bgs.	PID = 0.0 ppm
205						
210						
215						
220						
225						
230						
235						
240						

PROJECT NUMBER:	BORING NUMBER:
385133.FL.01	BH-05 SHEET 1 OF 6

SOIL BORING LOG

PROJECT : Area 3 DGI Phase II Investigation LOCATION : Alhambra, CA

ELEVATION : DRILLING CONTRACTOR : National

DRILLING METHOD AND EQUIPMENT : Air Rotary Casing Hammer (ARCH)

WATER LEVELS : --- START : 9/18/14 10:45 END : 9/11/14 13:00 LOGGER : Nicole Alkov

DEPTH BELOW GROUND SURFACE (ft)	INTERVAL (ft)	RECOVERY (ft)	#TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION
					0-6" - Asphalt.	
5						
	8.5					
10	10.0	1.5	SS-1	6-6-7 (13)	**Poorly Graded Sand with Gravel** Pale brown (10YR 6/3), dry, loose, 30% gravel (20% fine, 10% coarse to 2"), angular to subangular, 65% sand (20% coarse, 5% medium, 40% fine), 5% fines.	PID = 28.6 ppm
15						
	18.5					
	19.0	0.5	SS-2	50	**Well Graded Gravel** Pale yellow (2.5Y 8/3), dry, very dense, 100% gravel (50% fine, 50% coarse to 1.5"), subangular to subrounded.	
20	20.0	0.0	SS-3	(50)	**No Recovery** .	PID = 0.4 ppm
25						
	28.5					
30	30.0	1.5	SS-4	50 (50)	**Silty Sand** Brown (7.5YR 4/4), moist, very dense, 80% fine sand, 20% fines.	PID = 1.2 ppm
35						
	38.5					
40	40.0	1.5	SS-5	50 (50)		

PROJECT NUMBER:	BORING NUMBER:
385133.FL.01	BH-05 SHEET 2 OF 6

SOIL BORING LOG

PROJECT : Area 3 DGI Phase II Investigation LOCATION : Alhambra, CA

ELEVATION : DRILLING CONTRACTOR : National

DRILLING METHOD AND EQUIPMENT : Air Rotary Casing Hammer (ARCH)

WATER LEVELS : --- START : 9/18/14 10:45 END : 9/11/14 13:00 LOGGER : Nicole Alkov

DEPTH BELOW GROUND SURFACE (ft)	INTERVAL (ft)	RECOVERY (ft)	#TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION
45					**Silty Sand** Yellowish brown (10YR 5/4), moist, very dense, 5% fine gravel, 80% sand (75% fine to medium sand, 5% coarse), 15% fines.	PID = 1500.0 ppm Soil sample at 40' (9/8/14, 1200): SW3-BHSO-05-40 VOCs and chemical analyses
	48.5					
50	50.0	1.5	SS-6	8-9-10 (19)	**Silty Sand** Yellowish brown (10YR 5/4), moist, loose, 70% fine sand, 30% fines.	PID = 6.8 ppm Soil sample at 50' (9/8/14, 1300): SW3-BHSO-05-50 Geotech
55						
	58.5					
60	60.0	1.5	SS-7	8-9-14 (23)	**Silty Sand with Gravel** Very pale brown (10YR 8/3), dry, loose to medium dense, 15% gravel (10% fine, 5% coarse to 1.5"), 70% sand (50% fine, 10% medium, 10% coarse), 15% fines.	PID = 3.5 ppm
65						
	68.5					
70	70.0	1.5	SS-8	6-12-13 (25)	**Silty Sand with Gravel** Pale yellow (2.5Y 8/4), dry, loose to medium dense, 20% gravel (10% fine, 10% coarse to 2"), 60% sand (50% fine, 5% medium, 5% coarse), 20% fines.	PID = 4.7 ppm
75						
	78.5					
80	80.0	1.5	SS-9	50 (50)		

PROJECT NUMBER:	BORING NUMBER:
385133.FL.01	BH-05 SHEET 3 OF 6

SOIL BORING LOG

PROJECT : Area 3 DGI Phase II Investigation LOCATION : Alhambra, CA

ELEVATION : DRILLING CONTRACTOR : National

DRILLING METHOD AND EQUIPMENT : Air Rotary Casing Hammer (ARCH)

WATER LEVELS : --- START : 9/18/14 10:45 END : 9/11/14 13:00 LOGGER : Nicole Alkov

DEPTH BELOW GROUND SURFACE (ft)	INTERVAL (ft)	RECOVERY (ft)	#TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION
85					**Sandy Clay** Dark yellowish brown (10YR 4/4), moist, hard, 40% fine sand, 60% clay/fines.	PID = 11.7 ppm Soil sample at 80' (9/8/14, 1415): SW3-BHSO-05-80 VOCs and chemical analyses
	88.5					
90	90.0	1.5	SS-10	8-9-10 (19)	**Sandy Silt** Pale yellow (2.5Y 7/4), moist, medium stiff to stiff, 45% fine sand, 55% fines/silt.	PID = Not available (N/A)
95						
	98.5					
100	100.0	1.5	SS-11	9-12-14 (26)	**Well Graded Sand** Pale yellow (2.5Y 7/3), dry, loose to medium dense, 5% fine gravel to 0.25", 80% sand (65% fine, 10% medium, 5% coarse), 5% fines.	PID = N/A
105						
	108.5					
110	110.0	1.5	SS-12	9-12-13 (25)	**Well Graded Sand** Very pale brown (10YR 8/3), dry, loose to medium dense, 5% fine gravel to 0.25", 80% sand (20% fine, 50% medium, 10% coarse), 5% fines.	PID = N/A
115						
	118.5					
120	120.0	1.5	SS-13	9-12-18 (30)		

CH2MHILL

PROJECT NUMBER:	BORING NUMBER:
385133.FL.01	BH-05 SHEET 4 OF 6

SOIL BORING LOG

PROJECT : Area 3 DGI Phase II Investigation LOCATION : Alhambra, CA

ELEVATION : DRILLING CONTRACTOR : National

DRILLING METHOD AND EQUIPMENT : Air Rotary Casing Hammer (ARCH)

WATER LEVELS : --- START : 9/18/14 10:45 END : 9/11/14 13:00 LOGGER : Nicole Alkov

DEPTH BELOW GROUND SURFACE (ft)	INTERVAL (ft)	RECOVERY (ft)	#TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION
125					**Poorly Graded Sand** Light yellowish brown (10YR 6/4), dry, loose to medium dense, 100% fine sand, trace fine gravel.	PID = N/A Soil sample at 120' (9/9/14, 1000): SW3-BHSO-05-120 VOCs and chemical analyses
	128.5					
130	130.0	1.5	SS-14	8-12-14 (26)	**Sandy Silt** Very pale brown (10YR 7/3), moist, medium stiff to stiff, 35% sand (30% fine, 5% medium), 65% fines.	PID = N/A
135						
	138.5					
140	140.0	1.5	SS-15	50 (50)	**Well Graded Sand with Gravel** Pale yellow (2.5Y 8/2), dry, very dense, 20% gravel (10% fine, 10% coarse to 1"), angular to subangular, 75% sand (45% fine, 20% medium, 10% coarse), 5% fines.	PID = N/A Soil sample at 140' (9/9/14, 1115): SW3-BHSO-05-140 VOCs and chemical analyses
145						
	148.5					
150	150.0	1.5	SS-16	50 (50)	**Silty Sand with Gravel** Very pale brown (10YR 8/2), dry, very dense, 20% gravel (10% fine, 10% coarse to 2"), subangular to subrounded, 60% sand (20% fine, 30% medium, 10% coarse), 20% fines.	PID = N/A
155						
	158.5					
160	160.0	1.5	SS-17	10-11-12 (23)		

PROJECT NUMBER:	BORING NUMBER:
385133.FL.01	BH-05 SHEET 5 OF 6

SOIL BORING LOG

PROJECT : Area 3 DGI Phase II Investigation LOCATION : Alhambra, CA

ELEVATION : DRILLING CONTRACTOR : National

DRILLING METHOD AND EQUIPMENT : Air Rotary Casing Hammer (ARCH)

WATER LEVELS : --- START : 9/18/14 10:45 END : 9/11/14 13:00 LOGGER : Nicole Alkov

DEPTH BELOW GROUND SURFACE (ft)	INTERVAL (ft)	RECOVERY (ft)	#TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION
165					**Well Graded Sand with Silt and Gravel** Very pale brown (10YR 7/3), dry, loose to medium dense, 15% fine gravel, 75% sand (50% fine, 15% medium, 10% coarse), 10% fines/silt.	PID = N/A
	168.5					
170	170.0	1.5	SS-18	50 (50)	**Well Graded Gravel with Sand** Pale yellow (2.5Y 8/2), dry, very dense, 80% gravel (65% fine, 15% coarse to 2"), subangular to subrounded, 15% sand (5% fine, 5% medium, 5% coarse), 5% fines.	PID = N/A
175						
	178.5					
180	180.0	1.5	SS-19		**Poorly Graded Sand** Very pale brown (10YR 7/3), dry, 100% very fine sand.	PID = N/A
185						
	188.5					
190	190.0	1.5	SS-20		**Silty Sand** Very pale brown (10YR 7/3), moist, 70% sand (70% fine, 5% medium), 25% fines/silt.	PID = N/A Water sample at 190' (9/11/14, 0800): SW3-BHGW-05-190 VOCs and total metals
195						
	198.5					
200	200.0	1.5	SS-21			

CH2MHILL

PROJECT NUMBER:	BORING NUMBER:
385133.FL.01	BH-05 SHEET 6 OF 6

SOIL BORING LOG

PROJECT : Area 3 DGI Phase II Investigation LOCATION : Alhambra, CA

ELEVATION : DRILLING CONTRACTOR : National

DRILLING METHOD AND EQUIPMENT : Air Rotary Casing Hammer (ARCH)

WATER LEVELS : --- START : 9/18/14 10:45 END : 9/11/14 13:00 LOGGER : Nicole Alkov

DEPTH BELOW GROUND SURFACE (ft)	INTERVAL (ft)	RECOVERY (ft)	#TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION
205					**Sandy Silt** Very pale brown (10YR 7/3), moist, 30% very fine to fine sand, 70% fines.	PID = N/A
	208.5					
210	210.0	1.5	SS-22		**Well Graded Sand** Yellowish brown (10YR 5/4), moist, 100% sand (50% fine, 45% medium, 5% coarse).	PID = N/A/full suite <<ListBuildSepTrim(Samples at 210': Soil (1) SW3-BHSO-05-210 PTOD, Geotech (9/11/14, 1000)
215						
	218.5					
220	220.0	1.5	SS-23		**Silty Sand** Pale brown (10YR 6/3), moist, 70% fine sand, 30% fines. Boring terminated at 220.0 ft bgs.	PID = N/A Water sample at 220' (9/11/14, 1300): SW3-BHGW-05-210 VOCs and chemical analyses, full suite
225						
230						
235						
240						

PROJECT NUMBER:	BORING NUMBER:
385133.FL.01	BH-06 SHEET 1 OF 3

SOIL BORING LOG

PROJECT : Area 3 DGI Phase II Investigation LOCATION : Alhambra, CA

ELEVATION : DRILLING CONTRACTOR : National

DRILLING METHOD AND EQUIPMENT : Air Rotary Casing Hammer (ARCH) with 9 5/8" Casing and 2" Hammer

WATER LEVELS : 77.0 ft bgs START : 8/12/14 10:00 END : 8/14/14 12:30 LOGGER : Nicole Alkov

DEPTH BELOW GROUND SURFACE (ft)	INTERVAL (ft)	RECOVERY (ft)	#TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION
0					0.0-1.0' - Asphalt.	
5						
	8.5					
10	10.0	1.5	SS-1	6-14-17 (31)	**Poorly Graded Sand with Gravel** Pale brown (10YR 6/4), dry, loose to medium dense, 15% fine gravel to 0.5", 80% sand (15% medium, 65% fine), 5% fines, fine-grained except for gravel.	PID = 0.4 ppm
15						
	18.5					
20	20.0	1.5	SS-2	9-11-17 (28)	**Silt** Brown (10YR 4/3), moist, medium to stiff, 100% fines, non-plastic.	PID = 0.3 ppm
25						
	28.5					
30	30.0	1.5	SS-3	15-14-26 (40)	**Silt** Brown (10YR 4/3), moist, stiff to very stiff, 100% fines, non-plastic.	PID = 0.2 ppm Soil sample at 30': SW5-BHSO-06-30 VOCs and chemical analyses
35						
	38.5					
40	40.0	1.5	SS-4	11-14-22 (36)		

PROJECT NUMBER:	BORING NUMBER:
385133.FL.01	BH-06 SHEET 2 OF 3

SOIL BORING LOG

PROJECT : Area 3 DGI Phase II Investigation LOCATION : Alhambra, CA

ELEVATION : DRILLING CONTRACTOR : National

DRILLING METHOD AND EQUIPMENT : Air Rotary Casing Hammer (ARCH) with 9 5/8" Casing and 2" Hammer

WATER LEVELS : 77.0 ft bgs START : 8/12/14 10:00 END : 8/14/14 12:30 LOGGER : Nicole Alkov

DEPTH BELOW GROUND SURFACE (ft)	INTERVAL (ft)	RECOVERY (ft)	#TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION
45					**Poorly Graded Sand with Silt and Gravel** Brown (7.5YR 5/3), moist, 15% fine to coarse gravel to 1.25", 75% sand (5% coarse, 10% medium, 60% fine), 10% fines, mostly fine-grained.	PID = 0.0 ppm
	48.5					
50	50.0	1.5	SS-5	50 (50)	**Well Graded Sand with Gravel** Brown (7.5YR 5/4), dry, very dense, 15% fine to coarse gravel to 1.25", subangular to subrounded, 80% sand (10% coarse, 20% medium, 50% fine), 5% fines.	PID = 0.0 ppm Geotech soil sample at 50'
55						
	58.5					
60	60.0	1.5	SS-6	9-10-14 (24)	**Well Graded Sand with Gravel** Pale brown (10YR 6/3), dry, loose to medium dense, 15% fine to coarse gravel to 1", subangular to subrounded, 80% sand (10% coarse, 15% medium, 55% fine), 5% fines.	PID = 0.0 ppm Soil sample at 60': SW5-BHSO-06-60 VOCs and chemical analyses
65						
	68.5					
70	70.0	1.5	SS-7	10-12-16 (28)	**Poorly Graded Sand** Dark yellowish brown (10YR 4/4), wet, loose to medium dense, 100% fine sand.	PID = 11.9 ppm
75						
	78.5					
80		1.5	SS-8	50 (50)		

PROJECT NUMBER:	BORING NUMBER:
385133.FL.01	BH-06 SHEET 3 OF 3

SOIL BORING LOG

PROJECT : Area 3 DGI Phase II Investigation LOCATION : Alhambra, CA

ELEVATION : DRILLING CONTRACTOR : National

DRILLING METHOD AND EQUIPMENT : Air Rotary Casing Hammer (ARCH) with 9 5/8" Casing and 2" Hammer

WATER LEVELS : 77.0 ft bgs START : 8/12/14 10:00 END : 8/14/14 12:30 LOGGER : Nicole Alkov

DEPTH BELOW GROUND SURFACE (ft)	INTERVAL (ft)	RECOVERY (ft)	#TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION
80.0					**Poorly Graded Sand** Brown (10YR 4/3), wet, very dense, 100% sand (5% coarse, 45% medium, 50% fine), trace fine gravel to 0.5".	PID = 0.9 ppm Water sample at 80': SW5-BHGW-06-80 VOCs and chemical analyses
81.5	1.5	1.5	SS-9			PID = 0.4 ppm
85					**Poorly Graded Sand with Silt** Yellowish brown (10YR 5/4), wet, 90% sand (5% coarse, 6% medium, 80% fine), 10% silt, trace fine to coarse gravel to 2", subangular to subrounded.	
88.5						
90	90.0	1.5	SS-10	9-13-16 (29)	**Silt** Yellowish brown (10YR 5/4), moist, stiff, 10% sand (5% medium, 5% fine), 90% fines, low plasticity, low dilatancy.	PID = 1.0 ppm Water sample at 90': (1) SW5-BHGW-06-90 VOCs and chemical analyses (2) Geotech (soil)
91.5	1.5	1.5	SS-11		**Silty Sand** Brown (10YR 4/3), wet, 70% fine and very fine sand, 30% fines (silt).	
95						
98.5						
100	100.0	1.5	SS-12	8-12-17 (29)	**Silt** Brown (10YR 5/3), moist, medium to stiff, 100% fines.	PID = 0.0 ppm Samples at 100': Water SW5-BHGW-06-100 VOCs, chemical analyses, PTOD Soil SW5-BHSO-06-100 for PTOD
105						
108.5						
110	110.0	1.5	SS-13	9-13-15 (28)	**Silty Sand** Yellowish brown (10YR 5/4), wet, loose to medium dense, 75% sand (50% medium, 25% fine), 25% fines (silt) with little (~6%) lean clay nodules. Boring terminated at 110.0 ft bgs.	PID = 548.0 ppm Water sample at 110': SW5-BHGW-06-110 VOCs only
115						
120						

CH2MHILL

PROJECT NUMBER:	BORING NUMBER:
385133.FL.01	BH-07 SHEET 1 OF 3

SOIL BORING LOG

PROJECT : Area 3 DGI Phase II Investigation LOCATION : Alhambra, CA

ELEVATION : DRILLING CONTRACTOR : National

DRILLING METHOD AND EQUIPMENT : Air Rotary Casing Hammer (ARCH)

WATER LEVELS : --- START : 8/25/14 12:00 END : 8/26/14 08:30 LOGGER : Nicole Alkov

DEPTH BELOW GROUND SURFACE (ft)	INTERVAL (ft)	RECOVERY (ft)	#TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION
0					0-6" - Asphalt.	
5						
	8.5					
10	10.0	1.5	SS-1	6-6-8 (14)	**Poorly Graded Sand with Gravel** Brown (9.5YR 5/4), moist, 15% fine gravel to 0.5", subangular to subrounded, 85% sand (75% fine, 5% medium, 5% coarse).	PID = 0.9 ppm
15						
	18.5					
20	20.0	1.5	SS-2	6-7-11 (18)	**Silty Sand** Brown (7.5YR 4/4), moist, 70% sand (70% fine, trace medium), 50% fines, fine grained.	PID = 0.5 ppm
25						
	28.5					
30	30.0	1.5	SS-3	8-10-13 (23)	**Sandy Silt** Light brown (7.5YR 6/4), moist, 35% fine sand, 65% fines, fine grained.	PID = 0.5 ppm Soil sample at 30' (8/25/14, 1445): SW5-BHSO-07-30 VOCs and chemical analyses
35						
	38.5					
40	40.0	1.5	SS-4	8-11-12 (23)		

CH2MHILL

PROJECT NUMBER:	BORING NUMBER:
385133.FL.01	BH-07 SHEET 2 OF 3

SOIL BORING LOG

PROJECT : Area 3 DGI Phase II Investigation LOCATION : Alhambra, CA

ELEVATION : DRILLING CONTRACTOR : National

DRILLING METHOD AND EQUIPMENT : Air Rotary Casing Hammer (ARCH)

WATER LEVELS : --- START : 8/25/14 12:00 END : 8/26/14 08:30 LOGGER : Nicole Alkov

DEPTH BELOW GROUND SURFACE (ft)	INTERVAL (ft)	RECOVERY (ft)	#TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION
45					**Well Graded Sand with Gravel** Brown (7.5YR 5/3), moist, 15% fine gravel to 0.5", subangular to subrounded, 85% sand (65% fine, 10% medium, 10% coarse).	PID = 0.6 ppm
	48.5					
50	50.0	1.5	SS-5	9-11-14 (25)	**Well Graded Sand with Gravel** Pale brown (10YR 6/3), moist, 40% gravel (10% fine, 30% coarse to 2"), subangular to subrounded, 60% sand (40% fine, 10% medium, 10% coarse).	PID = 1.2 ppm Sample at 50': SW5-BHSO-07-50 Geotech
55						
	58.5					
60	60.0	1.5	SS-6	10-14-15 (29)	**Silty Sand** Brown (7.5YR 5/3), moist, 70% fine sand, 30% fines, fine grained.	PID = 0.2 ppm Soil sample at 60' (8/25/14, 1355): SW5-BHSO-07-60 VOCs and chemical analyses
65						
	68.5					
70	70.0	1.5	SS-7	9-12-14 (26)	**Poorly Graded Sand** Yellowish brown (10YR 5/4), moist, 95% fine sand, 5% fines.	PID = 0.2 ppm
75						
	78.5					
80	80.0	1.5	SS-8	8-13-14 (27)		

PROJECT NUMBER:	BORING NUMBER:
385133.FL.01	BH-07 SHEET 3 OF 3

SOIL BORING LOG

PROJECT : Area 3 DGI Phase II Investigation LOCATION : Alhambra, CA

ELEVATION : DRILLING CONTRACTOR : National

DRILLING METHOD AND EQUIPMENT : Air Rotary Casing Hammer (ARCH)

WATER LEVELS : --- START : 8/25/14 12:00 END : 8/26/14 08:30 LOGGER : Nicole Alkov

DEPTH BELOW GROUND SURFACE (ft)	INTERVAL (ft)	RECOVERY (ft)	#TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION
85					**Poorly Graded Sand** Yellowish brown (10YR 5/4), wet, 100% medium sand.	PID = 17.1 ppm Sample at 80' (8/25/14, 1425): Soil SW5-BHSO-07-80 VOCs, chemical analyses, PTOD Water SW5-BHGW-07-80 VOCs, chemical analyses, PTOD
	88.5					
90	90.0	1.5	SS-9	0-8-9 (17)	**Lean Clay** Dark brown (7.5YR 3/4), moist, 5% fine sand, 95% fines. Boring terminated at 90.0 ft bgs.	
95						
100						
105						
110						
115						
120						

Appendix C
Investigation-Derived Waste Analytical Data (CD ROM) and Manifests

NO. 713328

NON-HAZARDOUS WASTE DATA FORM

BESI # 243296

GENERATOR

Generator's Name and Mailing Address
U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION 9
ATTN: LISA HANUSIAK, REMEDIAL PROJECT MANAGER
75 HAWTHORNE ST., SFD-7-3
SAN FRANCISCO, CA 94105

Generator's Site Address (if different than mailing address)
SAN GABRIEL VALLEY SUPERFUND (AREA 3 - FACILITY 32)
3033 W. MISSION RD.
ALHAMBRA, CA 91803

Generator's Phone: 415-972-3152

Container type removed from site:
☐ Drums ☐ Vacuum Truck X ☒ Roll-off Truck ☐ Dump Truck
☐ Other _____
Quantity 04 Yards

Container type transported to receiving facility:
☐ Drums ☐ Vacuum Truck ☐ Roll-off Truck ☐ Dump Truck
☐ Other _____
Quantity _____ Volume _____

WASTE DESCRIPTION NON-HAZARDOUS SOIL

GENERATING PROCESS SITE INVESTIGATION

COMPONENTS OF WASTE	PPM	%
1. SOIL		99-100%
2. TPH		< 1%

COMPONENTS OF WASTE	PPM	%
3. VISQUEEN		< 1%
4. VOC's		Trace

Waste Profile CH875811B

PROPERTIES: pH _____ ☒ SOLID ☐ LIQUID ☐ SLUDGE ☐ SLURRY ☐ OTHER _____

HANDLING INSTRUCTIONS: WEAR ALL APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT.

Bin # R28945PL

Generator Printed/Typed Name: Mike Palm on behalf of the EPA
Signature:
Month 9 Day 26 Year 14

The Generator certifies that the waste as described is 100% non-hazardous

TRANSPORTER

Transporter 1 Company Name: BELSHIRE
Phone#: 949-460-5200

Transporter 1 Printed/Typed Name: Jose Ferreyra
Signature:
Month 09 Day 26 Year 14

Transporter Acknowledgment of Receipt of Materials

Transporter 2 Company Name
Phone#

Transporter 2 Printed/Typed Name
Signature
Month Day Year

Transporter Acknowledgment of Receipt of Materials

RECEIVING FACILITY

Designated Facility Name and Site Address
CLEAN HARBORS (BUTTONWILLOW)
2500 W. LOKERN RD.
BUTTONWILLOW, CA 93206

Phone#: 661-762-6200

Printed/Typed Name
Signature
Month Day Year

Designated Facility Owner or Operator: Certification of receipt of materials covered by this data form.

NO. 713326

NON-HAZARDOUS WASTE DATA FORM

BESI # 243126

GENERATOR

Generator's Name and Mailing Address
U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION 9
ATTN: LISA HANUSIAK, REMEDIAL PROJECT MANAGER
75 HAWTHORNE ST., SFD-7-3
SAN FRANCISCO, CA 94105

Generator's Site Address (if different than mailing address)
SAN GABRIEL VALLEY SUPERFUND (AREA 3 - FACILITY 7)
2125 LEMON ST.
ALHAMBRA, CA 91803

Generator's Phone: 415-972-3152

Container type removed from site:
❑ Drums ❑ Vacuum Truck XX ☒ Roll-off Truck ❑ Dump Truck
❑ Other _____
Quantity 1 @ 74
Bin # 46 ct

Container type transported to receiving facility:
❑ Drums ❑ Vacuum Truck ❑ Roll-off Truck ❑ Dump Truck
❑ Other _____
Quantity 1 Volume 74

WASTE DESCRIPTION NON-HAZARDOUS SOIL
GENERATING PROCESS SITE INVESTIGATION

COMPONENTS OF WASTE	PPM	%	COMPONENTS OF WASTE	PPM	%
1. SOIL		99-100%	3. VISQUEEN		< 1%
2. TPH		< 1%	4. VOC's		Trace

Waste Profile CH875357B
PROPERTIES: pH _____ ☒ SOLID ❑ LIQUID ❑ SLUDGE ❑ SLURRY ❑ OTHER _____

HANDLING INSTRUCTIONS: WEAR ALL APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT.

Generator Printed/Typed Name: Y Mike Palm on behalf of the EPA
Signature:
Month 9 Day 26 Year 14

The Generator certifies that the waste as described is 100% non-hazardous

TRANSPORTER

Transporter 1 Company Name: BELSHIRE
Phone#: 949-460-5200

Transporter 1 Printed/Typed Name: FRANK Sikuzak
Signature:
Month 9 Day 26 Year 14

Transporter Acknowledgment of Receipt of Materials

Transporter 2 Company Name
Phone#

Transporter 2 Printed/Typed Name
Signature
Month Day Year

Transporter Acknowledgment of Receipt of Materials

RECEIVING FACILITY

Designated Facility Name and Site Address
CLEAN HARBORS (BUTTONWILLOW)
2500 W. LOKERN RD.
BUTTONWILLOW, CA 93206

Phone#: 661-762-6200

Printed/Typed Name
Signature
Month Day Year

Designated Facility Owner or Operator: Certification of receipt of materials covered by this data form.

NO. 713332

NON-HAZARDOUS WASTE DATA FORM

BESI # 243359

GENERATOR

Generator's Name and Mailing Address
U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION 9
ATTN: LISA HANUSIAK, REMEDIAL PROJECT MANAGER
75 HAWTHORNE ST., SFD-7-3
SAN FRANCISCO, CA 94105

Generator's Site Address (if different than mailing address)
SAN GABRIEL VALLEY SUPERFUND (AREA 3 - FACILITY 3, 4 & 6)
820 S. DATE AVE.
ALHAMBRA, CA 91803

Generator's Phone: 415-972-3152

Container type removed from site:

☐ Drums ☐ Vacuum Truck ☒ Roll-off Truck ☐ Dump Truck

☐ Other _____

Quantity 1 @ 7 y
Bin# R25971PL

Container type transported to receiving facility:

☐ Drums ☐ Vacuum Truck ☐ Roll-off Truck ☐ Dump Truck

☐ Other _____

Quantity 1 Volume 7 y

WASTE DESCRIPTION NON-HAZARDOUS SOIL

GENERATING PROCESS SITE INVESTIGATION

COMPONENTS OF WASTE	PPM	%
1. SOIL		99-100%
2. TPH		< 1%

COMPONENTS OF WASTE	PPM	%
3. VISQUEEN		< 1%
4. VOC's		Trace

Waste Profile _____ PROPERTIES: pH ____ ☒ SOLID ☐ LIQUID ☐ SLUDGE ☐ SLURRY ☐ OTHER _____

HANDLING INSTRUCTIONS: WEAR ALL APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT.

Generator Printed/Typed Name: X Mike Paley on behalf of the EPA X Signature: [signature] Month Day Year

The Generator certifies that the waste as described is 100% non-hazardous

TRANSPORTER

Transporter 1 Company Name: BELSHIRE Phone#: 949-460-5200

Transporter 1 Printed/Typed Name: Frank Salazar Signature: [signature] Month Day Year: 9 26 14

Transporter Acknowledgment of Receipt of Materials

Transporter 2 Company Name Phone#

Transporter 2 Printed/Typed Name Signature Month Day Year

Transporter Acknowledgment of Receipt of Materials

RECEIVING FACILITY

Designated Facility Name and Site Address
CLEAN HARBORS (BUTTONWILLOW)
2500 W. LOKERN RD.
BUTTONWILLOW, CA 93206

Phone#: 661-762-6200

Printed/Typed Name Signature Month Day Year

Designated Facility Owner or Operator: Certification of receipt of materials covered by this data form.

NO. 713320

NON-HAZARDOUS WASTE DATA FORM

BESI # 243911

GENERATOR

Generator's Name and Mailing Address
U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION 9
ATTN: LISA HANUSIAK, REMEDIAL PROJECT MANAGER
75 HAWTHORNE ST., SFD-7-3
SAN FRANCISCO, CA 94105

Generator's Site Address (if different than mailing address)
SAN GABRIEL VALLEY SUPERFUND (AREA 3 - FACILITY 32)
3033 W. MISSION RD.
ALHAMBRA, CA 91803

Generator's Phone: 415-972-3152

Container type removed from site:
☒ Drums ☐ Vacuum Truck ☐ Roll-off Truck ☐ Dump Truck
☐ Other _____
Quantity 02

Container type transported to receiving facility:
☐ Drums ☒ Vacuum Truck ☐ Roll-off Truck ☐ Dump Truck
☐ Other _____
Quantity 02 Volume _____

WASTE DESCRIPTION NON-HAZARDOUS WATER

GENERATING PROCESS WELL PURGING / DECON WATER

COMPONENTS OF WASTE	PPM	%
1. WATER		99-100%
2. TPH		<1%
3.		
4.		

Waste Profile 377010

PROPERTIES: pH 7-10 ☐ SOLID ☒ LIQUID ☐ SLUDGE ☐ SLURRY ☐ OTHER _____

HANDLING INSTRUCTIONS: WEAR ALL APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT.

Generator Printed/Typed Name: Mike Palmer on behalf of the EPA
Signature:
Month 10 Day 3 Year 14

The Generator certifies that the waste as described is 100% non-hazardous

TRANSPORTER

Transporter 1 Company Name: BELSHIRE
Phone#: 949-460-5200

Transporter 1 Printed/Typed Name: Jose Ferreyra
Signature:
Month 10 Day 03 Year 14

Transporter Acknowledgment of Receipt of Materials

Transporter 2 Company Name: NIETO & SONS TRUCKING, INC.
Phone#: 714-990-6855

Transporter 2 Printed/Typed Name:
Signature:
Month Day Year

Transporter Acknowledgment of Receipt of Materials

RECEIVING FACILITY

Designated Facility Name and Site Address
DEMENNO KERDOON
2000 N. ALAMEDA ST.
COMPTON, CA 90222

Phone#: 310-537-7100

Printed/Typed Name:
Signature:
Month Day Year

Designated Facility Owner or Operator: Certification of receipt of materials covered by this data form.

NO. 713317

NON-HAZARDOUS WASTE DATA FORM

BESI # 243911

GENERATOR

Generator's Name and Mailing Address
U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION 9
ATTN: LISA HANUSIAK, REMEDIAL PROJECT MANAGER
75 HAWTHORNE ST., SFD-7-3
SAN FRANCISCO, CA 94105

Generator's Site Address (if different than mailing address)
SAN GABRIEL VALLEY SUPERFUND (AREA 3 - FACILITY 32)
3033 W. MISSION RD.
ALHAMBRA, CA 91803

Generator's Phone: 415-972-3152

Container type removed from site:
☒ Drums ☐ Vacuum Truck ☐ Roll-off Truck ☐ Dump Truck
☐ Other _____
Quantity 08

Container type transported to receiving facility:
☐ Drums ☐ Vacuum Truck ☐ Roll-off Truck ☐ Dump Truck
☐ Other _____
Quantity 08 Volume _____

WASTE DESCRIPTION NON-HAZARDOUS SOIL

GENERATING PROCESS SITE INVESTIGATION

COMPONENTS OF WASTE	PPM	%
1. SOIL		99-100%
2. TPH		< 0.025%

COMPONENTS OF WASTE	PPM	%
3. VISQUEEN		< 1%
4. VOC's		Trace

Waste Profile 070128043-8938 PROPERTIES: pH _____ ☒ SOLID ☐ LIQUID ☐ SLUDGE ☐ SLURRY ☐ OTHER _____

HANDLING INSTRUCTIONS: WEAR ALL APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT.

Generator Printed/Typed Name: Mike Palm on behalf of the EPA
Signature
Month 10 Day 3 Year 14

The Generator certifies that the waste as described is 100% non-hazardous

TRANSPORTER

Transporter 1 Company Name: BELSHIRE
Phone#: 949-460-5200

Transporter 1 Printed/Typed Name: Jose Ferreyra
Signature
Month 10 Day 03 Year 14

Transporter Acknowledgment of Receipt of Materials

Transporter 2 Company Name
Phone#

Transporter 2 Printed/Typed Name
Signature
Month Day Year

Transporter Acknowledgment of Receipt of Materials

RECEIVING FACILITY

Designated Facility Name and Site Address
U.S. ECOLOGY, NEVADA OPERATIONS
HIGHWAY 95, 11 MILES S. OF BEATTY
BEATTY, NV 89003

Phone#: 775-553-2203

Printed/Typed Name
Signature
Month Day Year

Designated Facility Owner or Operator: Certification of receipt of materials covered by this data form.

NO. 697752

NON-HAZARDOUS WASTE DATA FORM

BESI # 243911

GENERATOR

Generator's Name and Mailing Address
U.S. Environmental Protection Agency, Region 9
ATTN: Lisa Hanusiak, Remedial Project Manager
76 Hawthorne St., SFD-7-3
San Francisco, CA. 94105
Generator's Phone: 415-972-3152

Generator's Site Address (if different than mailing address)
San Gabriel Valley Superfund
(Area 3- facility 32)
3033 W. Mission Rd.
Alhambra, CA 91803

Container type removed from site:
☑ Drums ☐ Vacuum Truck ☐ Roll-off Truck ☐ Dump Truck
☐ Other _____
Quantity 08

Container type transported to receiving facility:
☐ Drums ☐ Vacuum Truck ☐ Roll-off Truck ☐ Dump Truck
☐ Other _____
Quantity 08 Volume _____

WASTE DESCRIPTION NON-HAZARDOUS MUD
GENERATING PROCESS Site Investigation

COMPONENTS OF WASTE	PPM	%	COMPONENTS OF WASTE	PPM	%
1. Mud			3. Visqueen		
2.			4. VOC's		Trace

Waste Profile _____ PROPERTIES: pH _____ ☐ SOLID ☐ LIQUID ☐ SLUDGE ☐ SLURRY ☐ OTHER _____

HANDLING INSTRUCTIONS: Wear all Appropriate Personal Protection Equipment.

Generator Printed/Typed Name: Mike Palm on behalf of the EPA
Signature
Month Day Year: 10 [illegible] 14

The Generator certifies that the waste as described is 100% non-hazardous

TRANSPORTER

Transporter 1 Company Name: Bekshire
Phone#: 949-460-5200
Transporter 1 Printed/Typed Name: Jose Ferreyra
Signature
Month Day Year: 10 03 14
Transporter Acknowledgment of Receipt of Materials

Transporter 2 Company Name
Phone#
Transporter 2 Printed/Typed Name
Signature
Month Day Year
Transporter Acknowledgment of Receipt of Materials

RECEIVING FACILITY

Designated Facility Name and Site Address
U.S. ECOLOGY, NEVADA Operations
Highway 95, 11 Miles S. of Beatty
Beatty, NV. 89003
Phone#: 775-553-2203

Printed/Typed Name
Signature
Month Day Year
Designated Facility Owner or Operator: Certification of receipt of materials covered by this data form.

NO. 713411

NON-HAZARDOUS WASTE DATA FORM

BESI # 243509

GENERATOR

Generator's Name and Mailing Address
U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION 9
ATTN: LISA HANUSIAK, REMEDIAL PROJECT MANAGER
75 HAWTHORNE ST., SFD-7-3
SAN FRANCISCO, CA 94105

Generator's Site Address (if different than mailing address)
SAN GABRIEL VALLEY SUPERFUND (AREA 3 - FACILITY 1)
2015 W. CHESTNUT ST.
ALHAMBRA, CA 91803

Generator's Phone: 415-972-3152

(BH-05)

Container type removed from site:

☐ Drums ☐ Vacuum Truck XX ☐ Roll-off Truck ☐ Dump Truck

☐ Other _____

Quantity 1 C 84

BM # R27949 PL

Container type transported to receiving facility:

☐ Drums ☐ Vacuum Truck ☐ Roll-off Truck ☐ Dump Truck

☐ Other _____

Quantity 1 Volume 84

WASTE DESCRIPTION NON-HAZARDOUS SOIL

GENERATING PROCESS SITE INVESTIGATION

COMPONENTS OF WASTE	PPM	%
1. SOIL		99-100%
2. TPH		< 1%

COMPONENTS OF WASTE	PPM	%
3. VISQUEEN		< 1%
4. VOC's		Trace

Waste Profile CH 883896 B

PROPERTIES: pH _____ ☐ SOLID ☐ LIQUID ☐ SLUDGE ☐ SLURRY ☐ OTHER _____

HANDLING INSTRUCTIONS: WEAR ALL APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT.

Generator Printed/Typed Name: Mike Palermo on behalf of the EPA

Signature

Month 10 Day 15 Year 14

The Generator certifies that the waste as described is 100% non-hazardous

TRANSPORTER

Transporter 1 Company Name: BELSHIRE

Phone#: 949-460-5200

Transporter 1 Printed/Typed Name: JAMIE SALAZAR

Signature

Month 10 Day 15 Year 14

Transporter Acknowledgment of Receipt of Materials

Transporter 2 Company Name

Phone#

Transporter 2 Printed/Typed Name

Signature

Month Day Year

Transporter Acknowledgment of Receipt of Materials

RECEIVING FACILITY

Designated Facility Name and Site Address
CLEAN HARBORS (BUTTONWILLOW)
2500 W. LOKERN RD.
BUTTONWILLOW, CA 93206

Phone#: 661-762-6200

Printed/Typed Name

Signature

Month Day Year

Designated Facility Owner or Operator: Certification of receipt of materials covered by this data form.

NO. 713409

NON-HAZARDOUS WASTE DATA FORM

BESI # 243509

GENERATOR

Generator's Name and Mailing Address
U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION 9
ATTN: LISA HANUSIAK, REMEDIAL PROJECT MANAGER
75 HAWTHORNE ST., SFD-7-3
SAN FRANCISCO, CA 94105

Generator's Site Address (if different than mailing address)
SAN GABRIEL VALLEY SUPERFUND (AREA 3 - FACILITY 1)
2015 W. CHESTNUT ST.
ALHAMBRA, CA 91803

Generator's Phone: 415-972-3152

(BH-02)

Container type removed from site:

☐ Drums ☐ Vacuum Truck X ☐ Roll-off Truck ☐ Dump Truck

☐ Other _____

Quantity 10 CY
6 @ 52 CY

Container type transported to receiving facility:

☐ Drums ☐ Vacuum Truck ☐ Roll-off Truck ☐ Dump Truck

☐ Other _____

Quantity 1 Volume 8Y

WASTE DESCRIPTION NON-HAZARDOUS SOIL

GENERATING PROCESS SITE INVESTIGATION

	COMPONENTS OF WASTE	PPM	%
1.	SOIL		99-100%
2.	TPH		< 1%
3.	VISQUEEN		< 1%
4.	VOC's		Trace

Waste Profile CH883896B

PROPERTIES: pH _____ ☐ SOLID ☐ LIQUID ☐ SLUDGE ☐ SLURRY ☐ OTHER _____

HANDLING INSTRUCTIONS: WEAR ALL APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT.

Generator Printed/Typed Name: Mike Rahn on behalf of the EPA
Signature:
Month 10 Day 6 Year 14

The Generator certifies that the waste as described is 100% non-hazardous

TRANSPORTER

Transporter 1 Company Name: BELSHIRE
Phone#: 949-460-5200

Transporter 1 Printed/Typed Name: FRANK SALAZAR
Signature:
Month 10 Day 6 Year 14

Transporter Acknowledgment of Receipt of Materials

Transporter 2 Company Name:
Phone#:

Transporter 2 Printed/Typed Name:
Signature:
Month Day Year

Transporter Acknowledgment of Receipt of Materials

RECEIVING FACILITY

Designated Facility Name and Site Address
CLEAN HARBORS (BUTTONWILLOW)
2500 W. LOKERN RD.
BUTTONWILLOW, CA 93206

Phone#: 661-762-6200

Printed/Typed Name:
Signature:
Month Day Year

Designated Facility Owner or Operator: Certification of receipt of materials covered by this data form.

Appendix D
Soil and Groundwater Analytical Data (CD ROM)

Appendix E
Oxidant Demand and Physical Properties Testing Laboratory Reports (CD ROM)