Appendix H

Soil Management Plan

ARDENT
ENVIRONMENTAL GROUP, INC.

Soil Management Plan

Former La Veta Refuse Disposal Station
2205 East Palmyra Avenue and 290 South Yorba Street
Orange, California

Prepared for:
Kornerstone Park, LLC
2500 East Ball Road, Suite 260
Anaheim, California 92806

Prepared by:
Ardent Environmental Group, Inc.
1827 Capital Street, Suite 103
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October 9, 2020
Project No. 100081005

ARDENT
ENVIRONMENTAL GROUP, INC.

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Mr. Abdul Saquib
Kornerstone Park, LLC
2500 East Ball Road, Suite 260
Anaheim, California 92806

Subject: Soil Management Plan
Former La Veta Refuse Disposal Station
2205 East Palmyra Avenue and 290 South Yorba Street
Orange, California

Dear Mr. Saquib:

Ardent Environmental Group, Inc. (Ardent) has prepared this Soil Management Plan (SMP) for the property located at 2205 East Palmyra Avenue and 290 South Yorba Street, Orange, California (site, Figure 1). The site was part of a larger former landfill known as the La Veta Refuse Disposal Station. On behalf of the property owner, Kornerstone Park, LLC is planning to redevelop the site as a cemetery. Ardent has prepared this SMP to address the known environmental concerns, as well as for precautionary measures to address unknown environmental concerns that might be encountered during redevelopment activities. Following redevelopment, the SMP will be implemented to guide environmental issues that may be encountered during grave-digging activities.

Sincerely,
Ardent Environmental Group, Inc.

Dennis Kawasaki
Senior Project Scientist

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Principal Geologist

PR/CM/DK/aw

Distribution: (1)Addressee (electronic copy)

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1 INTRODUCTION

Ardent Environmental Group, Inc. (Ardent) has prepared this Soil Management Plan (SMP) for the property located at 2205 East Palmyra Avenue and 290 South Yorba Street, Orange, California (site, Figure 1). The site was part of a larger former landfill known as the La Veta Refuse Disposal Station, referred to herein as the "Former La Veta Landfill" (Figure 1). Following the closure of the landfill, the site was redeveloped as a YMCA facility (Figure 2). On behalf of the property owner, Kornerstone Park, LLC (Kornerstone) is planning to redevelop the site as a cemetery (Figure 3).

As a result of the historical site use as a landfill, environmental investigations have been completed under the oversight of the California Department of Toxic Substances Control (DTSC). The findings of these investigations indicated that the chemical concentrations in the landfill cover would not pose a significant health risk to future site occupants based on an industrial/commercial land use scenario; however, elevated concentrations of select chemicals have been detected sporadically in the deeper landfill waste. As part of the redevelopment activities, the thickness of the landfill cover will be increased by approximately two feet to minimize the likelihood of encountering the landfill waste during redevelopment and grave-digging activities. It is anticipated that little to none of the existing landfill cover will be altered to reach the final design grades. This SMP has been prepared as a precautionary measure to provide the criteria and procedures to properly manage the known and unknown environmental issues that may be encountered during redevelopment activities. The SMP also presents the protocol and analytical program for the sampling of import soil. The SMP will be implemented to guide environmental issues that may be encountered during redevelopment, grave-digging, or soil disturbance activities.

2 BACKGROUND

The following subsections present a summary of the historical and proposed land uses, and previous and on-going environmental investigations. Further details of the previous environmental investigations are provided in Geosyntec Consultant's, "Revised Site Assessment Report," dated January 12, 2010, and Ardent's "Landfill Cover Investigation," dated May 22, 2020 (Geosyntec, 2010; Ardent, 2020).

2.1 Historical Land Uses

From at least 1946 to 1956, the Former La Veta Landfill was used as a municipal solid waste disposal site by Orange County. The portion of the Former La Veta Landfill that contains the present-day site is reported to have accepted solid wastes from 1953 to 1956. Solid wastes included green waste, construction debris, and municipal solid waste. Prior to 1953, the waste disposed of was reportedly burned to reduce the volume of waste. The waste disposal concluded in 1956. As part of the closure of the landfill, a layer of soil was placed over the landfill waste as a landfill cover.

By at least 1972, the existing YMCA building was constructed in the west-central portion of the site (Figure 2). The YMCA building was constructed with a passive methane venting system. The YMCA facility consisted of a parking lot in the east-central portion, a bicycle motocross (BMX) track in the northern area, and a soccer field in the southern area (Figure 2). The YMCA facility was closed in 2019.

2.2 Proposed Land Use

As discussed, the site will be redeveloped as a cemetery. As shown in Figure 3, the proposed gravesites will be in the northern and southern areas of the site. The YMCA building will be renovated for use as a reception room, and the parking lot will be repaved in the same general area. A storage shed will be constructed east of the existing building for the storage of materials and equipment. To minimize the potential for encountering the landfill waste, a minimum 7-foot thick landfill cover (5 feet for graves, and a 2-foot buffer above the landfill) will be constructed in the areas of the proposed gravesites. To achieve the approximate 7-foot landfill cover, clean soil will be imported and placed in areas where the landfill cover is less than 7 feet. Little to none of the existing landfill cover will be altered to reach the final design grades. At each gravesite, an approximate 4-foot wide by 8-foot long by 4-foot tall concrete bottomless frame will be placed at the bottom. A body will be placed within the concrete frame, filled with soil, and closed with a concrete lid. The remaining portion of each gravesite will then be backfilled and compacted with soil. Groundwater beneath the site is approximately 200 feet below the ground (bgs) and will not be encountered during redevelopment or cemetery operation activities.

2.3 Previous and On-Going Investigations

Extensive soil investigations have been completed at the Former La Veta Landfill between 1972 and 2020 to evaluate the chemical concentrations in the landfill cover and landfill waste. An investigation was also completed by Ardent in 2020 to further assess the landfill cover thickness for the future gravesites. As a result of the historical landfill, methane and groundwater monitoring are being completed at the site, and will continue following redevelopment. Existing landfill gas monitoring probes and a groundwater monitoring well are planned to be preserved during redevelopment activities. A summary of previous soil investigations, the landfill cover thickness investigation, and methane and groundwater monitoring activities are provided below.

2.3.1 Soil Investigations

Soil analytical results have indicated no detectable to low concentrations of volatile organic compounds (VOCs), semi-VOCs (SVOCs), polychlorinated biphenyls (PCBs), pesticides, and dioxin toxicity equivalency (dioxin-TEQ), below regulatory screening levels for industrial/commercial land use. Concentrations of polynuclear aromatic hydrocarbons (PAHs) were considered representative of background concentrations in Southern California. Metal concentrations were within background concentrations or below industrial/commercial regulatory screening levels for the protection of human health, except for arsenic and lead.

Elevated arsenic, detected at 14 to 23 milligrams per kilogram (mg/kg), and exceeding the DTSC background arsenic concentration at Southern California school sites of 12 mg/kg (referred to herein as the “DTSC arsenic screening level”), was detected in three samples. Two of these exceedances were detected in samples collected from borings SS-14 and SS-16 within the landfill waste at 7 and 9.5 feet bgs, respectively (Figure 4). One additional arsenic exceedance was detected at 0.5 feet bgs from boring SS-16 located within the asphalt-paved bike path along Santiago Creek (Figure 4). Elevated lead, detected at 630 mg/kg, and exceeding the DTSC soil screening level for industrial/commercial land use (DTSC-SLi) of 320 mg/kg was detected in one sample collected from boring SS-9 within the landfill waste at 10 feet bgs (Figure 4). Based on the loca-

tions and/or depths of these samples, there is a low likelihood that elevated arsenic or lead will be encountered during future redevelopment or grave-digging activities.

2.3.2 Landfill Cover Thickness Investigation

In January 2020, Ardent completed an extensive subsurface investigation consisting of the excavation 54 test pits, designated TP1 through TP54, to assess the landfill cover thickness (Figure 4). During the investigation, the soil was monitored with a photoionization detector (PID) in general accordance with South Coast Air Quality Management District (SCAQMD) Rule 1166. Elevated PID readings, exceeding 50 parts per million (ppm) as defined in SCAQMD Rule 1166, were not encountered.

Test pits TP1 through TP22 were excavated in the northern portion of the site in the area of the former BMX track (Figure 4). Due to the presence of possible subsurface utility lines, the test pits were not extended south of TP11. As shown in cross-sections A-A', B-B', and C-C', the depth to the thickness of the landfill cover generally ranged from approximately 5.5 to 9 feet (Figures 5 and 6). Shallow zones of construction debris were also noted from approximately 3 to 9 feet bgs in select areas. The zones of construction debris was not consistent and was mostly soil with an intermittent mix of small to large pieces of concrete, brick, and rebar. The landfill waste consisted of municipal waste and was generally observed as a more consistent layer.

Test pits TP23 through TP51 were excavated in the southern portion of the site in the area of the soccer field. As shown in cross-sections D-D' through G-G', the thickness of the landfill cover was approximately 6 to 9 feet, with a few shallower zones observed in TP29, TP42, TP52, and TP53 (Figures 7 and 8). A limited area of stained and odorous soil was also noted in TP29 and TP30, starting at approximately 3 feet bgs (Figure 8). No PID readings were noted in this soil. Shallow construction debris, from approximately 1 to 6 feet bgs, was also observed at sporadic locations throughout the southern portion of the site. The landfill waste consisted of materials similar to those noted in the northern portion of the site.

In general, the thickness of the landfill cover was found to be approximately 6 to 9 feet throughout the site. As discussed above, soil will be imported to increase the landfill

thickness to approximately 7 feet where needed, and it is anticipated that little to none of the landfill cover will be altered to reach the final design grades.

2.3.3 Continued Methane and Groundwater Monitoring

Ardent is currently performing quarterly methane monitoring of 7 landfill gas monitoring probes located at the site (Figure 9). Four landfill gas monitoring probes, designated MP-1, MP-2, MP-3, OVP-3, and LFG-2, are located along the perimeter of the site. One landfill gas monitoring probe, designated LFG-1, is located on-site and within the landfill waste. One landfill gas monitoring probe, designated OVP-5, is located off-site within a street. The monitoring activities are being completed under the oversight of the Orange County Health Care Agency (OCHCA). An existing groundwater monitoring well, designated SCS-6 is located on-site and monitored by the Orange County Water District (OCWD; Figure 9). The on-site landfill gas monitoring probes and groundwater monitoring well are planned to be protected and preserved during redevelopment.

3 OBJECTIVE

The objective of the SMP is to specify the procedures for monitoring soil during site redevelopment and grave-digging activities, and to identify and properly manage known and unknown environmental concerns that might be encountered during these activities. This SMP provides procedures for the effective and prompt communication of the discovery of unknown environmental concerns to the responsible parties during site redevelopment and grave digging. The SMP also presents the procedures to sample import fill material that will be used at the site.

4 PROGRAM PARTICIPANTS

The following presents the SMP program participants.

4.1 Ardent Representatives

Ardent will act as the environmental consultant and provide field oversight and management services for the SMP. Ardent personnel will include an SMP Field Coordinator and an SMP Program Manager.

The SMP Field Coordinator for this project is:

- To be determined

The SMP Program Manager for this project is:

- Mr. Dennis Kawasaki, Ardent office (951) 736-5334, cell (909) 560-7408

The Alternative SMP Program Manager for this project is:

- Mr. Paul Roberts, Ardent office (951) 736-5334, cell (951) 751-3198

4.2 Owner's Participants

The Owner's Project Director is:

- Mr. Abdul Saquib, Kornerstone office (310) 948-6885

4.3 General Contractor's Participants

The General Contractor will provide contracting services, including grading activities, during redevelopment.

The General Contractor's Project Manager is:

- To be determined

The General Contractor's Project Site Superintendent is:

- To be determined

4.4 Agency Participants

The DTSC will be notified prior to the start of redevelopment activities.

The DTSC Project Manager is:

- Mr. Pete Cooke, DTSC office (818) 717-6555

5 INDIVIDUAL/AGENCY RESPONSIBILITIES

The following presents the individual/agency responsibilities of the SMP program participants. Based on the information provided above, impacted soil within the landfill waste is not anticipated to be encountered during redevelopment or grave-digging activities. This SMP presents the procedures to address possible "unknown environmental concerns" encountered during redevelopment or grave-digging activities (i.e. previously unknown conditions or "surprises"), and to present a sampling protocol for import soils to the site. No exporting of soils is planned.

As discussed herein, unknown environmental concerns are defined as features regulated by a State or local agency (e.g. USTs, septic pit, clarifier, etc.) or unregulated features (e.g., soil with staining, odors, and/or PID readings exceeding 50 ppm). If unknown environmental concerns are discovered, the SMP Program Manager will direct and oversee the characterization and response actions. Cleanup or other response actions will be completed to the satisfaction of the DTSC or to the standards proposed in Section 6.2.3.

5.1 SMP Field Coordinator

The SMP Field Coordinator shall be responsible for the following tasks:

- Periodically monitor field activities during mass-grading to assess potential unknown environmental concerns, if encountered;
- As directed and after having been permitted (if required), supervise characterization and/or mitigation activities related to unknown environmental concerns;
- If and when needed, collect soil samples and arrange for laboratory analyses; and
- Maintain a record of soil sample locations and document field conditions.

5.2 SMP Program Manager

The SMP Program Manager shall be responsible for the following tasks:

- Monitor the work of the SMP Field Coordinator;
- Communicate field activities to the Owner's Project Director and DTSC Project Manager;
- Notify Owner's Project Director and DTSC Project Manager of unknown environmental concerns encountered during redevelopment activities;
- Communicate with regulatory agencies the proposed scope of work to investigate unknown environmental concerns;
- Consultation with the appropriate regulatory agencies to characterize, delineate, and the proper management of unknown environmental concerns; and
- Prepare reports of field activities.

5.3 General Contractor Project Manager or Project Site Superintendent

The General Contractor Project Manager or Project Site Superintendent shall be responsible for the following tasks:

- Monitor grading operations for fugitive dust in accordance with SCAQMD guidelines and take such measures, as necessary, to properly manage dust and soil from leaving the site;

- Report suspected unknown environmental concerns to the SMP Field Coordinator who will notify the SMP Program Manager and/or the Owner's Project Director. The SMP Program Manager or Owner's Project Director will contact the DTSC Project Manager or appropriate regulatory agency, when applicable; and
- If an unknown environmental concern is encountered, the SMP Field Coordinator will direct the General Contractor to stop grading activities in the area of the feature and delineate the area with "Caution" tape, delineators, or fencing, prior to characterization and/or remediation.

5.4 Agency Responsibilities

The DTSC Project Manager will be notified of the redevelopment schedules and will be provided periodic updates. If unknown environmental concerns are discovered during redevelopment activities, the SMP Program Manager will work with the appropriate regulatory agency to oversee and approve permits, work plans, and reports on an expedited schedule so as not to delay grading or redevelopment activities. The SMP Program Manager will notify the appropriate agency(ies) if regulated features are discovered, and may request oversight during site characterization and remediation, if needed. If unregulated features, such as stained or odorous soils with elevated chemical concentrations are discovered to be extensive or threaten the environment or human health, the DTSC will be notified for possible remediation direction and oversight.

5.5 General Responsibilities

Ardent personnel working at the site will have current HAZWOPER health and safety training. As presented in Section 6.1.1, Ardent will implement a Health and Safety Plan (HASP) that covers Ardent's employees and subcontractors. A copy of the HASP is presented in Appendix A. Ardent's scope of work for this project does not include health and safety monitoring for the General or Grading Contractor's personnel and subcontractors as part of their daily work activities or during any soil excavation activities. The General Contractor and subcontractors will provide their own HASP.

6 ENVIRONMENTAL ACTIVITIES FOR SITE REDEVELOPMENT

The following presents the activities that will be performed prior to, during, and following the on-site grading. Following redevelopment, the SMP will be implemented for grave digging activities.

6.1 Pre-Grading Activities

The pre-grading activities will be conducted to minimize downtime and interruptions of redevelopment activities. These pre-grading work activities are intended for the protection of health and safety and for preparing and coordinating site individuals with their respective responsibilities.

6.1.1 Health and Safety Plan (HASP)

Ardent has prepared a HASP that will be used to protect Ardent's workers and subcontractors from chemicals that might be encountered. A copy of the HASP is provided in Appendix A.

6.1.2 Pre-Grading Meeting

A pre-grading meeting will be attended by the SMP Field Coordinator, the SMP Program Manager, the General Contractor Project Manager, the General Contractor Project Site Superintendent, and the Owner's Project Director. The agenda of the meeting will include an overview of the historical land use, environmental investigations, potential chemicals of concern, worker safety requirements, and dust control measures. The SMP Program Manager will present and review the information provided in this SMP, including procedures if unknown environmental concerns are encountered during redevelopment activities, and the individual's responsibilities and emergency phone numbers.

6.1.3 South Coast Air Quality Management District (SCAQMD), Various Sites Permit

SCAQMD Rule 1166 requires monitoring of soil during "…excavating or grading [of] soil containing VOC materials…" Based on previous investigations, elevated VOCs have not been detected within the soil in the landfill cover. As a precautionary measure, Ardent will complete periodic monitoring of grading activities on a part-time basis for stains, odors, or elevated PID readings.

If VOC-Contaminated soils are discovered during the monitoring activities (with PID measurements greater than 50 ppm), continuous monitoring and soil remediation may be necessary. If continuous monitoring becomes necessary, Ardent will use its SCAQMD Various Sites Permit to complete these tasks. If encountered, the vapors will

be suppressed, SCAQMD will be notified, and soil mitigation will be completed if necessary, as per the Various Sites Permit. A copy of the Various Sites Permit is provided in Appendix B.

Based on the results of previous investigations, it is unlikely that elevated levels of VOCs will be observed in excess of 2,000 cubic yards (the maximum volume allowed by the Various Sites Permit). In the unlikely event that elevated PID readings are detected which result in excess of 2,000 cubic yards of VOC-contaminated soils, a Site-Specific Soil Mitigation Plan will need to be obtained from the SCAQMD. If needed, Ardent will prepare the Site-Specific Mitigation Plan, obtain approval from the SCAQMD, and implement the plan.

6.2 During Excavation and Grading Activities

Once excavation and grading have begun, the following activities will be performed.

6.2.1 Dust and Odor Control

The General or Grading Contractor's health and safety field monitor will monitor excavation and grading operations for fugitive odors and dust in accordance with SCAQMD Rules 402 Nuisance and 403 Fugitive Dust, and direct the General or Grading Contractor to take such measures, as necessary, such as the application of water or a change in operations or equipment in order to properly manage odors and/or dust from leaving the site. Copies of SCAQMD's Rule 402 and 403 are provided in Appendix C.

If encountered, excavated impacted soils that are stockpiled at the site will be placed on and covered with Visqueen plastic. Wheel shakers will be installed at all exits from the site to ensure that soil will be removed from the tires of vehicles exiting the site. Any track-outs from the site will be cleaned from the surrounding streets on a daily or as-needed basis.

6.2.2 Notification and Identification of Unknown Environmental Concerns

The SMP Field Coordinator will monitor soils during the grading activities on an as-needed basis. Based on previous environmental investigations at the site, there is a low likelihood that unknown environmental concerns will be encountered in the landfill cover.

As previously stated, “unknown environmental concerns” are defined as regulated features (e.g. USTs, clarifier, etc.) or unregulated features (e.g. stained or odorous soil, or soil containing elevated VOCs as measured by a PID) that are discovered during redevelopment (i.e. “surprises”). If field observations (i.e. odors, staining, and/or elevated PID readings) indicate the possible presences of impacted soils (i.e. greater than 50 ppm as measured with a PID calibrated to hexane), additional characterization/sampling might be necessary.

If stained or odorous soil is encountered and is limited in extent, no regulatory agency will be notified. The soils will be characterized and mitigated to the levels discussed herein or to concentrations determined to not present a human health risk or threat to groundwater. If a regulated feature is discovered, the DTSC and/or other appropriate agency will be notified and the appropriate permits, if necessary, will be obtained prior to the removal of the feature.

6.2.3 Cleanup Standards

Impacted soils will be mitigated to current human health-based regulatory guidelines, such as EPA Regional Screening Levels for industrial/commercials soils (EPA-RSLi) and the DTSC-SLi or the San Francisco Bay Regional Water Quality Control Board Environmental Screening Levels (SFRWQCB-ESLs) for the protection of groundwater. If impacted soil exceeding these cleanup standards is to be left in place, the material will be evaluated on an environmental and health risk basis (i.e. the preparation of a risk-based analysis based on industrial/commercial land use criteria) or by using engineering controls.

6.3 Site-Specific Soil Management Protocols

The SMP Field Coordinator will monitor soils throughout the site on an as-needed basis, as discussed above. The soils will be monitored during grading activities for visual fugitive dust, staining, odors, and/or elevated PID readings. These monitoring activities will be conducted using visual, olfactory, and PID meter calibrated daily to hexane. The monitoring activities will be documented on Daily Field Logs. If impacted soil or unknown environmental concerns are encountered during redevelopment activities, the soil and/or features will be managed in accordance with this SMP.

As presented below, the Site-Specific Soil Management Protocols are grouped by the type of environmental concern and have been developed with acknowledgment of past site use history and previous subsurface investigations completed at the site. Soil samples collected as part of the SMP will be analyzed by a State-certified environmental laboratory.

6.3.1 Stained and/or Odorous Soil or Other Unregulated Feature

If stained or odorous soil is encountered with low or elevated PID readings of VOCs, the SMP Field Coordinator will notify the SMP Program Manager, who will notify the owner's Project Director. Either the SMP Program Manager or Owner's Project Director will notify the DTSC of the finding.

If the stained or odorous soils have low PID readings (below 50 ppm of VOCs as measured with a PID), the soil will be sampled for profiling purposes. If laboratory results indicate concentrations exceeding the State and Federal guidelines for the protection of human health or the environment, the extent of impacted materials will be defined, and the soils will be excavated and disposed of appropriately. Confirmation soil samples will be collected to verify that the extent has been reached. If the initial laboratory results indicated low concentrations of residual chemicals, below the State and Federal guidelines for the protection of the environment or human health, the materials will be left on-Site.

If the stained or odorous soils have elevated PID readings (exceeding 50 ppm of VOCs), the soil will be sampled for profiling purposes. If laboratory results indicated concentrations exceeding the State or Federal guidelines for the protection of human health or the environment, the extent of impacted materials will be defined and the soils will be excavated and disposed of appropriately. Prior to excavation, the SCAQMD will be notified and excavation activities will be completed in general accordance with the Various Site Permit. Confirmation soil samples will be collected to verify that the extent has been reached.

6.3.2 Unburied Landfill Waste

In the case of unburied landfill waste encountered during redevelopment, grave-digging, or soil-disturbing activities, these materials will be removed, and the presence of the

landfill cover beneath the found landfill waste will be verified. The landfill waste will be containerized in 55-gallon drums or stockpiled on and covered with Visqueen plastic, and subsequently profiled and disposed of accordingly. In the event it is determined that the landfill cover is less than the prescribed thickness, import soil will be sampled and verified "clean" as discussed blow in Section 6.3.5.

6.3.3 Regulated Features

If a regulated feature such as a UST or clarifier is encountered, Ardent will be responsible to obtain the appropriate permits to remove the feature and will follow the regulatory guidelines set forth by the appropriate regulatory agency.

6.3.4 Sampling Export Soils

Soils are not expected to be exported from the site during regular grading activities. If impacted soils are encountered that need to be removed from the site as part of a mitigation measure, the materials will be sampled and tested for the appropriate parameters to meet the disposal profiling purposes.

6.3.5 Sampling Imported Soil

To assure that soil imported to the site is "clean," Ardent will sample the soil prior to transport to the site. Currently, regulatory agencies have not established standards that address environmental requirements for acceptance of clean imported fill materials at commercial properties. The DTSC, however, has issued an advisory entitled *"Information Advisory Clean Imported Fill Material"* dated October 2001. This guideline was prepared for school sites and is very conservative, and therefore, will be used as a general guideline, depending on the amount of soil to be imported and source location. A copy of this document is provided in Appendix D. Ardent may use additional information such as knowledge of the property or known land use history to determine actual sampling criteria.

6.3.5.1 Sampling Criteria

To minimize the potential of introducing contaminated fill material onto the site, it is necessary to verify through documentation that the fill source is adequate and/or have the fill materials analyzed for potential contaminants

based on the location and history of the source area. Fill documentation might include a Phase I ESA and/or the results of testing. If such documentation is not available or is inadequate, Ardent will conduct a review of the property location's current and historical operations to be used to decide what analytical parameters are relevant. The analyses of the fill material will be based on the source of the fill and/or knowledge of the prior land use. If knowledge of the prior land use is unknown, then an appropriate suite of analyses must be performed prior to the fill being used at the site. Sampling procedures are presented in Appendix E.

The following tables present the general recommended number of representative samples to be collected from an area of fill obtained from in-place soil and the number of samples to be collected from a volume of fill from stockpiled soil. Samples from an in-place borrow area will be collected with a direct-push drill rig or hand auger. If stockpiled, grab samples will be collected.

Table 1: Recommended Fill Material Sampling Schedule

Area of an In-Place Borrow Area	**Sampling Requirements**
2 acres or less	Minimum of 4 samples
2 to 4 acres	Minimum of 1 sample every ½ acre
4 to 10 acres	Minimum of 8 samples
Greater than 10 acres	Minimum of 8 locations with 4 sub-samples per location (32 total samples)
Volume of Borrow Area Stockpile	**Sample per Volume**
Up to 1,000 cubic yards	1 sample per 250 cubic yards
1,000 to 5,000 cubic yards	4 samples for first 1,000 cubic yards +1 sample per each additional 500 cubic yards
Greater than 5,000 cubic yards	12 samples for first 5,000 cubic yards +1 sample per each additional 1,000 cubic yards

Table 2 presents the recommended chemical analyses to be performed based on the fill source. To assess the chemical analyses, a Phase I ESA or equivalent document shall be reviewed to assess historical and current uses of the property and to determine whether the borrow area may have been

impacted by previous activities on the property. If a Phase I ESA is not available, Ardent will conduct a preliminary land use screen of the property. All sampling and analyses will be completed prior to delivery of the materials to the site. Composite sampling will not be allowed. The acceptable levels are based on current regulatory guidelines and/or site-specific cleanup criteria as presented below.

Table 2: Recommended Chemical Analyses for Fill Source Area

Fill Source	Target Compounds
Land near to existing freeway	Lead (EPA Methods 6010B or 7471A), PAHs (EPA Method 8310)
Land near mining area or rock quarry	Heavy Metals (EPA Methods 6010B and 7471), Asbestos (polarized light microscopy), pH
Agricultural Land	Organochlorine Pesticides (EPA Method 8081A or 8080A); Organophosphate Pesticides (EPA Method 8141A); Chlorinated Herbicides (EPA Method 8151A), Heavy Metals (EPA Methods 6010B and 7471)
Residential/ Acceptable Commercial Land	VOCs (EPA Method 8021 or 8260B, as appropriate and combined with collection by EPA Method 5035), semi-VOCs (EPA Method 8270C), TPH (EPA Method 8015 modified), PCBs (EPA Method 8082 or 8080A), Heavy Metals including Lead (EPA Methods 6010B and 7471)

6.3.5.2 Acceptable Levels

Following receipt of laboratory reports, Ardent will evaluate the data to assess whether the materials meet the criteria of “clean” soils. To do so, Ardent will compare the results to a number of current regulatory guidelines. When more than one cleanup standard is used, the more conservative value will be used. When applicable, commercial standards will be used. In general, if concentrations exceed the standards set forth in these documents, the materials will not be accepted as fill. However, if chosen, a risk analysis may be completed using site-specific data to further evaluate whether the materials may be used on site. The following documents will be used to evaluate import soils.

- SFRWQCB-ESLs for the protection of groundwater (drinking water) dated January 2019, or later revisions;

- EPA-RSLi, dated May 2020, or later revisions;
- Hazardous waste criteria outlined in the California Code of Regulations (CCR) Title 22 (referred to herein as Title 22);
- DTSC Human and Ecological Risk Office (HERO) Human Health Risk Assessment (HHRA) Note 3, DTSC-SLi, dated June 2020, or later revisions; and/or
- DTSC, Final Report Background Metals at Los Angeles Unified School Sites – Arsenic: Supplement to the DTSC Preliminary Endangerment Assessment (PEA) for evaluating background concentrations of arsenic at Los Angeles Unified School District (LAUSD) school sites, dated June 6, 2005.

The following presents the constituents to be analyzed and the cleanup criteria that will be used to assess whether the materials can be used for import soils.

- Petroleum hydrocarbons – SFRWQCB-ESLs
- VOC – SFRWQCB-ESLs, EPA-RSLi, and/or DTSC-SLi
- SVOCs and PAHs – SFRWQCB-ESLs, EPA-RSLi, and/or DTSC-SLi
- Metals – SFRWQCB-ESLs, and/or EPA-RSLi
- Arsenic – background concentrations as defined by the DTSC for LAUSD properties
- Pesticides and PCBs – SFRWQCB-ESLs, EPA-RSLi, and/or DTSC-SLi
- Asbestos – less than detectable limits when analyzed by PLM.
- pH – Title 22.

6.4 Final Reporting

The Final Grading Environmental Oversight Report will be prepared following completion of the mass-grading and redevelopment activities and submitted to the DTSC. This report will document the monitoring activities, import soil sampling results, and the results of the environmental issues discovered during grading activities, if any.

If necessary, a separate Excavation Completion Report will also be presented to the SCAQMD as per the Various Sites Permit or Site Specific Soil Mitigation Plan requirements.

7 REFERENCES

Ardent Environmental Group, Inc. (Ardent), 2020, Landfill Cover Investigation, Former La Veta Refuse Disposal Station, 2205 East Palmyra Avenue and 290 South Yorba Street, Orange, California: Report prepared for Kornerstone Park, LLC, dated May 22.

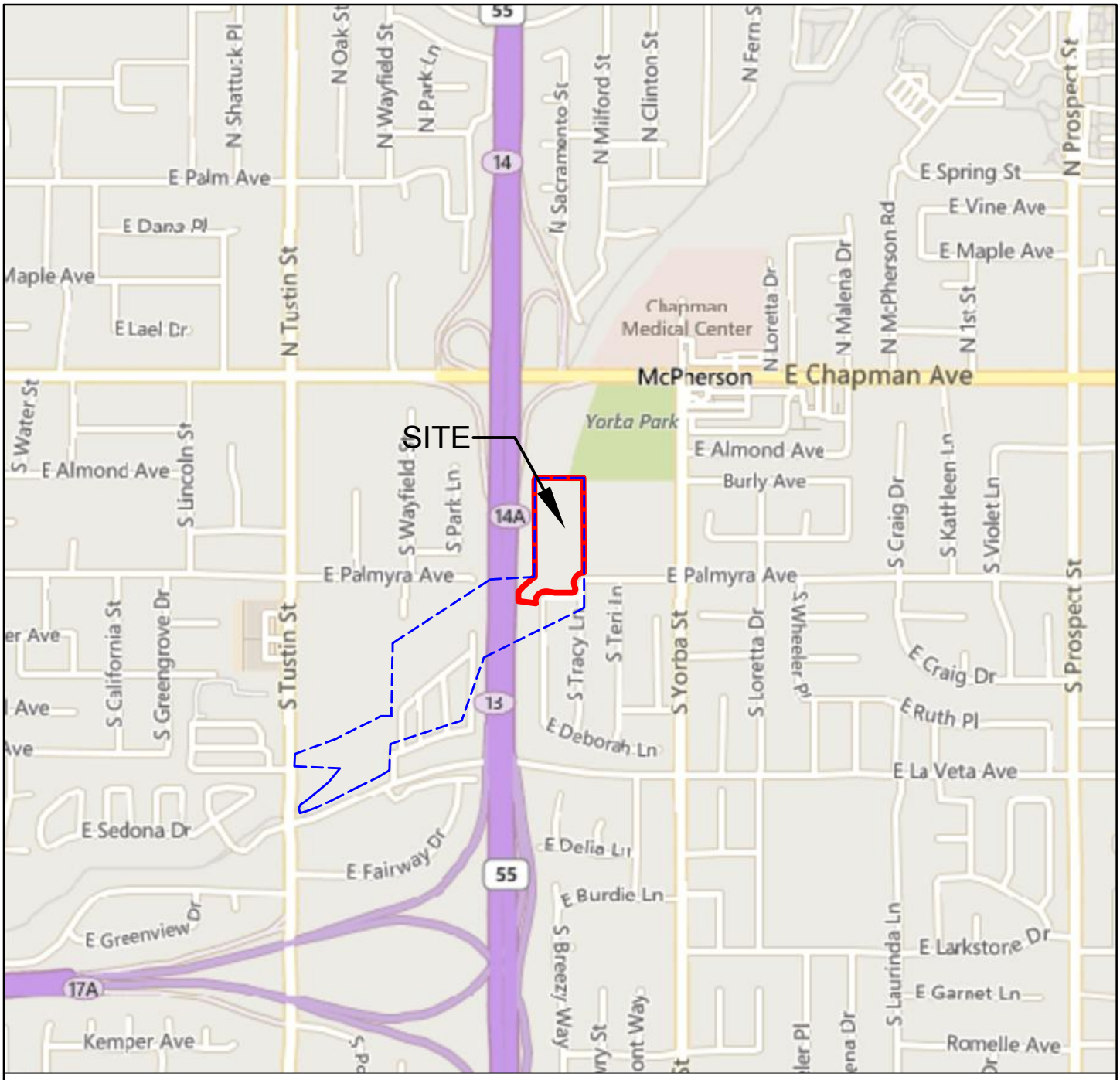
California Regional Water Quality Control Board, San Francisco Bay Region (SFRWQCB), 2019, Environmental Screening Levels (ESLs), dated January.

Department of Toxic Substances Control (DTSC), 2005, Final Report Background Metals at Los Angeles Unified School Sites – Arsenic: Supplement to the DTSC Preliminary Endangerment Assessment (PEA) for evaluating background concentrations of arsenic at Los Angeles Unified School District (LAUSD) school sites, dated June 6.

Department of Toxic Substances Control (DTSC), Human and Ecological Risk Office (HERO), 2020, Human Health Risk Assessment (HHRA) Note Number 3, Screening Levels (DTSC-SLs), dated June.

EPA Region 9, 2020, Regional Screening Levels (RSLs) Summary Table, dated May.

Geosyntec Consultants (Geosyntec), 2010, Revised Site Assessment Report, La Veta Former Refuse Disposal Station, City of Orange, California: Report prepared for OC Waste & Recycling, Santa Ana, California, dated January 12.



Approximate Scale, in feet

0 500 1,000

LEGEND

Former La Veta Disposal Station Lease Boundary

Site Boundary

NOTES:

1) Base Map Source: Microsoft Corporation, 2020.
2) Former La Veta Disposal Station Lease Boundary based on Revised Site Assessment Report prepared by Geosyntec Consultants, dated January 12, 2010.
3) Dimensions, directions and locations are approximate.

ARDENT ENVIRONMENTAL GROUP, INC.	PROJECT NO. 100081005	SITE LOCATION MAP	FIGURE 1
	DATE 10/20	FORMER LA VETA REFUSE DISPOSAL STATION 2205 EAST PALMYRA AVENUE AND 290 SOUTH YORBA STREET ORANGE, CALIFORNIA	

Approximate Scale, in feet

0 30 60

NOTE: Dimensions, directions, and locations are approximate.

LEGEND

Approximate Property Line

NOTES:

1. Base Map Source: Conceptual Site Plan, Palmyra Cemetery, 2205 East Palmyra Avenue & 290 South Yorba Street, Orange, California, prepared by Stratos Form, undated.
2. Dimensions, directions, and locations are approximate.

Former BMX Track

YMCA Building (vacant)

Parking Lot

Soccer Field

Santiago Creek Bank

PALMYRA AVENUE

COSTA MESA FREEWAY

TRACY LANE

ARDENT ENVIRONMENTAL GROUP, INC.	PROJECT NO. 100081005	CURRENT SITE LAYOUT	FIGURE 2
	DATE 10/20	FORMER LA VETA REFUSE DISPOSAL STATION 2241 EAST PALMYRA AVENUE ORANGE, CALIFORNIA	

Approximate Scale, in feet

0 30 60

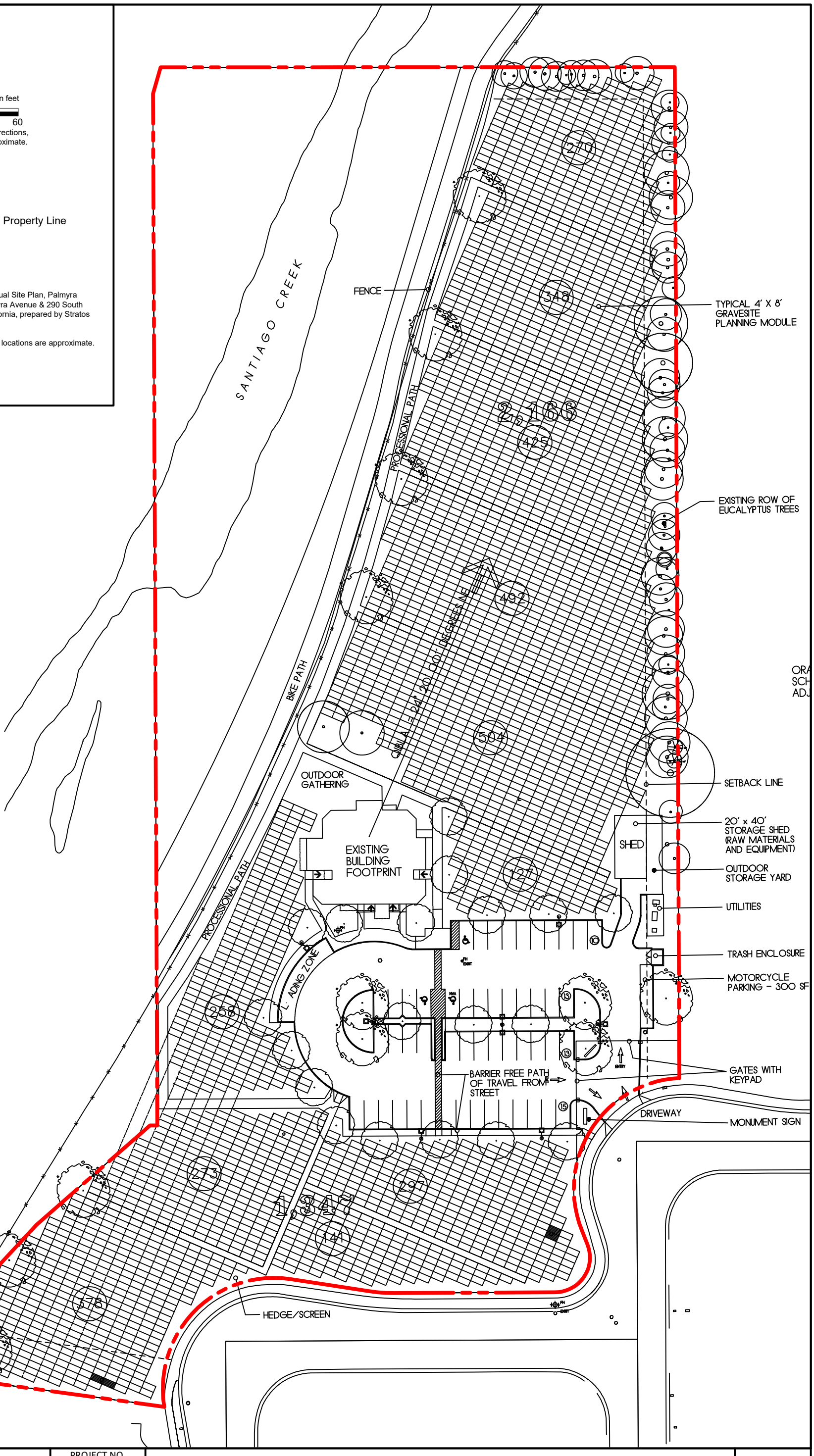
NOTE: Dimensions, directions, and locations are approximate.

LEGEND

Approximate Property Line

NOTES:

1. Base Map Source: Conceptual Site Plan, Palmyra Cemetery, 2205 East Palmyra Avenue & 290 South Yorba Street, Orange, California, prepared by Stratos Form, undated.
2. Dimensions, directions, and locations are approximate.



ARDENT ENVIRONMENTAL GROUP, INC.	PROJECT NO. 100081005	PROPOSED CEMETERY LAYOUT	FIGURE 3
	DATE 10/20	FORMER LA VETA REFUSE DISPOSAL STATION 2241 EAST PALMYRA AVENUE ORANGE, CALIFORNIA	

N

Approximate Scale, in feet

0 30 60

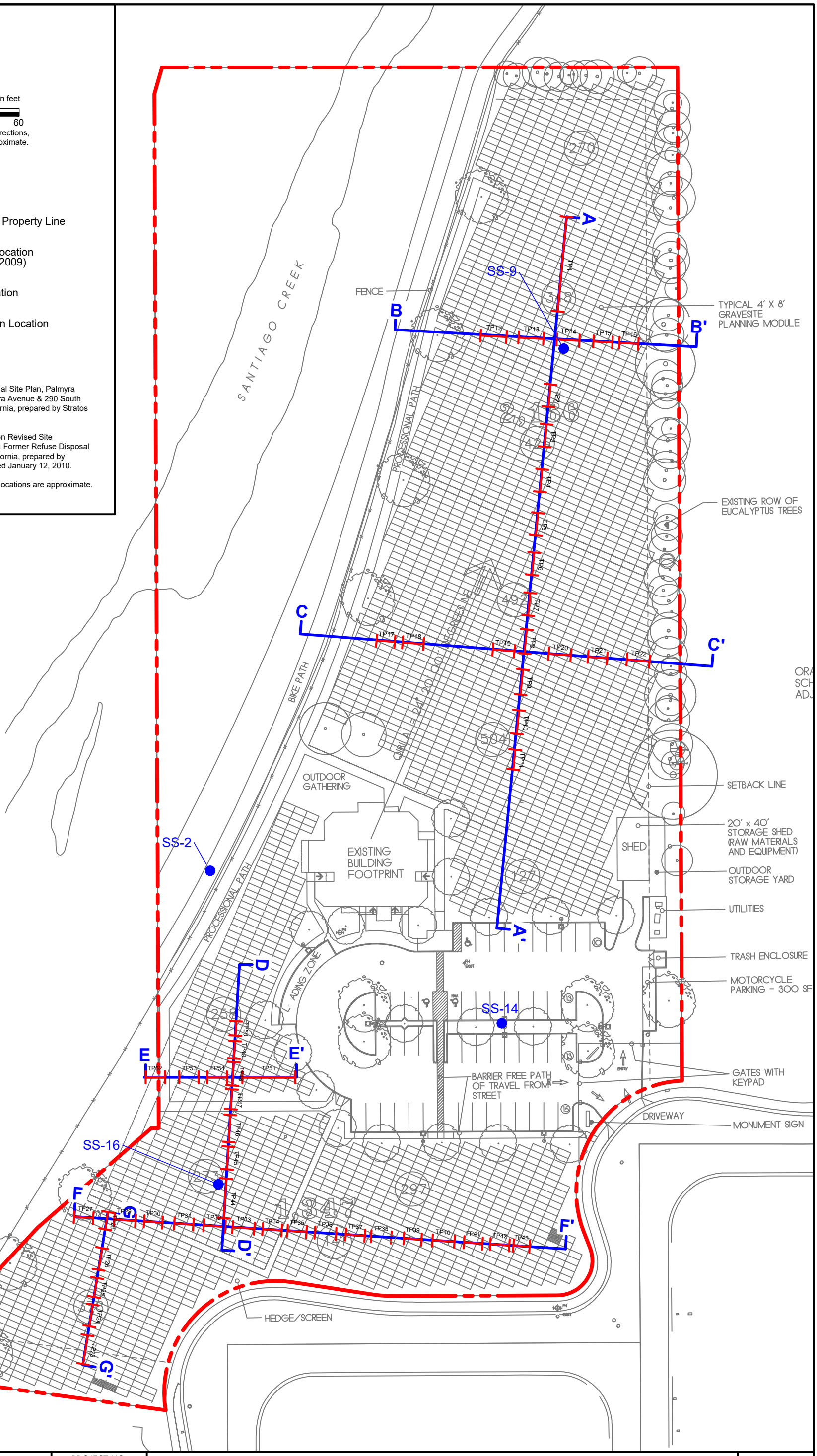
NOTE: Dimensions, directions, and locations are approximate.

LEGEND

- Approximate Property Line
- SS-1 — Soil Boring Location (Geosyntec, 2009)
- TP1 — Test Pit Location
- A A' — Cross-Section Location

NOTES:

1. Base Map Source: Conceptual Site Plan, Palmyra Cemetery, 2205 East Palmyra Avenue & 290 South Yorba Street, Orange, California, prepared by Stratos Form, undated.
2. Soil boring locations based on Revised Site Assessment Report, La Veta Former Refuse Disposal Station, City of Orange, California, prepared by Geosyntec Consultants, dated January 12, 2010.
3. Dimensions, directions, and locations are approximate.



ARDENT ENVIRONMENTAL GROUP, INC.	PROJECT NO. 100081005	TEST PIT, SOIL SAMPLE, AND CROSS-SECTION LOCATIONS	FIGURE 4
	DATE 10/20	FORMER LA VETA REFUSE DISPOSAL STATION 2241 EAST PALMYRA AVENUE ORANGE, CALIFORNIA	

North

South

A — SS-8 — TP1 — **B-B'** — SS-9 — TP2 — TP3 — TP4 — SS-11 — TP5 — TP6 — TP7 — SS-12 — TP8 — **C-C'** — TP9 — TP10 — TP11 — SSG-1 — Fenceline — **A'**

feet below existing grade

0, 5, 10, 15, 20, 25, 30, 35, 40

Fill Soil

Construction Debris

Landfill

Native Soil

Geosyntec reported no landfill waste from 0 to 30 feet bgs in boring SS-8

Geosyntec reported landfill waste from 8 to 18 feet bgs in boring SS-9

Geosyntec reported landfill waste from 11 to 23 feet bgs in boring SS-11

Geosyntec reported landfill waste from 5 to 20 feet bgs in boring SS-12

Geosyntec reported landfill waste from 7 to 33 feet bgs in boring SSG-1

LEGEND

- TP1 — Test Pit Location and Designation
- Soil
- Landfill
- Approximate Soil / Construction Debris / Landfill Waste Interface, dashed where inferred

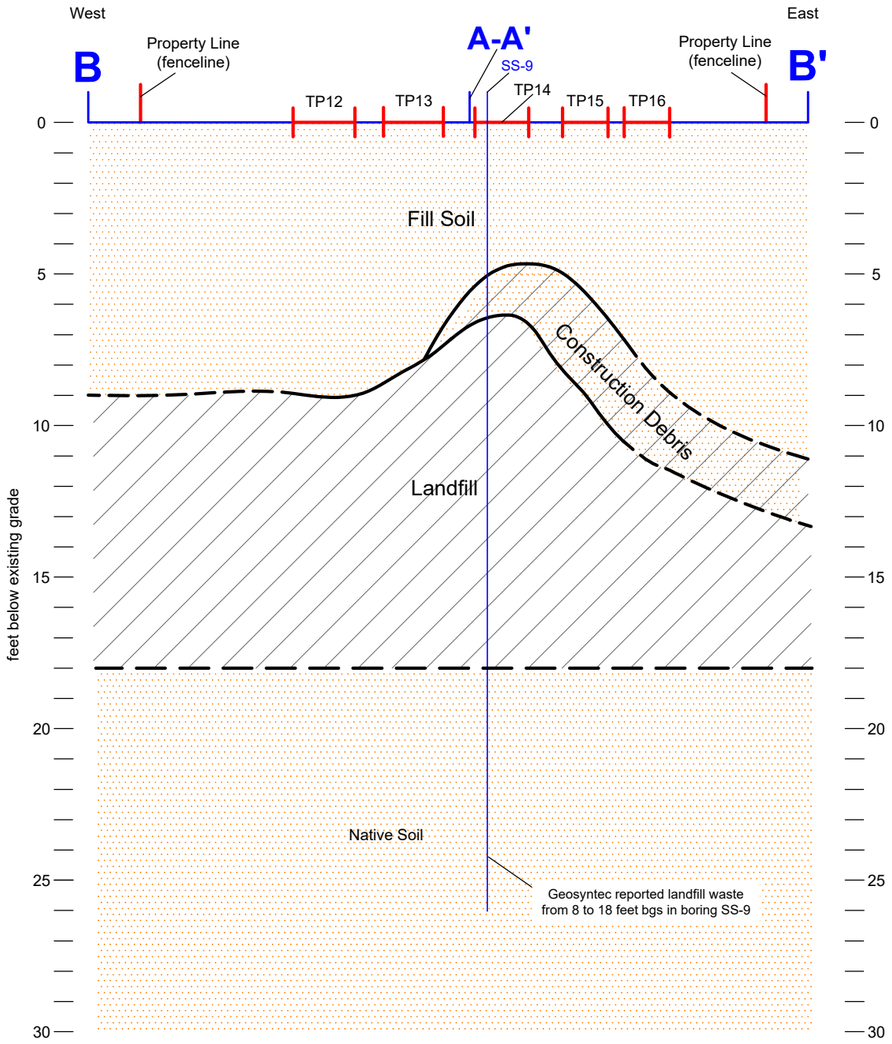
Horizontal Scale, in feet: 0, 40

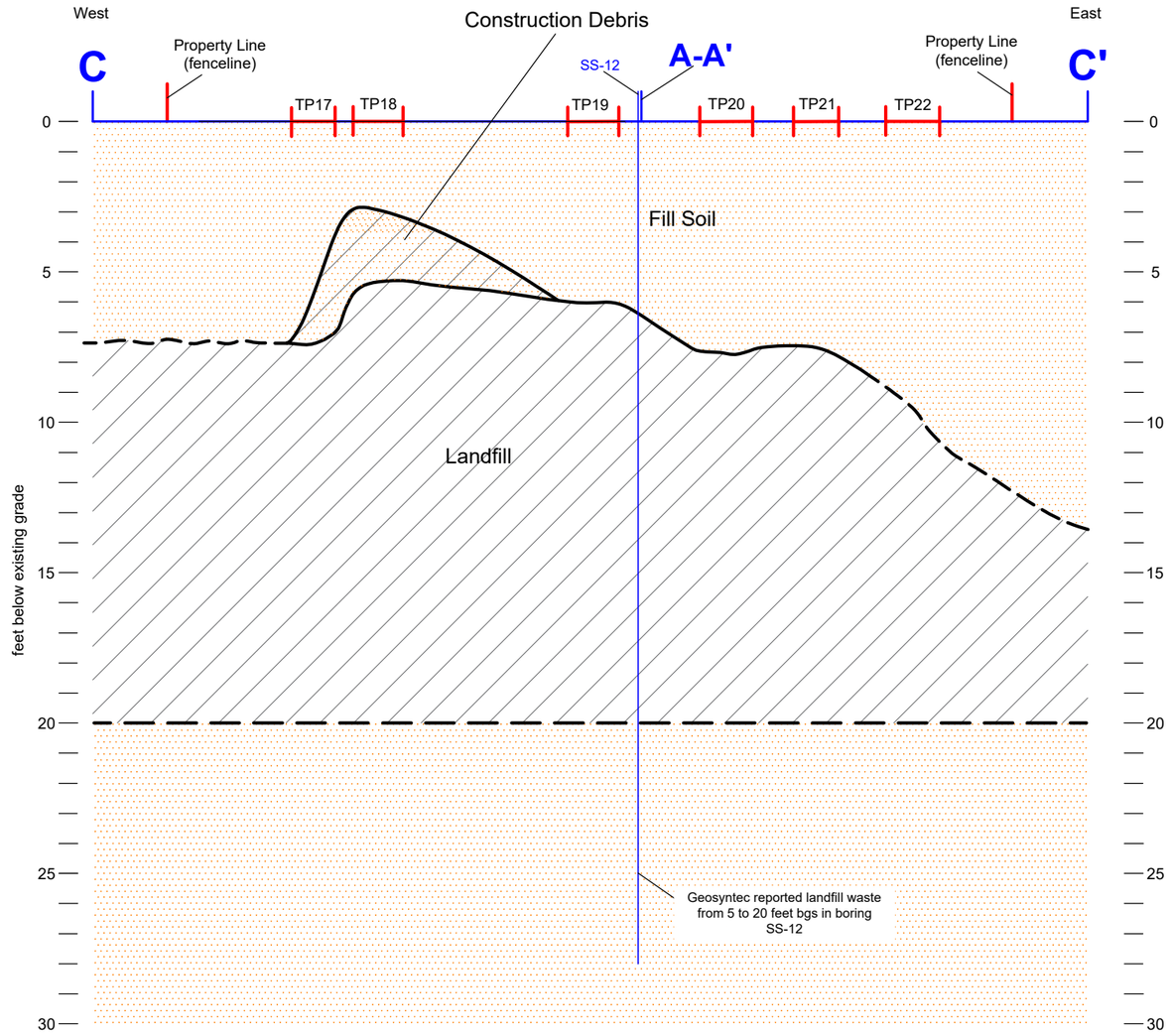
Vertical Scale, in feet: 0, 15

NOTE: Dimensions, directions, and locations are approximate.

ARDENT ENVIRONMENTAL GROUP, INC.

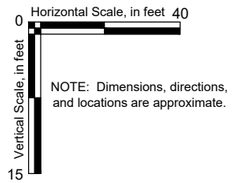
PROJECT NO.	CROSS SECTION LOCATION - A-A'	FIGURE
100081005		5
DATE 10/20	FORMER LA VETA REFUSE DISPOSAL STATION ORANGE, CALIFORNIA	





LEGEND

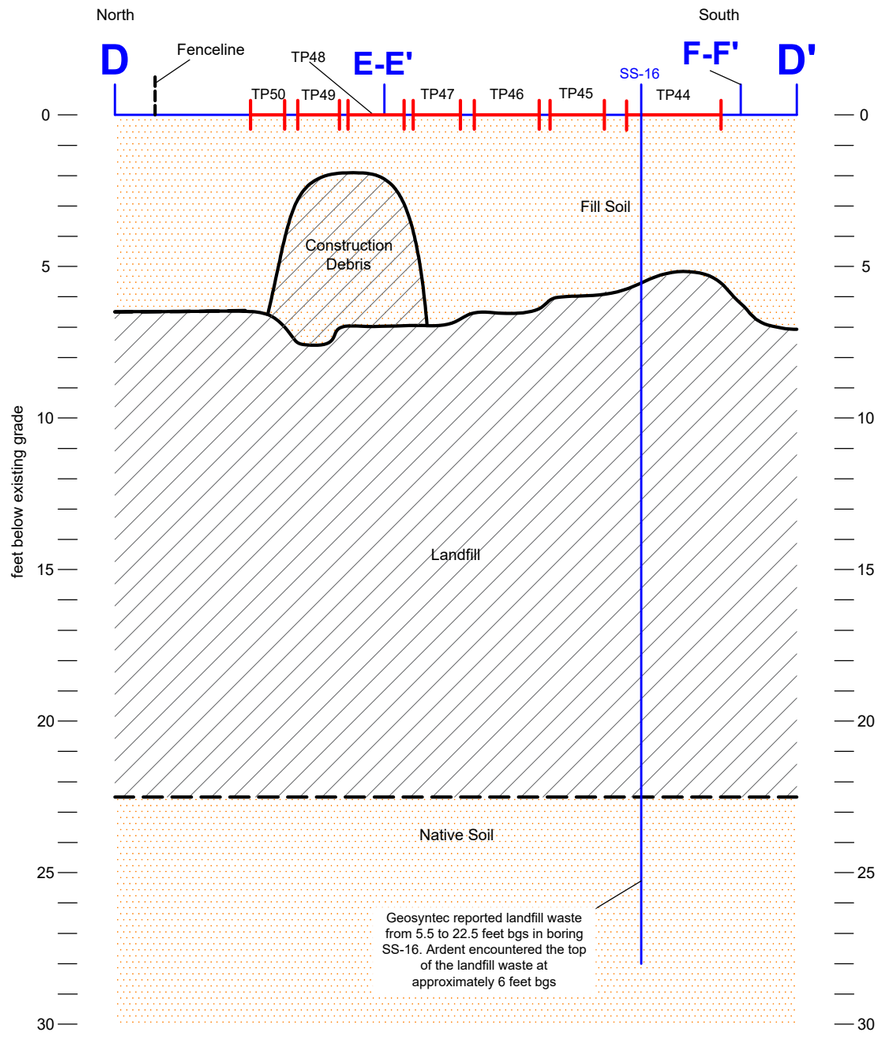
- TP1 — Test Pit Location and Designation
- Soil
- Landfill
- Approximate Soil / Construction Debris / Landfill Waste Interface, dashed where inferred

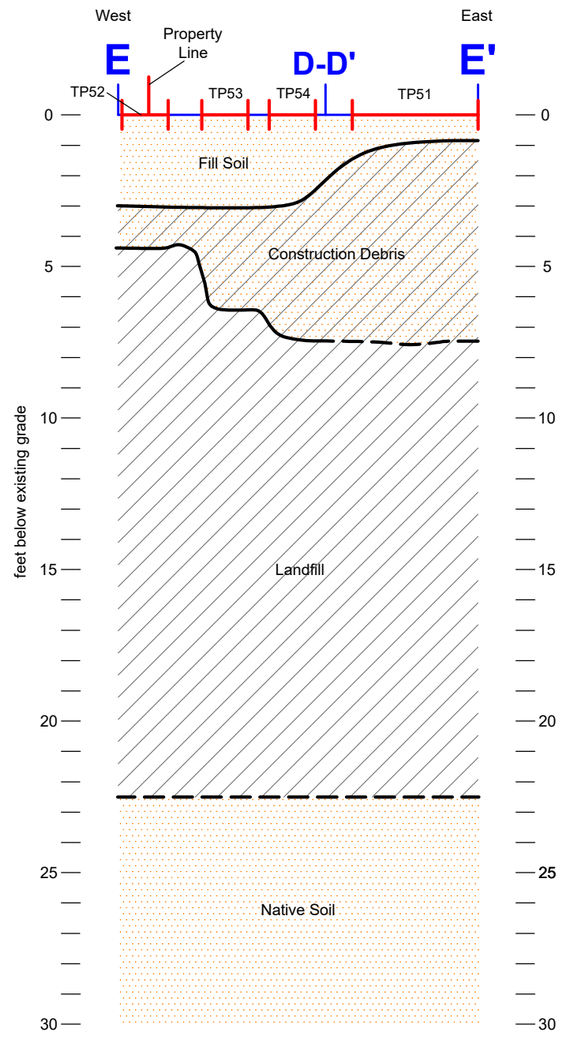


NOTE: Dimensions, directions, and locations are approximate.

ARDENT ENVIRONMENTAL GROUP, INC.

PROJECT NO.	CROSS SECTION LOCATIONS - B-B' AND C-C'	FIGURE
100081005		6
DATE	FORMER LA VETA REFUSE DISPOSAL STATION ORANGE, CALIFORNIA	
10/20		





LEGEND

- TP1 — Test Pit Location and Designation
- Soil
- Landfill
- Approximate Soil / Construction Debris / Landfill Waste Interface, dashed where inferred

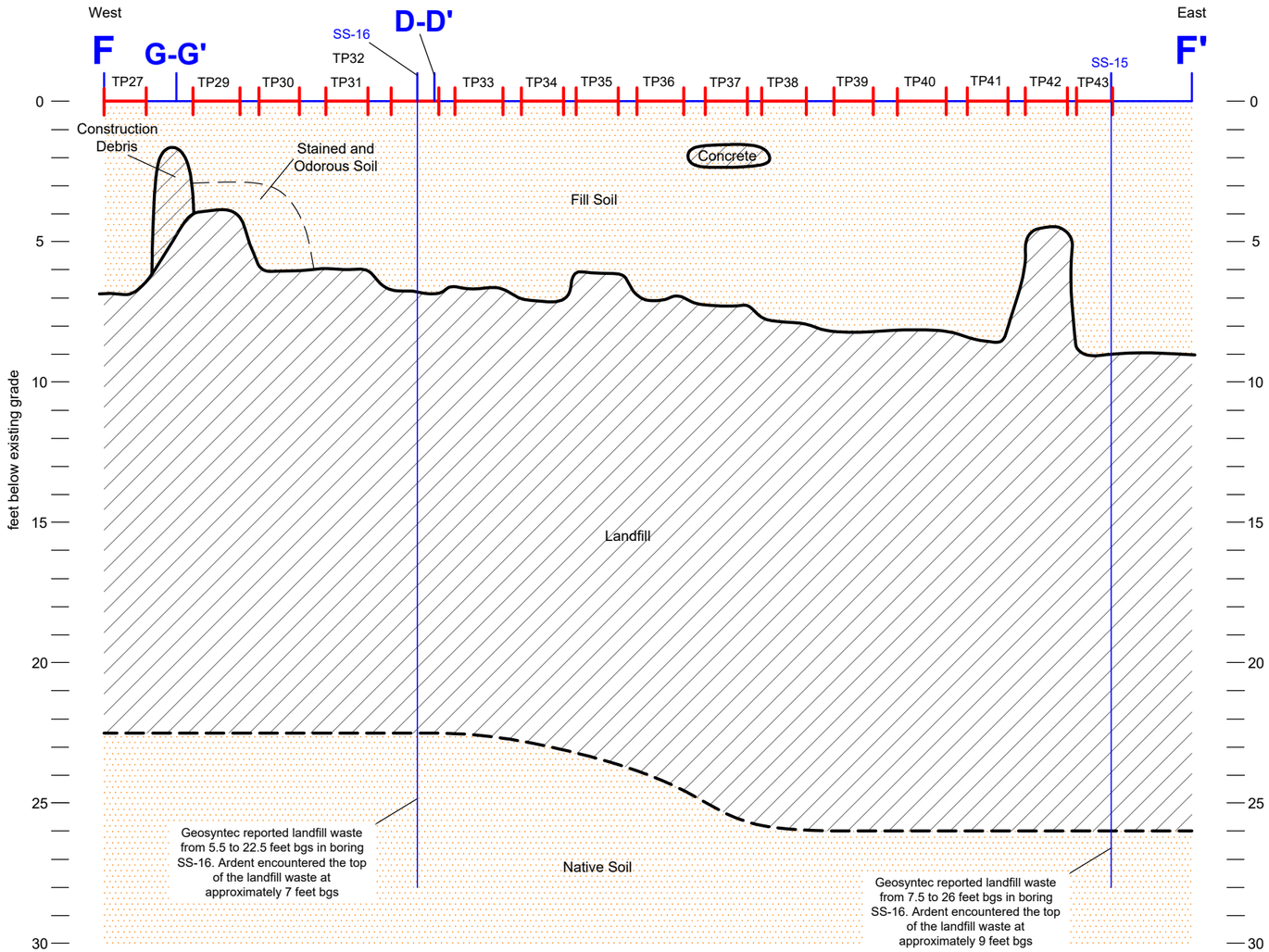
Horizontal Scale, in feet: 0 — 40

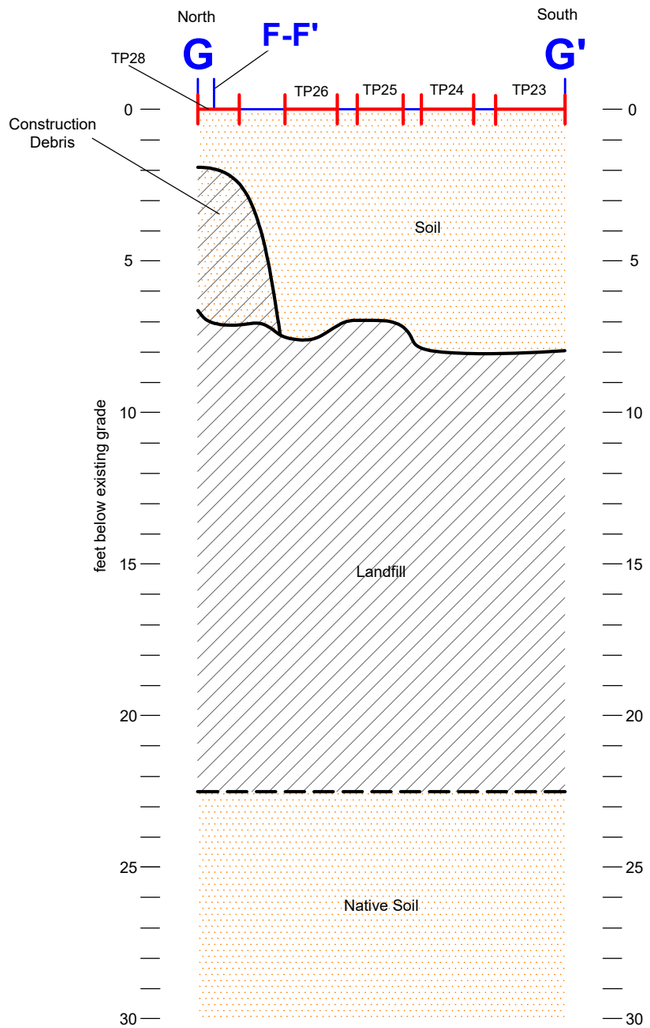
Vertical Scale, in feet: 0 — 15

NOTE: Dimensions, directions, and locations are approximate.

ARDENT ENVIRONMENTAL GROUP, INC.

PROJECT NO.	CROSS SECTION LOCATIONS - D-D' AND E-E'	FIGURE
100081005		7
DATE 10/20	FORMER LA VETA REFUSE DISPOSAL STATION ORANGE, CALIFORNIA	





LEGEND

- TP1 — Test Pit Location and Designation
- Soil
- Landfill
- Approximate Soil / Construction Debris / Landfill Waste Interface, dashed where inferred

Horizontal Scale, in feet: 0 – 40

Vertical Scale, in feet: 0 – 15

NOTE: Dimensions, directions, and locations are approximate.

ARDENT ENVIRONMENTAL GROUP, INC.

PROJECT NO.	CROSS SECTION LOCATIONS - F-F' AND G-G'	FIGURE
100081005		8
DATE	FORMER LA VETA REFUSE DISPOSAL STATION	
10/20	ORANGE, CALIFORNIA	

N

Approximate Scale, in feet

0 30 60

NOTE: Dimensions, directions, and locations are approximate.

LEGEND

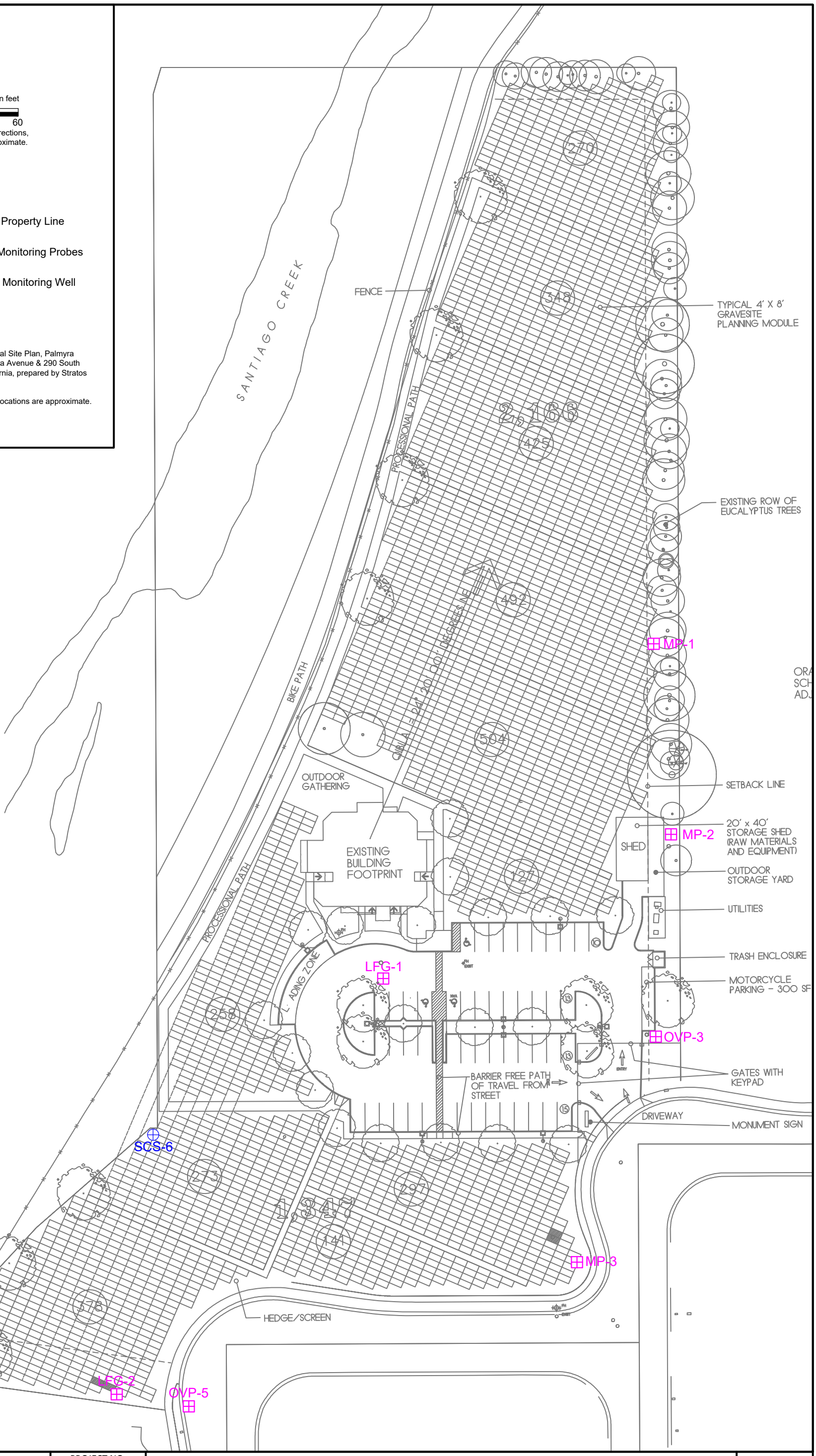
Approximate Property Line

MP-1 Landfill Gas Monitoring Probes

SCS-6 Groundwater Monitoring Well

NOTES:

1. Base Map Source: Conceptual Site Plan, Palmyra Cemetery, 2205 East Palmyra Avenue & 290 South Yorba Street, Orange, California, prepared by Stratos Form, undated.
2. Dimensions, directions, and locations are approximate.



ARDENT ENVIRONMENTAL GROUP, INC.	PROJECT NO. 100081005	LANDFILL GAS MONITORING PROBE AND GROUNDWATER MONITORING WELL LOCATIONS	FIGURE 9
	DATE 08/20	FORMER LA VETA REFUSE DISPOSAL STATION 2241 EAST PALMYRA AVENUE ORANGE, CALIFORNIA	

APPENDIX A
HEALTH AND SAFETY PLAN

Health and Safety Plan

Former La Veta Refuse Disposal Station
2205 East Palmyra Avenue and 290 South Yorba Street
Orange, California

Prepared for:
Kornerstone Park, LLC
2500 East Ball Road, Suite 260
Anaheim, California 92806

Prepared by:
Ardent Environmental Group, Inc.
1827 Capital Street, Suite 103
Corona, California 92880

October 9, 2020
Project No. 100081005

APPROVED BY

Health and Safety Manager

October 9, 2020
Date

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Figure 1 – Hospital Route Map

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Appendix A – Health and Safety Compliance Agreement
Appendix B – Health and Safety Orientation Meeting Attendance Roster
Appendix C – Organic Vapor Monitoring Documentation Form

1 INTRODUCTION

This document presents the health and safety procedures for field activities at the property located at 2205 East Palmyra Avenue and 290 South Yorba Street in Orange, California (site). The site was part of a larger former landfill known as the La Veta Refuse Disposal Station, referred to herein as the "Former La Veta Landfill". Following the closure of the landfill, the site was redeveloped as a YMCA facility. On behalf of the property owner, Kornerstone Park, LLC (Kornerstone) is planning to redevelop the site as a cemetery. The purpose of this health and safety plan (HASP) is to assure safe practices during fieldwork during redevelopment of the site. This HASP is part of a Soil Management Plan (SMP) prepared by Ardent Environmental Group Inc. (Ardent) to provide procedures and criteria to guide unknown environmental issues that may be encountered during redevelopment activities. Groundwater beneath the site is approximately 200 feet below the ground (bgs) and will not be encountered during redevelopment or cemetery operation activities.

2 PROJECT SAFETY PERSONNEL

The Program Manager is responsible for delivering this HASP and any addenda to the Field Coordinator. The Program Manager is responsible for distributing the plan to all field personnel and to an authorized representative of each firm conducting work at the site. The Program Manager is also responsible for implementing the provisions of this plan and its addenda. Implementation includes review of the HASP requirements, review of field personnel compliance with medical examination requirements, review of the provisions of this plan with Owner's representative (and its subcontractors), field personnel involved with the project, provision for safety equipment specified in Subsection 5.4, and submission of the requisite health and safety documents, including the forms in Appendix A and Appendix B.

The Field Coordinator is responsible for assisting the Program Manager with on-site implementation of this HASP. His/Her responsibilities include: 1) maintaining safety equipment supplies, 2) performing air quality measurements as specified herein, 3) directing decontamination operations and emergency response operations until public emergency personnel arrive on-site, 4) setting up work zone limits as specified herein, and 5) reporting all accidents, incidents, and infractions of safety rules and requirements to the Program Manager.

The Field Coordinator has the authority to suspend work any time he judges that the provisions of the site safety plan are inadequate to provide a working environment conducive to worker safety, and is to inform the Program Manager of any individuals whose on-site presence jeopardizes their own health and safety or the health and safety of others. The responsible personnel for this project are listed below.

Table 1 – Responsible Personnel for the Site

Title	Name	Daytime	After Hours
Program Manager	Paul Roberts	(951) 736-5334	(951) 751-3198
Field Coordinator	Dennis Kawasaki	(951) 736-5334	(909) 560-7408
Site Health and Safety Officer (SHSO)	Stephanie Jones	(951) 736-5334	(951) 972-2131
Ardent Corporate Health and Safety Manager	Craig Metheny	(951) 736-5334	(951) 751-2996
General Contractor	To Be Determined	To Be Determined	To Be Determined
Grading and Excavation Contractor	To Be Determined	To Be Determined	To Be Determined

3 WORK DESCRIPTION

During mass grading and utility excavation, HMC representatives will complete on-site monitoring on a part-time, as-needed basis as part of the SMP. These monitoring activities will include field observations (i.e., odors, staining, and/or photoionization detector [PID] readings) of soil during redevelopment. If significant impacted soil is encountered, Ardent representatives may need to remediate impacted soils or complete site characterization, which might include excavating soil, drilling, soil sampling, etc.

Ardent's scope of work for this project does not include health and safety monitoring for the General or Grading Contractor's personnel and subcontractors as part of their daily work activities during any soil excavation activities. The General Contractor and subcontractors will provide their own HASP.

4 HAZARD ASSESSMENT

The following subsections include potential hazards that may be present at the site or created as a result of the operations being conducted at the site.

4.1 Confined Spaces

A "confined space" is defined by the United States Department of Health and Human Services as a space that has one of the following characteristics:

- Limited openings for entry and exit, such as tanks, tunnels, vaults, etc.,
- Not designed for continuous worker occupancy, or
- Unfavorable natural ventilation or other hazards.

Work will not be conducted in confined space as defined by 29 Code of Federal Regulations (CFR) 1910.146. Excavations greater than 4 feet deep will not be entered.

4.2 Chemical Hazards

Chemicals of concern anticipated to be discovered at the site would include heavy petroleum hydrocarbons and possibly VOCs associated with the historical oil production activities. If discovered during grading, the extent of these impacted soils will need to be characterized and remediated. Site characterization might include the use of on-site grading equipment or drill rigs. If limited in extent, the impacted soils will likely be excavated for off-site disposal.

4.3 Inhalation Hazard

Previous investigations have shown low concentrations of VOCs in areas of known impacted soil using field instruments such as a photoionization detector (PID) meter not exceeding air emission regulations set forth by the South Coast Air Quality Management District (SCAQMD) Rule 1166 (i.e. soil vapor exceeding 50 parts per million [ppm], defined by SCAQMD as “VOC-Contaminated Soil”). Based on the information, VOC-Contaminated soil is not expected to be encountered and full-time monitoring is not necessary.

However, if unknown environmental concerns are encountered, Ardent may need to monitor air emissions based on its SCAQMD Various Sites Permit. Based on this information, inhalation hazards may be identified. The following table provides guidelines as to the action required in response to corresponding photoionization detector (PID) measurements of benzene, the most conservative chemical compound that might be encountered. The measurements will be collected in the ambient air in the breathing zone

of personnel working in the area. The PID will be equipped with an electron-volt (eV) bulb of 10.2 or greater.

Table 2 – Monitoring Methods and Action Levels for Volatile Organic Compounds Using Screening Survey Instruments

Chemical	Routes of Entry	Respirator Protection Required	Stop Work	TLV	OSHA PEL
Benzene	Inhalation, Dermal	OVA = >5 ppm	OVA = >100 ppm	0.1 ppm as TWA	1 ppm

Notes:
If concentrations at or above the stop-work thresholds are encountered, work must cease and the SMP Program Manager and Corporate Health and Safety Director must be contacted to render judgment whether more stringent respiratory protection is required and extension of the restricted access work zone is necessary.
OVA – Organic vapor analyzer.
TWA – Time-Weighted Average concentration for a normal 8-hour work day and a 40-hour work week, to which nearly all workers may be repeatedly exposed, day after day, without adverse effect.
ppm – Parts per million. For inhalation exposure, the exposure concentration is measured in the breathing zone of the individual (i.e., within 3 inches of the nose and mouth).
TLV – Threshold Limit Value. The time-weighted concentration for a normal 8-hour workday and a 40-hour work week, to which nearly all workers may be repeatedly exposed, day after day, without adverse effect.
OSHA PEL – Occupation Safety and Health Administration Permissible Exposure Limit. Based on 10-minute maximum peak in any 3-hours.

4.4 SCAQMD Monitoring

Based on investigations completed at the site, low concentrations of VOCs were encountered, and therefore, the site would not be defined as a possible VOC-Contaminated soil site, as defined by SCAQMD. Due to the volume of soil that is planned to be graded and historical land use, unknown environmental concerns might be encountered. During mass excavation activities, Ardent will monitor possible emissions of VOCs from soil using a PID calibrated to hexane on a part-time basis. If field observations (stains, odors, or elevated PID readings) are discovered, full-time monitoring will be completed under SCAQMD Rule 1166 as set forth in the SMP.

4.5 Dermal Exposure Hazard

Contact of sufficient duration to cause significant skin absorption of toxic components is judged to be highly unlikely. Repeated daily or prolonged contact with the chemicals mentioned in Subsection 4.2 may potentially defat the skin and, over a long period of time, can lead to irritation and dermatitis. For this reason, wearing protective gloves and clothing as specified in Subsection 5.4 should minimize direct skin contact with chemicals potentially

present. However, if dermal contact does occur, the exposed areas should be washed with soap and water immediately and rinsed thoroughly.

4.6 Explosion and Fire Hazard

Explosion hazards are not expected at the site during the planned operations. However, caution will be taken to minimize sources of ignition. Cigarettes and open flames are prohibited within the restricted access work zone (Subsection 5.3).

4.7 Noise Hazard

Exposure to high levels of noise, both chronic and acute, can lead to different types of reactions. Acute (impulse) noise, such as noise associated with heavy equipment operation, jackhammers, drilling activities, and work performed in the flight path of aircraft, can afflict the operator with a temporary loss of hearing at certain frequencies associated with the equipment being used. Ordinarily, this loss is reversible, and after a short period of time (less than a day) the hearing will return to normal. However, chronic exposure to this noise may eventually cause the hearing acuity to be permanently and irreversibly altered. The change may be subtle and could occur over a period of time.

Permanent noise-induced hearing loss is attributed to the intensity and frequency distribution of the noise, the time pattern and duration of exposure, and individual susceptibility. Sound levels (noise) are measured in decibels using an A-weighting filter (dB [A]). The Threshold Limit Values (TLV) for noise exposure is 85 dBA for an eight-hour duration and 90 dBA for a four-hour duration. It is not expected that the noise level generated during this phase of work will exceed the TLV; however, hearing protection will be readily available on the site and will be mandated at SHSO discretion.

4.8 Heat Stress Hazard

Heat stress occurs when the body produces or absorbs more heat than it is able to dissipate. Heat is produced internally as the result of metabolic activity and increases with body activity or the level of physical work being performed. Heat can be absorbed by the body from ambient air and from the radiant heat of the sun.

The body's ability to absorb heat is therefore affected by factors such as the ambient air temperature and humidity, air density, radiant energy and cloud cover, wind velocity and

airflow, and localized heat generation, such as that from power equipment. The body's ability to dissipate heat to the environment is dependent on factors such as the amount of heat and radiant energy in the ambient environment, exposure to the ambient or radiant heat in that environment, and its own inherent ability to cool itself (perspiration). Exposure to ambient conditions is affected by such factors as wind velocity or airflow, cloud cover or shade, and the type of protective clothing being worn. Its ability to cool itself is affected by its own inherent biovariability.

Any of these factors may contribute to a loss of body fluids and electrolytes, and an increase in body temperature. A significant increase in body temperature can be life threatening and can rapidly become fatal or result in permanent injury. Heat stress may cause any of the following conditions: heat cramps, heat syncope (fainting), heat exhaustion, and/or heat stroke. If one of these conditions is experienced, call emergency service personnel immediately. To help prevent heat stress, it is recommended that liquids be easily available and frequently consumed during the day. The SHSO will monitor workers visually during site work including body core temperature measurements when and if appropriate. Table 3 presents the action levels and appropriate action to be taken regarding body core temperature monitoring.

Table 3 – Action Levels for Heat Stress

Type Measurement	Action Level	Action
Ear insertable core temperature	100.4 degrees Fahrenheit or greater	Remove from work
Ear insertable core temperature	<99 degrees Fahrenheit	Return to work

4.9 Electrical Hazard

Contact with electrical current can cause shock and electrical burns and can be instantly fatal. The potential for exposure to electrical current exists through contact with electrical tools or equipment, generators and electrical control equipment, and overhead and underground power lines. Care must be taken to avoid contact with sources of electricity. Work will cease if lightning is observed or expected to occur.

Frayed electrical cords or electrical cords with damaged plugs shall not be used. Electrical cords shall not be used in proximity to water.

4.9.1 Underground Utilities

Prior to starting soil intrusive activities, all known underground utilities and lines shall be located and marked on the ground and on a site map. Locator services from USA and each utility company whose utility service may intersect the facility shall be requested. Soil intrusive work shall not proceed until all locating activities have been completed and are fully documented in the site records. The initial site safety orientation meeting for all personnel working on-site shall include a review of the underground utility locations and where the site map will be located that shows the positions of any underground utility lines. The site safety orientation shall include a site walkover of each marked utility or line.

If drilling is necessary, each borehole location will be cleared of underground utilities by completing a limited geophysical survey in the location of the borehole. During the performance of work, should personnel encounter a subsurface condition that creates suspicion that there may be an unidentified underground line or utility, such an individual shall immediately cease work, secure his/her equipment, and notify the General Contractor, Program Manager, and Field Coordinator.

4.9.2 Overhead Power Lines

Operation of equipment in the vicinity of overhead power lines shall be in accordance with California Occupational Safety and Health Administration (Cal-OSHA) Electrical Safety Orders. The subcontractor's field supervisors and operators shall take necessary precautions for implementing safe work practices under such conditions. The following information was excerpted from the Cal-OSHA Electrical Safety Orders.

Table 4 indicates the general clearances from electrical lines for personnel and erection, handling, or transportation of tools, machinery, materials, structures, or scaffolds from overhead high-voltage power lines. Table 5 indicates the general clearances for equipment such as drill rigs, cranes, and hoists.

Table 4 – General Clearances Required from Energized Overhead High-Voltage Conductors

Normal Voltage (Phase to Phase)	Minimum Required Clearance (feet)
600 to 50,000	6
50,000 to 345,000	10
345,000 to 750,000	16
750,000 to 1,000,000	20

Table 5 – Boom-Type Lifting or Hoisting Equipment Clearances Required from Energized Overhead High-Voltage Lines

Normal Voltage (Phase to Phase)	Minimum Required Clearance (feet)
600 to 50,000	10
50,000 to 75,000	11
75,000 to 125,000	13
125,000 to 175,000	15
175,000 to 250,000	17
250,000 to 370,000	21
370,000 to 550,000	27
550,000 to 1,000,000	42
Notes: Authority cited: Section 142.3, Labor Code. Reference: Section 142.3, Labor Code.	

4.10 Excavation Site Hazards

The movement of grading equipment, tractors, backhoes, and trucks in the work zone, as it relates to the hazards associated with an excavation site, such as the cave-in of an excavation, requires a high awareness of safety on the part of the equipment operators. The contractors are expected to make sure that all of their operators at the site are experienced in excavations and are aware of the excavation site hazards. The boundary of the site is to be fenced, and movement of unauthorized personnel within the work zone prevented. The boundary of the site is to be clearly posted with the appropriate warning signs. Excavations greater than 4 feet will not be entered.

4.11 Activity Hazard

The principal type of activity hazard expected to be encountered during this operation includes the potential for falls, and adverse contact with tools and equipment. The experience of personnel with this type of equipment and the procedures outlined in this HASP should minimize potential safety hazards of this type. In addition, the safety equipment listed in Subsection 5.4 that is required to be used for this operation should minimize the potential for injury to personnel.

4.12 Heavy Equipment Operations

As heavy equipment operations are to be conducted at the site, all haulage, drilling, and earth moving shall, at a minimum, comply with the requirements set forth in Title 8, California Code of Regulations (CCR) Construction Safety Orders. As a part of the initial site safety orientation meeting (Subsection 5.2), equipment operators and any personnel (including foreman, supervisor, surveyors, grade checkers, etc.) associated with haulage and earth moving activity shall carefully review these regulations and any other site-specific requirements. It is the responsibility of the subcontractor to monitor its personnel for compliance with these regulations and requirements. In particular, the following guidelines are to be followed by those involved with haulage and earth moving.

- Subcontractor-authorized personnel, trained in and familiar with the equipment, its operation, and safety provisions, will perform operations.
- Maintenance and/or adjustments to machinery will not be conducted while the equipment is operating or energized, unless continued operation is necessary in accordance with the machinery manufacturer's written specifications. All repairs will be performed in a designated equipment-repair work zone. Power will be disconnected or engines shut off prior to servicing equipment unless continued operation is necessary in accordance with the machinery manufacturer's written specifications. Power supplies/switches will be clearly labeled as such, to prevent accidental startup. Equipment being repaired will be appropriately blocked and/or secured.
- Only equipment with all guards and safety controls in place are to be permitted by the subcontractor to operate on-site.
- Equipment is to meet all federal, state, and local standards and be mechanically sound and in good condition.
- Operators will perform daily safety inspections and necessary repairs are to be made before equipment is operated. If any equipment is judged to be unsafe during operation, it is to be taken out of service until it is repaired.

- When not in use, keys to equipment are to be removed and kept in a location remote from the equipment.

4.13 Subsurface Earth Work

At a minimum, all excavation activity conducted by contractors shall comply with the requirements set forth in Title 8, CCR, Construction Safety Orders. All bank, grades, and excavation walls shall be sloped to an angle of less than the angle of repose (but at no time at an angle of less than allowed in the regulations for the existing soil conditions) for the type of soil; alternatively, the excavation can be shored in accordance with applicable regulatory requirements. Trenches and pits more than 4 feet deep, and the bases of excavation embankments more than 4 feet high, will be considered hazardous areas, with no entry permitted unless the slope or shoring requirements have been met.

5 GENERAL HEALTH AND SAFETY REQUIREMENTS

5.1 Medical Clearance and Monitoring

All project personnel who may be required to wear respirators must have on file evidence that they have been cleared by a physician to wear a respirator. This information will be provided to Ardent upon request.

5.2 Safety Orientation Meeting

All field personnel must attend a daily safety orientation meeting before commencing the fieldwork. The meeting will be scheduled and conducted by the Program Manager or the Field Coordinator. The meeting will include receipt of the required signed releases by the Field Coordinator.

5.3 Restricted Access Work Zone

A restricted access work zone (a minimum of 25 feet wide when possible) will be maintained around the work areas. Due to site conditions and constraints, it may be necessary to make modifications to the width/circumference of the restricted access zone. The Field Coordinator has the authority to make reasonable adjustments as he/she judges necessary. Protective clothing and equipment, as described below in Subsection 5.4, are to be worn by all personnel working within the restricted access work zone. The purpose of the restricted access work zone is to provide points of ingress and egress for personnel and equipment. The zone is to be demarcated with caution/hazard tape and barricades (or

similar restricting material). The restricted access work zone is to be clearly labeled as such. In addition to the restricted access work zone, a gate should restrict vehicular access to the site when possible.

5.4 Protective Equipment and Clothing

5.4.1 Equipment Required For Field Personnel While Working in the Restricted Access Work Zone

Personnel working within the restricted access work zone are to wear the following equipment unless otherwise specified in writing by the Corporate Health and Safety Manager and/or the Program Manager.

- Hardhat
- Boots (steel-toed)
- Safety glasses
- Gloves (latex and/or nitrile)

Equipment to be Available On-Site

- First Aid Reference Guide
- Earplugs
- Two respirators (National Institute of Occupational Safety and Health/Mine Safety and Health Administration (NIOSH/MSHA)-approved half-mask with organic vapor cartridges)
- PID and calibration gas
- First-aid kit with eye wash
- Fire extinguisher
- Construction tape and barriers to delineate restricted access work zone
- Water and soap for washing
- A vehicle with keys in the ignition and headed in a direction for quick departure for the transport of slightly injured personnel to the hospital must be kept on-site when personnel are working. Severely injured personnel MUST be transported ONLY by paramedics (except as permitted in Subsection 7.1). A copy of the hospital address and route directions from Subsection 7.5 must remain in the vehicle.

5.4.2 Respirator Usage

The Program Manager is responsible for deciding if respiratory protection is required and if the level of respiratory protection used should be more stringent. If a decision

is made to base respirator selection on PID measurements, refer to the table in Subsection 4.3 for critical concentrations. Subsection 6.1 presents organic vapor monitoring frequency and duration.

The conditions in Subsection 5.1 are to be complied with. Cartridges for the respirators must be replaced daily or when breakthrough occurs, whichever occurs first. All individuals intending to wear respirators need to be fit-tested or provide evidence of fit testing.

5.4.3 Buddy System

All field personnel while working in the restricted access work zone during the field activities are to work with another person at the site. The subcontractor's representative can serve as the second person while the work is being conducted in the field. Under no circumstances, other than completion of paper work at the end of the day, are field personnel to work alone at the site while conducting field activities.

6 ORGANIC VAPOR MONITORING

6.1 Exposure Concerns

In addition to the monitoring requirements established by SCAQMD during any excavation work, organic vapor concentrations (as measured by the PID) in the breathing zone (the area nearest to the individual's mouth) of the individual working nearest to the potential vapor source must be monitored during field operations. Monitoring, using the PID, should be conducted at approximate 15-minute intervals, for a sampling duration of approximately 60 seconds while work is being conducted. Occasionally, the monitoring frequency may be modified at the discretion of the Field Coordinator due to changes in field activities. All measurements, as well as the time of day the measurements were collected, must be documented. A form that can be used to document these measurements is presented in Appendix C. Daily field logs can be used to document these measurements also. Refer to Subsection 4.3 for guidelines to judge when respiratory protection is necessary based on PID measurements.

As noted above, grading equipment and backhoes will be used to move large quantities of soil during redevelopment activities. These activities will enhance the likelihood of

producing VOC containing vapors and soil, if present. Based on this information, Ardent will monitor ambient air during both excavation and grading activities.

7 EMERGENCY RESPONSE PROCEDURES

7.1 Physical Injury

In the event of an accident resulting in physical injury, call emergency service personnel immediately and perform first aid commensurate with training and seriousness of the injury. Severely injured personnel are to be transported only by emergency service personnel and/or by ambulance personnel unless a life-threatening condition is judged to exist that must be addressed immediately. If emergency or ambulance personnel transport injured personnel to the hospital, the hospital will be selected at the discretion of the emergency or ambulance personnel. The hospital selected may or may not be the hospital listed in Subsection 7.5 of this document. At the hospital, a physician's attention is mandatory regardless of how serious the injury appears.

The Program Manager is to be notified by the Field Coordinator, as soon after the injury as practical, regarding the nature of the accident. A written report is also to be prepared and submitted by the Field Coordinator to the Program Manager within 24 hours of the accident. If the Field Coordinator is unable to make the report (due to injury), an individual designated by the Program Manager shall make the report.

7.2 Fire, Explosion, and Property Damage

In the event of a fire or explosion, notify the fire department immediately by dialing 911.

The Program Manager is to be notified by the Field Coordinator as soon as practical and a written report prepared within 24 hours of the accident.

In the event of any accident involving serious injury of sufficient magnitude, work at the site shall cease until the Corporate Health and Safety Manager and/or the Program Manager (or a designee) has completed a review of the events and site conditions and has authorized work to resume.

7.3 Emergency Telephone Numbers

Fire Department	911
Police Department	911
Paramedics	911

7.4 Work Site Address

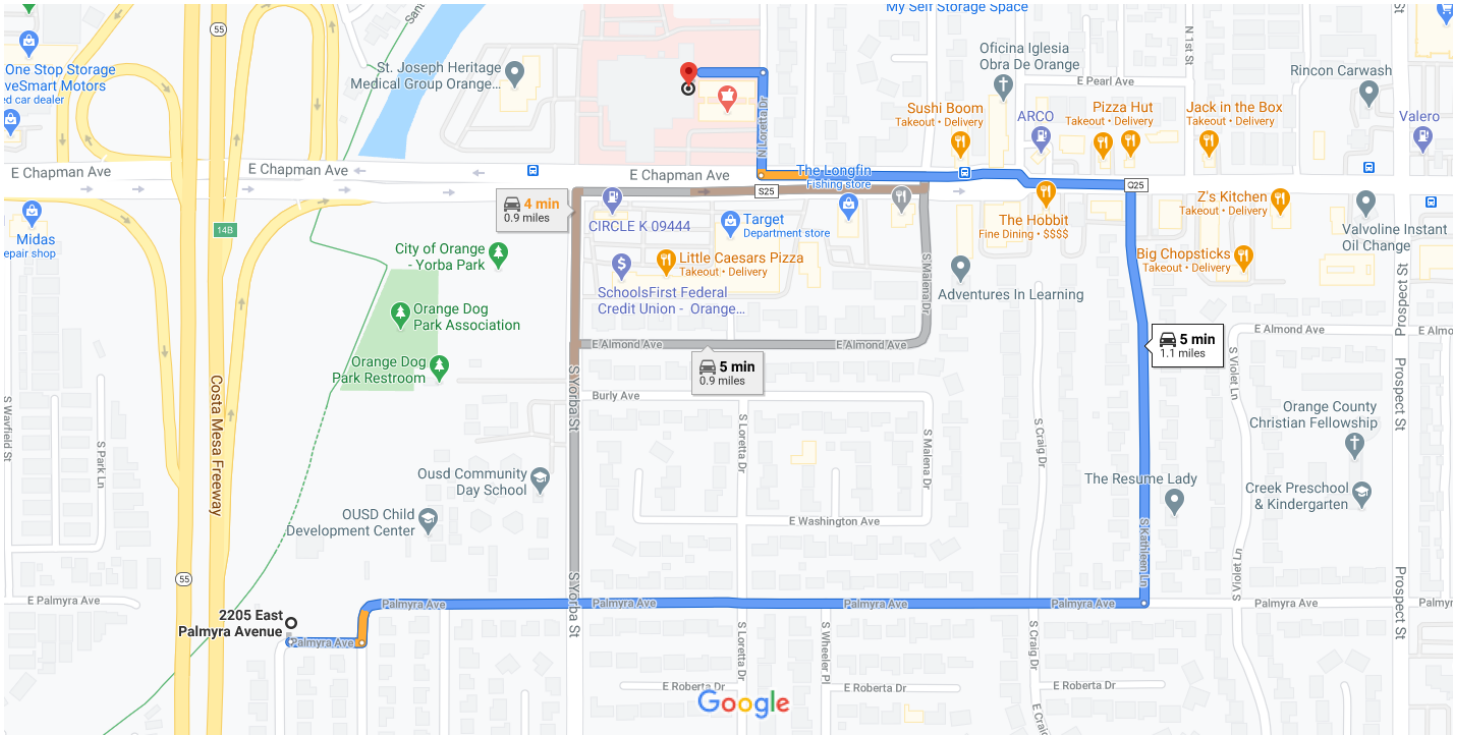
The site is located at 2205 East Palmyra Avenue and 290 South Yorba Street in the city of Orange, California.

7.5 Hospital Address and Route

For hospital routes, see attached map from GoogleMaps.com.

Chapman Global Medical Center
2601 East Chapman Avenue
Orange, California 92869
Telephone: (714) 633-0011

Google Maps 2205 East Palmyra Avenue, Orange, CA to Chapman Global Medical Center Drive 1.1 miles, 5 min



Map data ©2020 Google 200 ft

via E Palmyra Ave Best route	5 min 1.1 miles
via S Yorba St and E Chapman Ave Some traffic, as usual	4 min 0.9 mile
via E Almond Ave	5 min 0.9 mile

Explore Chapman Global Medical Center

Groceries Hotels Gas stations Parking Lots More

APPENDIX A

HEALTH AND SAFETY COMPLIANCE AGREEMENT

Copy:_____

CONTRACTOR HEALTH AND SAFETY COMPLIANCE AGREEMENT

Project Name:_____

I, _____(PRINT NAME), have received a copy of the entire Health and Safety Plan for the above-referenced project. I have read the plan, understand it, and agree to comply with all of the health and safety requirements. I understand that I may be prohibited from working on the project for violating any of the requirements.

I have been approved to wear a respirator by a physician based on medical examination. I have been trained in the appropriate use, care, and storage of respiratory equipment. I have been respirator fit-tested, and I will have my respirator available for use in the field. I understand that I am to use the equipment supplied to me by my employer. I further understand that this equipment is provided solely for my benefit with the intent to minimize my exposure to potentially hazardous conditions. In the event of such usage, I agree to indemnify and hold harmless Contractor and all of its employees from and against any and all losses, demands, claims, liabilities, lawsuits, damages, costs, and expenses arising, in any way, from the use of the equipment.

Visitors will not receive a copy of the Health and Safety Plan but will be required to review it. It is required that visitors be escorted in the restricted access work zone. Visitors must comply with the Contractor escort directions while on-site at all times. Non-compliance with escort directions will not be tolerated, and violators will be requested to leave the site immediately.

Thank you for your cooperation.

_____ _____

Signature Date

Note: This original signed agreement is to be placed in the referenced project file.

ARDENT
ENVIRONMENTAL GROUP, INC.

APPENDIX B

HEALTH AND SAFETY ORIENTATION MEETING ATTENDANCE ROSTER

HEALTH AND SAFETY ORIENTATION MEETING ATTENDANCE ROSTER

The following personnel involved in the field activities have attended a Health and Safety Plan orientation meeting.

By initialing this form, each person acknowledges that he/she has read and understands the indicated, numbered copy of the Health and Safety Plan.

Copy	Name	Company	Date	At-tendees Initial
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				

Meeting Date: _____

Meeting Leader: _____

Project Name: _____

ARDENT ENVIRONMENTAL GROUP, INC.

APPENDIX C

ORGANIC VAPOR MONITORING DOCUMENTATION FORM

ORGANIC VAPOR MONITORING DOCUMENTATION FORM

Contractor:

Address: Page of

Telephone: Fax: Date:

Project: Client:

Address: Location:

Operation Monitored:

Instrument: Model: Serial No.:

Calibration Date: Probe: Settings:

Temp: Rel. Hum: Wind: Indoor: Outdoor:

Interference: Operator:

Sample No	Time	Scale	Setting	Reading	Location	Comments

ARDENT ENVIRONMENTAL GROUP, INC.

APPENDIX B

SCAQMD RULE 1166 VARIOUS SITES PERMIT

South Coast
Air Quality Management District
21865 Copley Drive, Diamond Bar, CA 91765-4178
(909) 396-2000 • www.aqmd.gov

DATE: 01/16/2019

EQUIPMENT LOCATED AT: VARIOUS LOCATIONS IN SCAQMD
CITY OF INDUSTRY,CA 91744

LEGAL OWNER OR OPERATOR CO. ID: 168313
ARDENT ENVIRONMENTAL GROUP, INC.
1827 CAPITAL ST STE 103
CORONA,CA,92880

PERMIT/APPLICATION RENEWAL

PERMIT/ APPL NBR	EQUIPMENT DESCRIPTION	NEXT RENEWAL DATE
BILLING YEAR: 2018		
583555	PLAN RULE 1166-VOC SOIL, VAR LOC	01/16/2020

South Coast Air Quality Management District
21865 Copley Drive, Diamond Bar, CA 91765-4178

COMPLIANCE PLAN

This plan must be renewed annually and is subject to annual renewal fees pursuant to Rule 306 (h).

Plan Issue Date: 4/6/2016 ID 168313

Company: ARDENT ENVIRONMENTAL GROUP, INC.
1827 CAPITAL ST, STE 103
CORONA, CA 92880

Site Location: VARIOUS LOCATIONS IN SCAQMD

Conditions:

The operation under this Rule 1166 has been conditionally approved and is subject to the following conditions:

SECTION I - GENERAL REQUIREMENTS

1. A signed copy of this plan shall be present at each excavation site at all times and shall be made available to SCAQMD personnel upon request.
2. This plan is not valid for the excavation of VOC contaminated soils at landfills or sites used for disposal of refuse or other types of waste.
3. This plan does not allow the treatment of VOC contaminated soil by thermal, chemical, or mechanical processes. Any of the above treatment processes requires a Permit to Operate from the SCAQMD and a site specific Rule 1166 plan.
4. This plan does not allow back-filling of treated VOC contaminated soil. Back-filling of treated VOC contaminated soil may be allowed under a site specific Rule 1166 plan.
5. The total quantity of VOC contaminated soil excavated and handled at each site shall not exceed 2,000 cubic yards. This total includes any VOC contaminated soils excavated from this location under a various location plan within the last twelve (12) calendar months. Excavations involving quantities in excess of 2,000 cubic yards of VOC contaminated soil requires the application submittal and approval of a site specific Rule 1166 excavation plan.
6. For the purposes of Rule 1166 and this plan, soil measured pursuant to Rule 1166 as VOC contaminated soil, is considered as VOC contaminated soil from the time of measurement onward, until the soil is treated pursuant to an approved SCAQMD treatment process.
7. During each step of the process up to and including the removal and disposal process, all precautions and measures shall be taken to minimize the release of VOC, odor and dust. This includes, but is not limited to:
   A. The use of additional plastic sheeting or suppressants on exposed soil surfaces and work areas,
   B. Maintaining paved public streets free of soil deposits, and
   C. Operating such that VOC soil shall not be spread on-site or off-site; and not performing any unnecessary movement or agitation of soil, including the reshaping or relocation of stockpiles, that may cause the uncontrolled evaporation of VOCs into the atmosphere.
8. The SCAQMD shall be immediately notified of any complaints received as a result of activities conducted under this plan. Such notification shall include the nature of the complaints, number of complainants, and the action taken by the plan holder to mitigate the source of the complaint.

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SECTION II - PRIOR TO EXCAVATION

9. At least 24 hours prior to commencing excavation or grading of soil at the site, the Executive Officer or designee shall be notified of the excavation by fax using a form approved by the Executive Officer, which is fully completed and includes the name of the company performing the excavation and the application number listed on this mitigation plan. The notification shall be made by faxing the notification form at (909) 396-3342. Fax notifications will receive a reference number by return fax or can be obtained referencing the fax notification by phone, Tuesday through Friday during business hours, at (909) 396-2326. The reference number shall be retained as proof of compliance with this requirement.

Reference Number: Notification Date:

10. Complete verification information in Attachment section and obtain required signatures, prior to commencing excavation.

SECTION III - MONITORING

11. All monitoring shall be conducted by trained personnel who are proficient in the use of the hydrocarbon monitor selected for use at this site.

12. During the excavation process, an organic vapor analyzer (OVA) shall be on site at all times. The OVA shall be maintained in good working order at all times and shall be calibrated by the manufacturer at least once every three months. The calibration of the OVA shall be verified using certified calibration gas at the beginning of each working day with the procedures specified by the manufacturer. If a calibration gas other than hexane is used, each measured reading shall be correlated to and expressed as hexane, using equivalency factors provided by the manufacturer.

13. All monitoring shall be conducted at a distance no more than 3 inches above the soil surface using an OVA described in condition no. 12 above. Monitoring shall be conducted at a minimum frequency of one reading for every two cubic yards of soil excavated, not to exceed fifteen minutes between readings. All readings shall be taken no later than three (3) minutes after each load of soil is excavated.

14. Written records of OVA monitoring and calibrations required above shall be kept in a format approved by the SCAQMD. The approved format is included in the Attachment section (total 6 pages). The certification on all records shall be signed and dated on the day the measurements are observed.

15. Upon detection of VOC contaminated soil (readings 50 PPMV or greater), the Executive Officer or designee shall be notified within 24 hours of the first detection of VOC contamination. The notification shall be made by faxing the notification form to (909) 396-3342 or calling (909) 396-2326. A reference number will be faxed back or will be issued when the phone notification is received. All phone notifications shall be followed by mailing the notification form to the District postmarked within 48 hours. The reference number will be retained as proof of compliance with this requirement.

Reference Number: Notification Date:

SECTION IV - HANDLING

16. If the OVA measurement is greater than 50 PPMV but less than 1000 PPMV

    A. The affected work area and load of soil shall be sprayed with water and/or approved vapor suppressant.

    B. Contaminated soil in stockpiles shall be covered with plastic sheeting which overlap a minimum of twenty-four inches and are secured so that no portion of the contaminated soil is exposed to the atmosphere. In the course of handling the stockpile, only the working face of the stockpile may be uncovered.

17. If the soil OVA measurement equals or is greater than 1000 PPMV, notify the District immediately or within one hour of detection, and

    A. The affected soil and working area shall be immediately sprayed with water or an approved vapor suppressant, and either:

    i. The contaminated soil excavated shall be immediately placed in SCAQMD approved sealed containers equipped with vapor tight lids, or,

    ii. The soil shall be directly loaded in trucks, sprayed with additional water or approved vapor suppressants, covered, and transported immediately off site to an approved treatment facility, or,

    B. Handled by alternative storage methods with prior written approval from the SCAQMD

18. All VOC contaminated soil below 1000 PPMV shall be stockpiled, covered with plastic sheeting, and stored separately from non-VOC contaminated soil, or immediately transported to a treatment facility

SECTION V - STORAGE

19. A stockpile shall not contain more than 400 cubic yards of soil.

20. During excavation, the only exposed VOC contaminated soil shall be restricted to the immediate working area of the site or stockpile. All other portions of the stockpile shall be covered with plastic sheeting, with seams, which overlap a minimum of twenty-four inches and are secured with duct tape. Any exposed VOC contaminated soil surfaces (work face) shall be kept moist with water or other approved suppressants at all times, and shall be re-covered during periods of inactivity longer than one (1) hour. At the end of each working day, all stockpiles shall be completely covered and securely anchored to prevent any exposure of soil to the atmosphere.

21. Once covered with plastic sheeting, stockpiles shall remain undisturbed until removed from site.

22. Daily inspections shall be conducted of all covered VOC contaminated stockpiles to ensure the integrity of the plastic cover. Such inspections shall include a visual inspection of all seams and plastic cover surfaces. Any holes, tears or any other potential sources of fugitive VOC emissions shall be repaired immediately. Daily records shall be maintained to ensure compliance with this condition.

SECTION VI - SOIL REMOVAL AND DISPOSAL

23. All excavated VOC contaminated soil shall be removed from the site within thirty (30) days of its excavation.

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24. All VOC contaminated soil removed from the site shall comply with the following:

    A. Be transported to an approved treatment/disposal facility. It shall be the responsibility of the plan holder to ensure that the receiving treatment/disposal facility has received approval from the appropriate environmental oversight agencies to handle and treat VOC contaminated soils.

    B. Prior to covering/tarping, loaded contaminated soil shall be treated by spraying with water or dust suppressants.

    C. The truck or trailer shall be completely covered/tarped prior to leaving the site to prevent particulate emissions to the atmosphere.

    D. When loading is completed and during transportation, no excavated material shall extend above the sides or rear of the truck or trailer.

    E. The exterior of the trucks (including the tires) shall be cleaned off prior to the trucks leaving the excavation site.

SECTION VII - RECORDS AND REPORTING

25. A written report shall be provided to the SCAQMD within 30 days of initial detection of contaminated soil, which includes the following information:

    A. The status of the excavation pit, and any VOC contaminated soil remaining on site.

    B. A brief summary indicating if additional clean up efforts are necessary, the additional quantity of VOC contaminated soils to be excavated and the projected schedule of the excavation.

26. Records of disposal shall be maintained for all VOC contaminated soil removed from this site. Such records shall be clearly labeled SCAQMD RULE 1166-VOC CONTAMINATED SOIL and shall include the identification and the location of, 1) the generator, 2) transporter and 3) receiving facility. In addition, such records shall be signed and dated by each of the above parties indicating receipt or relinquishment of the VOC contaminated soil at the time custody is transferred.

27. Records of disposal of VOC contaminated soil shall be maintained on site during the excavation and later maintained for a period of two (2) years. The records shall be made available to SCAQMD personnel upon request.

28. Within thirty (30) days after the excavation at the site is completed, the written records under conditions no. 14, 22, and 27 shall be submitted to the SCAQMD at the following address:

South Coast Air Quality Mgmt District

Engineering & Compliance division

Toxics & Waste management unit

(Rule 1166 Compliance)

ORIGINAL

21865 E. Copley Dr.

Diamond Bar, CA. 91765-4182

29. Once issued, this plan is subject to further review by the SCAQMD and may be revoked if excavation activities are found in violation of plan conditions or SCAQMD's Rules and Regulations. Failure to comply with one or more of the conditions contained within this plan constitutes a violation of Rules 221 and 1166.

NOTICE

This plan does not authorize the emission of air contaminants in excess of those allowed by Division 26 of the Health and Safety Code of the State of California or the applicable Rules and Regulations of the South Coast Air Quality Management District (SCAQMD). This plan cannot be considered as permission to violate existing laws, ordinances, regulations or statutes of other government agencies.

A copy of this plan shall be displayed in the vicinity of the equipment subject to this plan.

Executive Officer

Dorris M Bailey

By Dorris M. Bailey/GR01
4/6/2016

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ATTACHMENT SECTION

VERIFICATION AND SIGNATURE

THIS PLAN IS NOT VALID UNTIL ALL PARTIES HAVE REVIEWED AND SIGNED THE VERIFICATION STATEMENT BELOW.

Site Name		Type of Business
Address	City	Zip
Responsible Party (Owner/Operator)		Phone
Address	City	Zip

I CERTIFY THAT I HAVE REVIEWED AND UNDERSTAND THE CONDITIONS CONTAINED WITHIN THIS PLAN. IN SIGNING BELOW, I ACKNOWLEDGE THAT UNDER THE PROVISIONS OF RULE 1166, I CAN BE HELD RESPONSIBLE FOR THE REQUIREMENTS SET FORTH IN THIS PLAN.

Responsible Party	Responsible Party Signature	Date Signed
General Contractor	General Contractor Signature	Date Signed
Excavation Contractor	Excavation Contractor Signature	Date Signed
Environmental Consultant	Environmental Consultant Signature	Date Signed

DEFINITIONS

Excavation	Is the process of digging out and removing materials including any material necessary to that process such as the digging out and removal of asphalt or concrete necessary to expose, dig out and remove known VOC contaminated soil.
Organic Vapor Analyzer (OVA)	For the purposes of this plan, an OVA is an hydrocarbon monitor utilizing flame ionization, photo ionization or other analytical methods complying with 40 CFR PART 60 APPENDIX A, EPA METHOD 21 SECTION 3, "DETERMINATION OF VOLATILE ORGANIC COMPOUND LEAKS, MONITORING INSTRUMENT SPECIFICATIONS. The monitor shall be capable of being calibrated using hexane at a range of 0 parts per million by volume (PPMV) to 50 PPMV, and at a detection range of at least 30 PPMV to 1100 PPMV
Responsible Party	For the purposes of this plan, Responsible Party is the party financially responsible for initiating the excavation. This may include the property owner or the tank operator. This excludes contractors working for the property owner or operator, and any other party that lacks the direct authority to immediately treat all VOC contaminated soils generated at the excavation site.
VOC Contaminated Soil	Is soil that registers a concentration of 50 PPM or greater of volatile organic compounds as measured before suppression materials have been applied and at a distance of no more than three inches from the surface of the excavated soil with an organic vapor analyzer calibrated with hexane.
Volatile Organic Compound (VOC)	Is any volatile compound of carbon, excluding methane, carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, ammonium

carbonate, and exempt compounds. Exempt compounds areas defined in Rule 102 – Definitions of Terms.

Once issued, this plan is subject to further review by the SCAQMD and may be revoked if excavation activities are found in violation of plan conditions or SCAQMD's Rules and Regulations. Failure to comply with one or more of the conditions contained within this plan constitutes a violation of Rules 221 and 1166.

Other governmental agencies may require approval before any excavation begins. It shall be the responsibility of the applicant to obtain that approval. The South Coast Air Quality Management District shall not be responsible or liable for any losses because of measures required or taken pursuant to the requirements of this approved Rule 1166 Contaminated Soil Mitigation Plan.

Questions regarding this plan should be directed to John Anderson, at (909) 396-2499.

Rule 1166 Soil Monitoring Records

Company Name Ardent Environmental Group, Inc. 1827 Capital Street, Suite 103 Corona, CA 92880	**Facility/Site Information**
Reference No(s).	

Plan #: 583555 **I.D.#: 168313**

Monitor Information Conversion to Hexane	**Calibration Data**	**Monitoring Personnel**	**Excavation Summary** (Upon completion of each page)	
Brand:	Gas:	Name:	Total Cubic Yds (This page)	
Model:	Date	Company:	Total Cubic Yds (To date)	
Type	By	Phone:	Removed from Site (To date)	

Time	VOC Concentration (PPMV) @ Excavated Load			Comment	Time	VOC Concentration (PPMV)@ Excavated Load			Comment
Every 15 min.	Reading	Hexane Factor	Adjusted Reading		Every 15 min.	Reading	Hexane Factor	Adjusted Reading	

I certify that the information contained in the above document is true and correct. I further certify that the above listed hydrocarbon monitor was operated in a manner consistent with the manufacturer's specifications and the conditions specified within this plan. In addition, I certify that the above readings represent the actual measurements I observed and recorded during the excavation process.

SIGNATURE:_____ DATE:_____

South Coast Air Quality Management District
21865 Copley Drive, Diamond Bar, CA 91765
1-800-CUT-SMOG www.aqmd.gov

IMPORTANT NOTICE
Rules 203, 1149 and 1166 Fees

TO COMPANIES AND CONTRACTORS THAT:

Operate portable soil/vapor extraction units at a location for 5 days or more (Rule 203)
Degas storage tanks known/suspected to contain Volatile Organic Compounds (VOC) (Rule 1149)
Remove tanks or transfer piping known/suspected to contain VOC (Rule 1166)
Handle, excavate, grade, monitor or treat soil known/suspected to contain VOC (Rule 1166)

SCAQMD Regulation III - Fee amendments for the Fiscal Years notification fee are as shown below. All required notifications for soil vapor extraction projects, tank degassing projects, and excavation of VOC soil projects, are subject to the new fee per Rule 301(x). See fee schedule below:

Fiscal Year	Notification Fee*
2014-2015	$57.18
2015-2016	$57.98

The fee is per notification and an additional service charge fee of $25.00 may apply for any returned check per Rule 313(i).

Initial notifications must be faxed to 909-396-3342 and the original notification and fee must be postmarked within 48 hours of the fax time.

SCAQMD recommends mailing your notification to save time, money, reduce traffic, conserve energy use and avoid air pollution. ***For your convenience please mail all notifications and fees to the following mailing address:***

SCAQMD R203/1149/1166 Notifications,
FILE # 55641,
Los Angeles, CA 90074-5641

Notifications should be completed, signed, mailed and the fee paid by the contractor performing the project. Notifications submitted without a fee are deemed incomplete and they will be returned to sender and referred to the Air Toxics Compliance Unit.

Rules 203, 1149 and 1166 notification forms, instructions, and information can be obtained from the SCAQMD web site at **http://www.aqmd.gov**

The forms are located at our home page, click on **Business / Compliance Program / Recordkeeping and Reporting Forms or the Rule link below.**

203 Soil Vapor Extraction (SVE) Notification Form
1166 VOC Emissions From Soil Excavation Notification Form
1149 Storage Tank Degassing Notification Form

For any Rule 203/1149/1166 questions call the above Rules Hot Line at (909) 396-2326.

*NOTE: Rule 304(e) requires an owner operator to pay for analysis of SCAQMD field samples showing non compliance. Please consult the current Rule 301 for the correct Notification Fee prior to sending the payment.

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
SVE Operation (R203) or Rule 1166 NOTIFICATION FORM

Use this form to notify of operation of a Soil Vapor Extraction unit (SVE); or prior to Excavating, Handling, Monitoring, Treating known or suspect Volatile Organic Compounds (VOC) contaminated soil per R1166. See instructions on the back of this form. For questions check our website at www.aqmd.gov or call the Hotline at (909) 396-2326.

FAX this form to 909-396-3342 and within 48 hours of the fax, MAIL the original form and fee to:
SCAQMD - 1166/203 Notifications, File # 55641, Los Angeles, CA 90074-5641

This form will be faxed back to you with a **REFERENCE** number if you provide a **FAXBACK** # here:_____

AQMD USE ONLY	RECEIVED BY	POSTMARK	REFERENCE #	
COMPLETED BY		Company	Phone #	
Date	Check #	Amount	Project #	
NOTIFICATION TYPE (check one only)	Original (Initial) ☐	Revision (prior reference #) ☐	Cancellation (prior reference #) ☐	
PROJECT TYPE (check one only)	[1] Soil Vapor Extraction (SVE) ☐	[2] R1166 Treating Contaminated Soil ☐	[2] R1166 Excavation of VOC Soil/Tank ☐	[2] R1166 Reporting > 50 ppm VOC Soil ☐ / [2] R1166 Reporting > 1000 ppm VOC Soil ☐
[1] SVE Permit issued to (name):			[1] SVE Permit Number:	
[1] SVE Distance to nearest sensitive receptor in feet (see your permit condition requirements):				
[2] R1166 Mitigation Plan issued to (name):			[2]R1166 Plan Number:	
[2] R1166 - Date & time of VOC > 50 or 1000 ppm exceedance:			Highest VOC reading in ppm:	
PROJECT DATES	START	END	WORK SHIFT day ☐	swing ☐ night ☐
SITE CONTRACTOR INFORMATION	AQMD ID #	CSLB License #	Phone #	
Name		Address		
City	Zip	Site supv name & phone #		
SITE INFORMATION	Site Name		Site AQMD ID #	
Site Address			Cross Street	
Site City	Zip	Site contact name & phone #		

TANK INFORMATION	# OF TANKS	EACH	CAPACITY (gal)	MATERIAL STORED IN TANK	ABOVE GROUND? (Y/N)
		@			
		@			
Example	*3 tanks*	@	*10,000*	*Gasoline*	*no*

INFORMATION CERTIFICATION	I certify that the above information is complete and accurate		
Company Name	Print Name	Signature	Date
COMMENTS			

Revised 01/20/2011

Print Reset

Rule 203 and Rule 1166 Form Notification Instructions

Use this form to notify of operation of a Soil Vapor Extraction unit (SVE) at any site for more than 5 days per permit condition (R203); or for notifying about R1166 projects prior to excavating soil that is known or suspected to contain Volatile Organic Compounds (VOC), VOC tank excavation, discovering the presence of > 50 ppm and 1000 ppm VOC contaminated soil during soil excavation, or to notify of onsite VOC contaminated soil mitigation or treating.
For questions check our website at **www.aqmd.gov** or call the Hotline at **(909) 396-2326**

NOTIFICATION FEES: Per Rule 301(x) any person required to submit a notification per Rule 1166 projects or Rule 203 - Soil Vapor Extraction projects must pay a notification fee per notification.

FAX all notifications to **(909) 396-3342** and then ***MAIL*** the form and fee within 48 hours of fax to:

SCAQMD Rule 1166 / 203 Notifications, File # 55641, Los Angeles, CA 90074-5641

Notifications must include the following *MANDATORY* information:

Faxback # - Provide your fax # at the top of the Notification Form if you want a **Reference** # faxed back to you.

Notification Type - *CIRCLE the type of Notification.* **Original** is for new or initial Notifications. **Revisions** are for updating information on notifications in which the project End Date has not expired. Provide the most recent prior Reference # issued for **Revisions or Cancellations.**

Project Type - *CIRCLE the type of work* you are submitting a notification for. A separate notification and fee is required for each type of work selected.

Mitigation Plan/Permit - Each Project Type requires a valid R1166 Mitigation Plan ***or*** SVE Permit # (*important*).

Site Contractor Information - Provide the information for the actual contractor ***doing the work***. The AQMD ID #, also known as Company or Facility ID #, can be found on the contractor's AQMD Mitigation Plan, Permits or invoices.

Site Information - Provide the site name and complete address. Include the street number and name, city, zip code, and nearest cross street. Give more detailed directions for site(s) difficult to locate.

Project Dates - Provide the project Start and End Dates. Any changes will require a Revision notification.

Tank Information - For R1166 tank excavation specify the tank capacity, the VOC material stored in the tank, and if the tank is above ground (a/g) or underground (u/g).

Information Certification - The notification must be signed and dated by the contractor doing the work or authorized representative to confirm that the information provided is complete and accurate.

SOIL/TANK EXCAVATION NOTIFICATION Rule 1166(c)(1)(B) **Notify 24 hours prior of intent to *Excavate* known** or suspected VOC storage and/or transfer equipment (includes diesel and waste oil tanks); or ***handling*** known or suspected VOC contaminated soil. **NOTE:** Soil excavation > 5,000 cubic yards may require a R403 Fugitive Dust Plan.

DETECTING/FINDING VOC SOIL NOTIFICATION - Rule 1166(c)(1)(D)(ii) **Notify of finding VOC contaminated soil**

- within **1 hour** of detecting VOC greater than **1000 ppm***
- within **24 hours** of detecting VOC greater than **50 ppm**
- within **1 hour** of an excavation due to a breakdown requiring a Rule 430 notification to SCAQMD

EMERGENCY NOTIFICATION Rule 1166(c)(1)(B) **Notify prior to start work of any incident declared an emergency by** an authorized agency requiring immediate tank removal/repairs or excavating/handling known or suspected VOC soil:

- **Call** 1-800-CUT-SMOG prior to excavating or fax the emergency notification to 909-396-3342 and
- **Mail** the notification within 48 hours after the excavation including the agency Order or Declaration.

SOIL VAPOR EXTRACTION NOTIFICATION (SVE - Rule 203 *) **Notify upon the 5th day after operating at a new site:** Notifying of ***start-up*** **or** ***testing*** of operation of portable Soil Vapor Extraction equipment lasting 5 days or more. Provide the distance in feet to the nearest sensitive receptor ***if*** the site is located less than ¼ mile from any Long-Term Health Care Facility, Rehabilitation Center, Convalescent Center, Retirement Home, Residence, School, Playground, Child Care Center or Athletic Facility (* *See your SVE permit condition requirements*).

MITIGATION/TREATING VOC SOIL NOTIFICATION (Rule 203 *) **Notify per Permit condition requirements when:** Notifying of on-site ***mitigation*** or ***treating*** of VOC contaminated soil (* *See your Permit condition requirements*).

APPENDIX C

SCAQMD RULE 402 AND 403

(Adopted May 7, 1976)

RULE 402. NUISANCE

A person shall not discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property.

The provisions of this rule shall not apply to odors emanating from agricultural operations necessary for the growing of crops or the raising of fowl or animals.

(Adopted May 7, 1976) (Amended November 6, 1992)
(Amended July 9, 1993) (Amended February 14, 1997)
(Amended December 11, 1998)(Amended April 2, 2004)
(Amended June 3, 2005)

RULE 403. FUGITIVE DUST

(a) Purpose

The purpose of this Rule is to reduce the amount of particulate matter entrained in the ambient air as a result of anthropogenic (man-made) fugitive dust sources by requiring actions to prevent, reduce or mitigate fugitive dust emissions.

(b) Applicability

The provisions of this Rule shall apply to any activity or man-made condition capable of generating fugitive dust.

(c) Definitions

(1) ACTIVE OPERATIONS means any source capable of generating fugitive dust, including, but not limited to, earth-moving activities, construction/demolition activities, disturbed surface area, or heavy- and light-duty vehicular movement.

(2) AGGREGATE-RELATED PLANTS are defined as facilities that produce and / or mix sand and gravel and crushed stone.

(3) AGRICULTURAL HANDBOOK means the region-specific guidance document that has been approved by the Governing Board or hereafter approved by the Executive Officer and the U.S. EPA. For the South Coast Air Basin, the Board-approved region-specific guidance document is the Rule 403 Agricultural Handbook dated December 1998. For the Coachella Valley, the Board-approved region-specific guidance document is the Rule 403 Coachella Valley Agricultural Handbook dated April 2, 2004.

(4) ANEMOMETERS are devices used to measure wind speed and direction in accordance with the performance standards, and maintenance and calibration criteria as contained in the most recent Rule 403 Implementation Handbook.

(5) BEST AVAILABLE CONTROL MEASURES means fugitive dust control actions that are set forth in Table 1 of this Rule.

(6) BULK MATERIAL is sand, gravel, soil, aggregate material less than two inches in length or diameter, and other organic or inorganic particulate matter.

(7) CEMENT MANUFACTURING FACILITY is any facility that has a cement kiln at the facility.

(8) CHEMICAL STABILIZERS are any non-toxic chemical dust suppressant which must not be used if prohibited for use by the Regional Water Quality Control Boards, the California Air Resources Board, the U.S. Environmental Protection Agency (U.S. EPA), or any applicable law, rule or regulation. The chemical stabilizers shall meet any specifications, criteria, or tests required by any federal, state, or local water agency. Unless otherwise indicated, the use of a non-toxic chemical stabilizer shall be of sufficient concentration and application frequency to maintain a stabilized surface.

(9) COMMERCIAL POULTRY RANCH means any building, structure, enclosure, or premises where more than 100 fowl are kept or maintained for the primary purpose of producing eggs or meat for sale or other distribution.

(10) CONFINED ANIMAL FACILITY means a source or group of sources of air pollution at an agricultural source for the raising of 3,360 or more fowl or 50 or more animals, including but not limited to, any structure, building, installation, farm, corral, coop, feed storage area, milking parlor, or system for the collection, storage, or distribution of solid and liquid manure; if domesticated animals, including horses, sheep, goats, swine, beef cattle, rabbits, chickens, turkeys, or ducks are corralled, penned, or otherwise caused to remain in restricted areas for commercial agricultural purposes and feeding is by means other than grazing.

(11) CONSTRUCTION/DEMOLITION ACTIVITIES means any on-site mechanical activities conducted in preparation of, or related to, the building, alteration, rehabilitation, demolition or improvement of property, including, but not limited to the following activities: grading, excavation, loading, crushing, cutting, planing, shaping or ground breaking.

(12) CONTRACTOR means any person who has a contractual arrangement to conduct an active operation for another person.

(13) DAIRY FARM is an operation on a property, or set of properties that are contiguous or separated only by a public right-of-way, that raises cows or

produces milk from cows for the purpose of making a profit or for a livelihood. Heifer and calf farms are dairy farms.

(14) DISTURBED SURFACE AREA means a portion of the earth's surface which has been physically moved, uncovered, destabilized, or otherwise modified from its undisturbed natural soil condition, thereby increasing the potential for emission of fugitive dust. This definition excludes those areas which have:

(A) been restored to a natural state, such that the vegetative ground cover and soil characteristics are similar to adjacent or nearby natural conditions;

(B) been paved or otherwise covered by a permanent structure; or

(C) sustained a vegetative ground cover of at least 70 percent of the native cover for a particular area for at least 30 days.

(15) DUST SUPPRESSANTS are water, hygroscopic materials, or non-toxic chemical stabilizers used as a treatment material to reduce fugitive dust emissions.

(16) EARTH-MOVING ACTIVITIES means the use of any equipment for any activity where soil is being moved or uncovered, and shall include, but not be limited to the following: grading, earth cutting and filling operations, loading or unloading of dirt or bulk materials, adding to or removing from open storage piles of bulk materials, landfill operations, weed abatement through disking, and soil mulching.

(17) DUST CONTROL SUPERVISOR means a person with the authority to expeditiously employ sufficient dust mitigation measures to ensure compliance with all Rule 403 requirements at an active operation.

(18) FUGITIVE DUST means any solid particulate matter that becomes airborne, other than that emitted from an exhaust stack, directly or indirectly as a result of the activities of any person.

(19) HIGH WIND CONDITIONS means that instantaneous wind speeds exceed 25 miles per hour.

(20) INACTIVE DISTURBED SURFACE AREA means any disturbed surface area upon which active operations have not occurred or are not expected to occur for a period of 20 consecutive days.

(21) LARGE OPERATIONS means any active operations on property which contains 50 or more acres of disturbed surface area; or any earth-moving operation with a daily earth-moving or throughput volume of 3,850 cubic

meters (5,000 cubic yards) or more three times during the most recent 365-day period.

(22) OPEN STORAGE PILE is any accumulation of bulk material, which is not fully enclosed, covered or chemically stabilized, and which attains a height of three feet or more and a total surface area of 150 or more square feet.

(23) PARTICULATE MATTER means any material, except uncombined water, which exists in a finely divided form as a liquid or solid at standard conditions.

(24) PAVED ROAD means a public or private improved street, highway, alley, public way, or easement that is covered by typical roadway materials, but excluding access roadways that connect a facility with a public paved roadway and are not open to through traffic. Public paved roads are those open to public access and that are owned by any federal, state, county, municipal or any other governmental or quasi-governmental agencies. Private paved roads are any paved roads not defined as public.

(25) PM_{10} means particulate matter with an aerodynamic diameter smaller than or equal to 10 microns as measured by the applicable State and Federal reference test methods.

(26) PROPERTY LINE means the boundaries of an area in which either a person causing the emission or a person allowing the emission has the legal use or possession of the property. Where such property is divided into one or more sub-tenancies, the property line(s) shall refer to the boundaries dividing the areas of all sub-tenancies.

(27) RULE 403 IMPLEMENTATION HANDBOOK means a guidance document that has been approved by the Governing Board on April 2, 2004 or hereafter approved by the Executive Officer and the U.S. EPA.

(28) SERVICE ROADS are paved or unpaved roads that are used by one or more public agencies for inspection or maintenance of infrastructure and which are not typically used for construction-related activity.

(29) SIMULTANEOUS SAMPLING means the operation of two PM_{10} samplers in such a manner that one sampler is started within five minutes of the other, and each sampler is operated for a consecutive period which must be not less than 290 minutes and not more than 310 minutes.

(30) SOUTH COAST AIR BASIN means the non-desert portions of Los Angeles, Riverside, and San Bernardino counties and all of Orange

County as defined in California Code of Regulations, Title 17, Section 60104. The area is bounded on the west by the Pacific Ocean, on the north and east by the San Gabriel, San Bernardino, and San Jacinto Mountains, and on the south by the San Diego county line.

(31) STABILIZED SURFACE means any previously disturbed surface area or open storage pile which, through the application of dust suppressants, shows visual or other evidence of surface crusting and is resistant to wind-driven fugitive dust and is demonstrated to be stabilized. Stabilization can be demonstrated by one or more of the applicable test methods contained in the Rule 403 Implementation Handbook.

(32) TRACK-OUT means any bulk material that adheres to and agglomerates on the exterior surface of motor vehicles, haul trucks, and equipment (including tires) that have been released onto a paved road and can be removed by a vacuum sweeper or a broom sweeper under normal operating conditions.

(33) TYPICAL ROADWAY MATERIALS means concrete, asphaltic concrete, recycled asphalt, asphalt, or any other material of equivalent performance as determined by the Executive Officer, and the U.S. EPA.

(34) UNPAVED ROADS means any unsealed or unpaved roads, equipment paths, or travel ways that are not covered by typical roadway materials. Public unpaved roads are any unpaved roadway owned by federal, state, county, municipal or other governmental or quasi-governmental agencies. Private unpaved roads are all other unpaved roadways not defined as public.

(35) VISIBLE ROADWAY DUST means any sand, soil, dirt, or other solid particulate matter which is visible upon paved road surfaces and which can be removed by a vacuum sweeper or a broom sweeper under normal operating conditions.

(36) WIND-DRIVEN FUGITIVE DUST means visible emissions from any disturbed surface area which is generated by wind action alone.

(37) WIND GUST is the maximum instantaneous wind speed as measured by an anemometer.

(d) Requirements

(1) No person shall cause or allow the emissions of fugitive dust from any active operation, open storage pile, or disturbed surface area such that:

(A) the dust remains visible in the atmosphere beyond the property line of the emission source; or

(B) the dust emission exceeds 20 percent opacity (as determined by the appropriate test method included in the Rule 403 Implementation Handbook), if the dust emission is the result of movement of a motorized vehicle.

(2) No person shall conduct active operations without utilizing the applicable best available control measures included in Table 1 of this Rule to minimize fugitive dust emissions from each fugitive dust source type within the active operation.

(3) No person shall cause or allow PM_{10} levels to exceed 50 micrograms per cubic meter when determined, by simultaneous sampling, as the difference between upwind and downwind samples collected on high-volume particulate matter samplers or other U.S. EPA-approved equivalent method for PM_{10} monitoring. If sampling is conducted, samplers shall be:

(A) Operated, maintained, and calibrated in accordance with 40 Code of Federal Regulations (CFR), Part 50, Appendix J, or appropriate U.S. EPA-published documents for U.S. EPA-approved equivalent method(s) for PM_{10}.

(B) Reasonably placed upwind and downwind of key activity areas and as close to the property line as feasible, such that other sources of fugitive dust between the sampler and the property line are minimized.

(4) No person shall allow track-out to extend 25 feet or more in cumulative length from the point of origin from an active operation. Notwithstanding the preceding, all track-out from an active operation shall be removed at the conclusion of each workday or evening shift.

(5) No person shall conduct an active operation with a disturbed surface area of five or more acres, or with a daily import or export of 100 cubic yards or more of bulk material without utilizing at least one of the measures listed in subparagraphs (d)(5)(A) through (d)(5)(E) at each vehicle egress from the site to a paved public road.

(A) Install a pad consisting of washed gravel (minimum-size: one inch) maintained in a clean condition to a depth of at least six inches and extending at least 30 feet wide and at least 50 feet long.

(B) Pave the surface extending at least 100 feet and at least 20 feet wide.

(C) Utilize a wheel shaker/wheel spreading device consisting of raised dividers (rails, pipe, or grates) at least 24 feet long and 10 feet wide to remove bulk material from tires and vehicle undercarriages before vehicles exit the site.

(D) Install and utilize a wheel washing system to remove bulk material from tires and vehicle undercarriages before vehicles exit the site.

(E) Any other control measures approved by the Executive Officer and the U.S. EPA as equivalent to the actions specified in subparagraphs (d)(5)(A) through (d)(5)(D).

(6) Beginning January 1, 2006, any person who operates or authorizes the operation of a confined animal facility subject to this Rule shall implement the applicable conservation management practices specified in Table 4 of this Rule.

(e) Additional Requirements for Large Operations

(1) Any person who conducts or authorizes the conducting of a large operation subject to this Rule shall implement the applicable actions specified in Table 2 of this Rule at all times and shall implement the applicable actions specified in Table 3 of this Rule when the applicable performance standards can not be met through use of Table 2 actions; and shall:

(A) submit a fully executed Large Operation Notification (Form 403 N) to the Executive Officer within 7 days of qualifying as a large operation;

(B) include, as part of the notification, the name(s), address(es), and phone number(s) of the person(s) responsible for the submittal, and a description of the operation(s), including a map depicting the location of the site;

(C) maintain daily records to document the specific dust control actions taken, maintain such records for a period of not less than three years; and make such records available to the Executive Officer upon request;

(D) install and maintain project signage with project contact signage that meets the minimum standards of the Rule 403 Implementation Handbook, prior to initiating any earthmoving activities;

(E) identify a dust control supervisor that:

(i) is employed by or contracted with the property owner or developer;

(ii) is on the site or available on-site within 30 minutes during working hours;

(iii) has the authority to expeditiously employ sufficient dust mitigation measures to ensure compliance with all Rule requirements;

(iv) has completed the AQMD Fugitive Dust Control Class and has been issued a valid Certificate of Completion for the class; and

(F) notify the Executive Officer in writing within 30 days after the site no longer qualifies as a large operation as defined by paragraph (c)(18).

(2) Any Large Operation Notification submitted to the Executive Officer or AQMD-approved dust control plan shall be valid for a period of one year from the date of written acceptance by the Executive Officer. Any Large Operation Notification accepted pursuant to paragraph (e)(1), excluding those submitted by aggregate-related plants and cement manufacturing facilities must be resubmitted annually by the person who conducts or authorizes the conducting of a large operation, at least 30 days prior to the expiration date, or the submittal shall no longer be valid as of the expiration date. If all fugitive dust sources and corresponding control measures or special circumstances remain identical to those identified in the previously accepted submittal or in an AQMD-approved dust control plan, the resubmittal may be a simple statement of no-change (Form 403NC).

(f) Compliance Schedule

The newly amended provisions of this Rule shall become effective upon adoption. Pursuant to subdivision (e), any existing site that qualifies as a large operation will have 60 days from the date of Rule adoption to comply with the notification and recordkeeping requirements for large operations. Any Large Operation

Notification or AQMD-approved dust control plan which has been accepted prior to the date of adoption of these amendments shall remain in effect and the Large Operation Notification or AQMD-approved dust control plan annual resubmittal date shall be one year from adoption of this Rule amendment.

(g) Exemptions

(1) The provisions of this Rule shall not apply to:

(A) Dairy farms.

(B) Confined animal facilities provided that the combined disturbed surface area within one continuous property line is one acre or less.

(C) Agricultural vegetative crop operations provided that the combined disturbed surface area within one continuous property line and not separated by a paved public road is 10 acres or less.

(D) Agricultural vegetative crop operations within the South Coast Air Basin, whose combined disturbed surface area includes more than 10 acres provided that the person responsible for such operations:

(i) voluntarily implements the conservation management practices contained in the Rule 403 Agricultural Handbook;

(ii) completes and maintains the self-monitoring form documenting sufficient conservation management practices, as described in the Rule 403 Agricultural Handbook; and

(iii) makes the completed self-monitoring form available to the Executive Officer upon request.

(E) Agricultural vegetative crop operations outside the South Coast Air Basin whose combined disturbed surface area includes more than 10 acres provided that the person responsible for such operations:

(i) voluntarily implements the conservation management practices contained in the Rule 403 Coachella Valley Agricultural Handbook; and

(ii) completes and maintains the self-monitoring form documenting sufficient conservation management practices, as described in the Rule 403 Coachella Valley Agricultural Handbook; and

(iii) makes the completed self-monitoring form available to the Executive Officer upon request.

(F) Active operations conducted during emergency life-threatening situations, or in conjunction with any officially declared disaster or state of emergency.

(G) Active operations conducted by essential service utilities to provide electricity, natural gas, telephone, water and sewer during periods of service outages and emergency disruptions.

(H) Any contractor subsequent to the time the contract ends, provided that such contractor implemented the required control measures during the contractual period.

(I) Any grading contractor, for a phase of active operations, subsequent to the contractual completion of that phase of earth-moving activities, provided that the required control measures have been implemented during the entire phase of earth-moving activities, through and including five days after the final grading inspection.

(J) Weed abatement operations ordered by a county agricultural commissioner or any state, county, or municipal fire department, provided that:

(i) mowing, cutting or other similar process is used which maintains weed stubble at least three inches above the soil; and

(ii) any discing or similar operation which cuts into and disturbs the soil, where watering is used prior to initiation of these activities, and a determination is made by the agency issuing the weed abatement order that, due to fire hazard conditions, rocks, or other physical obstructions, it is not practical to meet the conditions specified in clause (g)(1)(H)(i). The provisions this clause shall not exempt the owner of any property from stabilizing, in accordance with paragraph (d)(2), disturbed surface areas which have been created as a result of the weed abatement actions.

(K) sandblasting operations.

(2) The provisions of paragraphs (d)(1) and (d)(3) shall not apply:

(A) When wind gusts exceed 25 miles per hour, provided that:

(i) The required Table 3 contingency measures in this Rule are implemented for each applicable fugitive dust source type, and;

(ii) records are maintained in accordance with subparagraph (e)(1)(C).

(B) To unpaved roads, provided such roads:

(i) are used solely for the maintenance of wind-generating equipment; or

(ii) are unpaved public alleys as defined in Rule 1186; or

(iii) are service roads that meet all of the following criteria:

(a) are less than 50 feet in width at all points along the road;

(b) are within 25 feet of the property line; and

(c) have a traffic volume less than 20 vehicle-trips per day.

(C) To any active operation, open storage pile, or disturbed surface area for which necessary fugitive dust preventive or mitigative actions are in conflict with the federal Endangered Species Act, as determined in writing by the State or federal agency responsible for making such determinations.

(3) The provisions of (d)(2) shall not apply to any aggregate-related plant or cement manufacturing facility that implements the applicable actions specified in Table 2 of this Rule at all times and shall implement the applicable actions specified in Table 3 of this Rule when the applicable performance standards of paragraphs (d)(1) and (d)(3) can not be met through use of Table 2 actions.

(4) The provisions of paragraphs (d)(1), (d)(2), and (d)(3) shall not apply to:

(A) Blasting operations which have been permitted by the California Division of Industrial Safety; and

(B) Motion picture, television, and video production activities when dust emissions are required for visual effects. In order to obtain this exemption, the Executive Officer must receive notification in writing at least 72 hours in advance of any such activity and no nuisance results from such activity.

(5) The provisions of paragraph (d)(3) shall not apply if the dust control actions, as specified in Table 2, are implemented on a routine basis for

each applicable fugitive dust source type. To qualify for this exemption, a person must maintain records in accordance with subparagraph (e)(1)(C).

(6) The provisions of paragraph (d)(4) shall not apply to earth coverings of public paved roadways where such coverings are approved by a local government agency for the protection of the roadway, and where such coverings are used as roadway crossings for haul vehicles provided that such roadway is closed to through traffic and visible roadway dust is removed within one day following the cessation of activities.

(7) The provisions of subdivision (e) shall not apply to:

(A) officially-designated public parks and recreational areas, including national parks, national monuments, national forests, state parks, state recreational areas, and county regional parks.

(B) any large operation which is required to submit a dust control plan to any city or county government which has adopted a District-approved dust control ordinance.

(C) any large operation subject to Rule 1158, which has an approved dust control plan pursuant to Rule 1158, provided that all sources of fugitive dust are included in the Rule 1158 plan.

(8) The provisions of subparagraph (e)(1)(A) through (e)(1)(C) shall not apply to any large operation with an AQMD-approved fugitive dust control plan provided that there is no change to the sources and controls as identified in the AQMD-approved fugitive dust control plan.

(h) Fees

Any person conducting active operations for which the Executive Officer conducts upwind/downwind monitoring for PM_{10} pursuant to paragraph (d)(3) shall be assessed applicable Ambient Air Analysis Fees pursuant to Rule 304.1. Applicable fees shall be waived for any facility which is exempted from paragraph (d)(3) or meets the requirements of paragraph (d)(3).

TABLE 1
BEST AVAILABLE CONTROL MEASURES
(Applicable to All Construction Activity Sources)

Source Category	Control Measure	Guidance
Backfilling	01-1 Stabilize backfill material when not actively handling; and 01-2 Stabilize backfill material during handling; and 01-3 Stabilize soil at completion of activity.	✓ Mix backfill soil with water prior to moving ✓ Dedicate water truck or high capacity hose to backfilling equipment ✓ Empty loader bucket slowly so that no dust plumes are generated ✓ Minimize drop height from loader bucket
Clearing and grubbing	02-1 Maintain stability of soil through pre-watering of site prior to clearing and grubbing; and 02-2 Stabilize soil during clearing and grubbing activities; and 02-3 Stabilize soil immediately after clearing and grubbing activities.	✓ Maintain live perennial vegetation where possible ✓ Apply water in sufficient quantity to prevent generation of dust plumes
Clearing forms	03-1 Use water spray to clear forms; or 03-2 Use sweeping and water spray to clear forms; or 03-3 Use vacuum system to clear forms.	✓ Use of high pressure air to clear forms may cause exceedance of Rule requirements
Crushing	04-1 Stabilize surface soils prior to operation of support equipment; and 04-2 Stabilize material after crushing.	✓ Follow permit conditions for crushing equipment ✓ Pre-water material prior to loading into crusher ✓ Monitor crusher emissions opacity ✓ Apply water to crushed material to prevent dust plumes

TABLE 1
BEST AVAILABLE CONTROL MEASURES
(Applicable to All Construction Activity Sources)

Source Category	Control Measure	Guidance
Cut and fill	05-1 Pre-water soils prior to cut and fill activities; and 05-2 Stabilize soil during and after cut and fill activities.	✓ For large sites, pre-water with sprinklers or water trucks and allow time for penetration ✓ Use water trucks/pulls to water soils to depth of cut prior to subsequent cuts
Demolition – mechanical/manual	06-1 Stabilize wind erodible surfaces to reduce dust; and 06-2 Stabilize surface soil where support equipment and vehicles will operate; and 06-3 Stabilize loose soil and demolition debris; and 06-4 Comply with AQMD Rule 1403.	✓ Apply water in sufficient quantities to prevent the generation of visible dust plumes
Disturbed soil	07-1 Stabilize disturbed soil throughout the construction site; and 07-2 Stabilize disturbed soil between structures	✓ Limit vehicular traffic and disturbances on soils where possible ✓ If interior block walls are planned, install as early as possible ✓ Apply water or a stabilizing agent in sufficient quantities to prevent the generation of visible dust plumes
Earth-moving activities	08-1 Pre-apply water to depth of proposed cuts; and 08-2 Re-apply water as necessary to maintain soils in a damp condition and to ensure that visible emissions do not exceed 100 feet in any direction; and 08-3 Stabilize soils once earth-moving activities are complete.	✓ Grade each project phase separately, timed to coincide with construction phase ✓ Upwind fencing can prevent material movement on site ✓ Apply water or a stabilizing agent in sufficient quantities to prevent the generation of visible dust plumes

TABLE 1
BEST AVAILABLE CONTROL MEASURES
(Applicable to All Construction Activity Sources)

Source Category	Control Measure	Guidance
Importing/exporting of bulk materials	09-1 Stabilize material while loading to reduce fugitive dust emissions; and 09-2 Maintain at least six inches of freeboard on haul vehicles; and 09-3 Stabilize material while transporting to reduce fugitive dust emissions; and 09-4 Stabilize material while unloading to reduce fugitive dust emissions; and 09-5 Comply with Vehicle Code Section 23114.	✓ Use tarps or other suitable enclosures on haul trucks ✓ Check belly-dump truck seals regularly and remove any trapped rocks to prevent spillage ✓ Comply with track-out prevention/mitigation requirements ✓ Provide water while loading and unloading to reduce visible dust plumes
Landscaping	10-1 Stabilize soils, materials, slopes	✓ Apply water to materials to stabilize ✓ Maintain materials in a crusted condition ✓ Maintain effective cover over materials ✓ Stabilize sloping surfaces using soil binders until vegetation or ground cover can effectively stabilize the slopes ✓ Hydroseed prior to rain season
Road shoulder maintenance	11-1 Apply water to unpaved shoulders prior to clearing; and 11-2 Apply chemical dust suppressants and/or washed gravel to maintain a stabilized surface after completing road shoulder maintenance.	✓ Installation of curbing and/or paving of road shoulders can reduce recurring maintenance costs ✓ Use of chemical dust suppressants can inhibit vegetation growth and reduce future road shoulder maintenance costs

TABLE 1
BEST AVAILABLE CONTROL MEASURES
(Applicable to All Construction Activity Sources)

Source Category	Control Measure	Guidance
Screening	12-1 Pre-water material prior to screening; and 12-2 Limit fugitive dust emissions to opacity and plume length standards; and 12-3 Stabilize material immediately after screening.	✓ Dedicate water truck or high capacity hose to screening operation ✓ Drop material through the screen slowly and minimize drop height ✓ Install wind barrier with a porosity of no more than 50% upwind of screen to the height of the drop point
Staging areas	13-1 Stabilize staging areas during use; and 13-2 Stabilize staging area soils at project completion.	✓ Limit size of staging area ✓ Limit vehicle speeds to 15 miles per hour ✓ Limit number and size of staging area entrances/exists
Stockpiles/ Bulk Material Handling	14-1 Stabilize stockpiled materials. 14-2 Stockpiles within 100 yards of off-site occupied buildings must not be greater than eight feet in height; or must have a road bladed to the top to allow water truck access or must have an operational water irrigation system that is capable of complete stockpile coverage.	✓ Add or remove material from the downwind portion of the storage pile ✓ Maintain storage piles to avoid steep sides or faces

TABLE 1
BEST AVAILABLE CONTROL MEASURES
(Applicable to All Construction Activity Sources)

Source Category	Control Measure	Guidance
Traffic areas for construction activities	15-1 Stabilize all off-road traffic and parking areas; and 15-2 Stabilize all haul routes; and 15-3 Direct construction traffic over established haul routes.	✓ Apply gravel/paving to all haul routes as soon as possible to all future roadway areas ✓ Barriers can be used to ensure vehicles are only used on established parking areas/haul routes
Trenching	16-1 Stabilize surface soils where trencher or excavator and support equipment will operate; and 16-2 Stabilize soils at the completion of trenching activities.	✓ Pre-watering of soils prior to trenching is an effective preventive measure. For deep trenching activities, pre-trench to 18 inches soak soils via the pre-trench and resuming trenching ✓ Washing mud and soils from equipment at the conclusion of trenching activities can prevent crusting and drying of soil on equipment
Truck loading	17-1 Pre-water material prior to loading; and 17-2 Ensure that freeboard exceeds six inches (CVC 23114)	✓ Empty loader bucket such that no visible dust plumes are created ✓ Ensure that the loader bucket is close to the truck to minimize drop height while loading
Turf Overseeding	18-1 Apply sufficient water immediately prior to conducting turf vacuuming activities to meet opacity and plume length standards; and 18-2 Cover haul vehicles prior to exiting the site.	✓ Haul waste material immediately off-site

TABLE 1
BEST AVAILABLE CONTROL MEASURES
(Applicable to All Construction Activity Sources)

Source Category	Control Measure		Guidance
Unpaved roads/parking lots	19-1	Stabilize soils to meet the applicable performance standards; and	✓ Restricting vehicular access to established unpaved travel paths and parking lots can reduce stabilization requirements
	19-2	Limit vehicular travel to established unpaved roads (haul routes) and unpaved parking lots.	
Vacant land	20-1	In instances where vacant lots are 0.10 acre or larger and have a cumulative area of 500 square feet or more that are driven over and/or used by motor vehicles and/or off-road vehicles, prevent motor vehicle and/or off-road vehicle trespassing, parking and/or access by installing barriers, curbs, fences, gates, posts, signs, shrubs, trees or other effective control measures.	

Table 2
DUST CONTROL MEASURES FOR LARGE OPERATIONS

FUGITIVE DUST SOURCE CATEGORY		CONTROL ACTIONS
Earth-moving (except construction cutting and filling areas, and mining operations)	(1a)	Maintain soil moisture content at a minimum of 12 percent, as determined by ASTM method D-2216, or other equivalent method approved by the Executive Officer, the California Air Resources Board, and the U.S. EPA. Two soil moisture evaluations must be conducted during the first three hours of active operations during a calendar day, and two such evaluations each subsequent four-hour period of active operations; OR
	(1a-1)	For any earth-moving which is more than 100 feet from all property lines, conduct watering as necessary to prevent visible dust emissions from exceeding 100 feet in length in any direction.
Earth-moving: Construction fill areas:	(1b)	Maintain soil moisture content at a minimum of 12 percent, as determined by ASTM method D-2216, or other equivalent method approved by the Executive Officer, the California Air Resources Board, and the U.S. EPA. For areas which have an optimum moisture content for compaction of less than 12 percent, as determined by ASTM Method 1557 or other equivalent method approved by the Executive Officer and the California Air Resources Board and the U.S. EPA, complete the compaction process as expeditiously as possible after achieving at least 70 percent of the optimum soil moisture content. Two soil moisture evaluations must be conducted during the first three hours of active operations during a calendar day, and two such evaluations during each subsequent four-hour period of active operations.

Table 2 (Continued)

FUGITIVE DUST SOURCE CATEGORY	CONTROL ACTIONS	
Earth-moving: Construction cut areas and mining operations:	(1c)	Conduct watering as necessary to prevent visible emissions from extending more than 100 feet beyond the active cut or mining area unless the area is inaccessible to watering vehicles due to slope conditions or other safety factors.
Disturbed surface areas (except completed grading areas)	(2a/b)	Apply dust suppression in sufficient quantity and frequency to maintain a stabilized surface. Any areas which cannot be stabilized, as evidenced by wind driven fugitive dust must have an application of water at least twice per day to at least 80 percent of the unstabilized area.
Disturbed surface areas: Completed grading areas	(2c)	Apply chemical stabilizers within five working days of grading completion; OR
	(2d)	Take actions (3a) or (3c) specified for inactive disturbed surface areas.
Inactive disturbed surface areas	(3a)	Apply water to at least 80 percent of all inactive disturbed surface areas on a daily basis when there is evidence of wind driven fugitive dust, excluding any areas which are inaccessible to watering vehicles due to excessive slope or other safety conditions; OR
	(3b)	Apply dust suppressants in sufficient quantity and frequency to maintain a stabilized surface; OR
	(3c)	Establish a vegetative ground cover within 21 days after active operations have ceased. Ground cover must be of sufficient density to expose less than 30 percent of unstabilized ground within 90 days of planting, and at all times thereafter; OR
	(3d)	Utilize any combination of control actions (3a), (3b), and (3c) such that, in total, these actions apply to all inactive disturbed surface areas.

Table 2 (Continued)

FUGITIVE DUST SOURCE CATEGORY	CONTROL ACTIONS	
Unpaved Roads	(4a)	Water all roads used for any vehicular traffic at least once per every two hours of active operations [3 times per normal 8 hour work day]; OR
	(4b)	Water all roads used for any vehicular traffic once daily and restrict vehicle speeds to 15 miles per hour; OR
	(4c)	Apply a chemical stabilizer to all unpaved road surfaces in sufficient quantity and frequency to maintain a stabilized surface.
Open storage piles	(5a)	Apply chemical stabilizers; OR
	(5b)	Apply water to at least 80 percent of the surface area of all open storage piles on a daily basis when there is evidence of wind driven fugitive dust; OR
	(5c)	Install temporary coverings; OR
	(5d)	Install a three-sided enclosure with walls with no more than 50 percent porosity which extend, at a minimum, to the top of the pile. This option may only be used at aggregate-related plants or at cement manufacturing facilities.
All Categories	(6a)	Any other control measures approved by the Executive Officer and the U.S. EPA as equivalent to the methods specified in Table 2 may be used.

TABLE 3
CONTINGENCY CONTROL MEASURES FOR LARGE OPERATIONS

FUGITIVE DUST SOURCE CATEGORY	CONTROL MEASURES
Earth-moving	(1A) Cease all active operations; OR (2A) Apply water to soil not more than 15 minutes prior to moving such soil.
Disturbed surface areas	(0B) On the last day of active operations prior to a weekend, holiday, or any other period when active operations will not occur for not more than four consecutive days: apply water with a mixture of chemical stabilizer diluted to not less than 1/20 of the concentration required to maintain a stabilized surface for a period of six months; OR (1B) Apply chemical stabilizers prior to wind event; OR (2B) Apply water to all unstabilized disturbed areas 3 times per day. If there is any evidence of wind driven fugitive dust, watering frequency is increased to a minimum of four times per day; OR (3B) Take the actions specified in Table 2, Item (3c); OR (4B) Utilize any combination of control actions (1B), (2B), and (3B) such that, in total, these actions apply to all disturbed surface areas.
Unpaved roads	(1C) Apply chemical stabilizers prior to wind event; OR (2C) Apply water twice per hour during active operation; OR (3C) Stop all vehicular traffic.
Open storage piles	(1D) Apply water twice per hour; OR (2D) Install temporary coverings.
Paved road track-out	(1E) Cover all haul vehicles; OR (2E) Comply with the vehicle freeboard requirements of Section 23114 of the California Vehicle Code for both public and private roads.
All Categories	(1F) Any other control measures approved by the Executive Officer and the U.S. EPA as equivalent to the methods specified in Table 3 may be used.

Table 4
(Conservation Management Practices for Confined Animal Facilities)

SOURCE CATEGORY	CONSERVATION MANAGEMENT PRACTICES
Manure Handling **(Only applicable to Commercial Poultry Ranches)**	(1a) Cover manure prior to removing material off-site; AND (1b) Spread the manure before 11:00 AM and when wind conditions are less than 25 miles per hour; AND (1c) Utilize coning and drying manure management by removing manure at laying hen houses at least twice per year and maintain a base of no less than 6 inches of dry manure after clean out; or in lieu of complying with conservation management practice (1c), comply with conservation management practice (1d). (1d) Utilize frequent manure removal by removing the manure from laying hen houses at least every seven days and immediately thin bed dry the material.
Feedstock Handling	(2a) Utilize a sock or boot on the feed truck auger when filling feed storage bins.
Disturbed Surfaces	(3a) Maintain at least 70 percent vegetative cover on vacant portions of the facility; OR (3b) Utilize conservation tillage practices to manage the amount, orientation and distribution of crop and other plant residues on the soil surface year-round, while growing crops (if applicable) in narrow slots or tilled strips; OR (3c) Apply dust suppressants in sufficient concentrations and frequencies to maintain a stabilized surface.
Unpaved Roads	(4a) Restrict access to private unpaved roads either through signage or physical access restrictions and control vehicular speeds to no more than 15 miles per hour through worker notifications, signage, or any other necessary means; OR (4b) Cover frequently traveled unpaved roads with low silt content material (i.e., asphalt, concrete, recycled road base, or gravel to a minimum depth of four inches); OR (4c) Treat unpaved roads with water, mulch, chemical dust suppressants or other cover to maintain a stabilized surface.
Equipment Parking Areas	(5a) Apply dust suppressants in sufficient quantity and frequency to maintain a stabilized surface; OR (5b) Apply material with low silt content (i.e., asphalt, concrete, recycled road base, or gravel to a depth of four inches).

APPENDIX D

DTSC INFORMATION ADVISORY CLEAN IMPORTED FILL MATERIAL

Information Advisory
Clean Imported Fill Material

October 2001

DEPARTMENT OF TOXIC SUBSTANCES CONTROL

It is DTSC's mission to restore, protect and enhance the environment, to ensure public health, environmental quality and economic vitality, by regulating hazardous waste, conducting and overseeing cleanups, and developing and promoting pollution prevention.

State of California

California Environmental Protection Agency

Executive Summary

This fact sheet has been prepared to ensure that inappropriate fill material is not introduced onto sensitive land use properties under the oversight of the DTSC or applicable regulatory authorities. Sensitive land use properties include those that contain facilities such as hospitals, homes, day care centers, and schools. This document only focuses on human health concerns and ecological issues are not addressed. It identifies those types of land use activities that may be appropriate when determining whether a site may be used as a fill material source area. It also provides guidelines for the appropriate types of analyses that should be performed relative to the former land use, and for the number of samples that should be collected and analyzed based on the estimated volume of fill material that will need to be used. The information provided in this fact sheet is not regulatory in nature, rather is to be used as a guide, and in most situations the final decision as to the acceptability of fill material for a sensitive land use property is made on a case-by-case basis by the appropriate regulatory agency.

Introduction

The use of imported fill material has recently come under scrutiny because of the instances where contaminated soil has been brought onto an otherwise clean site. However, there are currently no established standards in the statutes or regulations that address environmental requirements for imported fill material. Therefore, the California Environmental Protection Agency, Department of Toxic Substances Control (DTSC) has prepared this fact sheet to identify procedures that can be used to minimize the possibility of introducing contaminated soil onto a site that requires imported fill material. Such sites include those that are undergoing site remediation, corrective action, and closure activities overseen by DTSC or the appropriate regulatory agency. These procedures may also apply to construction projects that will result in sensitive land uses. The intent of this fact sheet is to protect people who live on or otherwise use a sensitive land use property. By using this fact sheet as a guide, the reader will minimize the chance of introducing fill material that may result in potential risk to human health or the environment at some future time.

The energy challenge facing California is real. Every Californian needs to take immediate action to reduce energy consumption. For a list of simple ways you can reduce demand and cut your energy costs, see our website at www.dtsc.ca.gov.

Overview

Both natural and manmade fill materials are used for a variety of purposes. Fill material properties are commonly controlled to meet the necessary site specific engineering specifications. Because most sites requiring fill material are located in or near urban areas, the fill materials are often obtained from construction projects that generate an excess of soil, and from demolition debris (asphalt, broken concrete, etc.). However, materials from those types of sites may or may not be appropriate, depending on the proposed use of the fill, and the quality of the assessment and/or mitigation measures, if necessary. Therefore, unless material from construction projects can be demonstrated to be free of contamination and/or appropriate for the proposed use, the use of that material as fill should be avoided.

Selecting Fill Material

In general, the fill source area should be located in nonindustrial areas, and not from sites undergoing an environmental cleanup. Nonindustrial sites include those that were previously undeveloped, or used solely for residential or agricultural purposes. If the source is from an agricultural area, care should be taken to insure that the fill does not include former agricultural waste process byproducts such as manure or other decomposed organic material. Undesirable sources of fill material include industrial and/or commercial sites where hazardous ma-

Potential Contaminants Based on the Fill Source Area

Fill Source:	Target Compounds
Land near to an existing freeway	Lead (EPA methods 6010B or 7471A), PAHs (EPA method 8310)
Land near a mining area or rock quarry	Heavy Metals (EPA methods 6010B and 7471A), asbestos (polarized light microscopy), pH
Agricultural land	Pesticides (Organochlorine Pesticides: EPA method 8081A or 8080A; Organophosphorus Pesticides: EPA method 8141A; Chlorinated Herbicides: EPA method 8151A), heavy metals (EPA methods 6010B and 7471A)
Residential/acceptable commercial land	VOCs (EPA method 8021 or 8260B, as appropriate and combined with collection by EPA Method 5035), semi-VOCs (EPA method 8270C), TPH (modified EPA method 8015), PCBs (EPA method 8082 or 8080A), heavy metals including lead (EPA methods 6010B and 7471A), asbestos (OSHA Method ID-191)

**The recommended analyses should be performed in accordance with USEPA SW-846 methods (1996). Other possible analyses include Hexavalent Chromium: EPA method 7199*

Recommended Fill Material Sampling Schedule

Area of Individual Borrow Area	Sampling Requirements
2 acres or less	Minimum of 4 samples
2 to 4 acres	Minimum of 1 sample every 1/2 acre
4 to 10 acres	Minimum of 8 samples
Greater than 10 acres	Minimum of 8 locations with 4 subsamples per location
Volume of Borrow Area Stockpile	**Samples per Volume**
Up to 1,000 cubic yards	1 sample per 250 cubic yards
1,000 to 5,000 cubic yards	4 samples for first 1000 cubic yards +1 sample per each additional 500 cubic yards
Greater than 5,000 cubic yards	12 samples for first 5,000 cubic yards + 1 sample per each additional 1,000 cubic yards

terials were used, handled or stored as part of the business operations, or unpaved parking areas where petroleum hydrocarbons could have been spilled or leaked into the soil. Undesirable commercial sites include former gasoline service stations, retail strip malls that contained dry cleaners or photographic processing facilities, paint stores, auto repair and/or painting facilities. Undesirable industrial facilities include metal processing shops, manufacturing facilities, aerospace facilities, oil refineries, waste treatment plants, etc. Alternatives to using fill from construction sites include the use of fill material obtained from a commercial supplier of fill material or from soil pits in rural or suburban areas. However, care should be taken to ensure that those materials are also uncontaminated.

Documentation and Analysis

In order to minimize the potential of introducing contaminated fill material onto a site, it is necessary to verify through documentation that the fill source is appropriate and/or to have the fill material analyzed for potential contaminants based on the location and history of the source area. Fill documentation should include detailed information on the previous use of the land from where the fill is taken, whether an environmental site assessment was performed and its findings, and the results of any testing performed. It is recommended that any such documentation should be signed by an appropriately licensed (CA-registered) individual. If such documentation is not available or is inadequate, samples of the fill material should be chemically analyzed. Analysis of the fill material should be based on the source of the fill and knowledge of the prior land use.

Detectable amounts of compounds of concern within the fill material should be evaluated for risk in accordance with the DTSC Preliminary Endangerment Assessment (PEA) Guidance Manual. If

metal analyses are performed, only those metals (CAM 17 / Title 22) to which risk levels have been assigned need to be evaluated. At present, the DTSC is working to establish California Screening Levels (CSL) to determine whether some compounds of concern pose a risk. Until such time as these CSL values are established, DTSC recommends that the DTSC PEA Guidance Manual or an equivalent process be referenced. This guidance may include the Regional Water Quality Control Board's (RWQCB) guidelines for reuse of non-hazardous petroleum hydrocarbon contaminated soil as applied to Total Petroleum Hydrocarbons (TPH) only. The RWQCB guidelines should not be used for volatile organic compounds (VOCs) or semi-volatile organic compounds (SVOCS). In addition, a standard laboratory data package, including a summary of the QA/QC (Quality Assurance/Quality Control) sample results should also accompany all analytical reports.

When possible, representative samples should be collected at the borrow area while the potential fill material is still in place, and analyzed prior to removal from the borrow area. In addition to performing the appropriate analyses of the fill material, an appropriate number of samples should also be determined based on the approximate volume or area of soil to be used as fill material. The table above can be used as a guide to determine the number of samples needed to adequately characterize the fill material when sampled at the borrow site.

Alternative Sampling

A Phase I or PEA may be conducted prior to sampling to determine whether the borrow area may have been impacted by previous activities on the property. After the property has been evaluated, any sampling that may be required can be determined during a meeting with DTSC or appropriate regulatory agency. However, if it is not possible to analyze the fill material at the borrow area or determine that it is appropriate for use via a Phase I or PEA, it is recommended that one (1) sample per truckload be collected and analyzed for all compounds of concern to ensure that the imported soil is uncontaminated and acceptable. (See chart on Potential Contaminants Based on the Fill Source Area for appropriate analyses). This sampling frequency may be modified upon consultation with the DTSC or appropriate regulatory agency if all of the fill material is derived from a common borrow area. However, fill material that is not characterized at the borrow area will need to be stockpiled either on or off-site until the analyses have been completed. In addition, should contaminants exceeding acceptance criteria be identified in the stockpiled fill material, that material will be deemed unacceptable and new fill material will need to be obtained, sampled and analyzed. Therefore, the DTSC recommends that all sampling and analyses should be completed prior to delivery to the site to ensure the soil is free of contamination, and to eliminate unnecessary transportation charges for unacceptable fill material.

Composite sampling for fill material characterization may or may not be appropriate, depending on quality and homogeneity of source/borrow area, and compounds of concern. Compositing samples for volatile and semivolatile constituents is not acceptable. Composite sampling for heavy metals, pesticides, herbicides or PAH's from unanalyzed stockpiled soil is also unacceptable, unless it is stockpiled at the borrow area and originates from the same source area. In addition, if samples are composited, they should be from the same soil layer, and not from different soil layers.

When very large volumes of fill material are anticipated, or when larger areas are being considered as borrow areas, the DTSC recommends that a Phase I or PEA be conducted on the area to ensure that the borrow area has not been impacted by previous activities on the property. After the property has been evaluated, any sampling that may be required can be determined during a meeting with the DTSC.

For further information, call Richard Coffman, Ph.D., R.G., at (818) 551-2175.

APPENDIX E
FIELD PROCEDURES

APPENDIX E

FIELD PROCEDURES

Drilling and Soil Sampling Procedures

1. The borings will be drilled using a truck-mounted drill rig equipped with nominal 6-inch hollow-stem augers or using direct-push equipment. Drilling services will be provided by a State-licensed drilling contractor.
2. The augers and sampling equipment will be steam-cleaned prior to the drilling.
3. Soil cuttings from the drilling operations will be stored on-site in Department of Transportation (DOT)-approved 55-gallon drums, pending disposal disposition. The drums will be labeled with the boring designation from which the soil was collected, date, and project number.
4. Soil descriptions, in general accordance with the Unified Soil Classification System, sample type and depth, and related drilling information, will be recorded on a boring log under the supervision of a California Professional Geologist from Ardent Environmental Group, Inc.
5. Soil samples will be collected using a split-barrel modified California sampler or appropriate sampler at approximately 5 feet below the ground surface (bgs) and at approximate 5-foot-depth intervals thereafter, and continue to the bottom of the boring or at significant changes in lithology. Some samples may be collected at shallower depths.
6. The sampler will be washed between sampling intervals, using a bristle brush, with an Alconox solution (an inorganic detergent); followed by two tap water rinses. The sampler will be dried by air or with a paper towel prior to being used for sampling.
7. Soil samples will be collected (at each sample interval) in three 6-inch-long stainless steel or brass sampling rings inside the sampler, or acetate sleeve. Prior to initiation of the field program, the sample rings will be cleaned and dried in a similar fashion as described above in item 6.
8. The sampler will be driven using a 140-pound hammer (approximate weight) dropping approximately 30 inches. The number of blows (blow count) required to advance the sampler 18 inches will be recorded on the boring log.
9. Following retrieval of the sampler, the first 6-inch-long ring/acetate sleeve from the shoe of the sampler will be removed from the sampler; the ends will be covered with Teflon and capped with PVC end caps. The sample will be labeled with the sample number, collection date, and project number and will be retained for potential laboratory analysis.

10. The soil in the second sample tube/acetate sleeve from the shoe of the sampler will be used to describe the soil, measure volatile organic compounds (VOCs) using a Photoionization Detector (PID) equipped with an 11.7 electronvolt (eV) bulb, and collect a sample using EPA Method 5035. Following retrieval of the sample ring/sleeve, a plastic syringe will be used to collect three samples of approximately 5 grams of soil. The first two soil samples will be ejected into a pre-weighed, laboratory supplied, 40-milliliter, VOA vial containing sodium bisulfate. One additional sample weighing approximately 5 grams of soil will be collected using the syringe and ejected into a VOA vial containing methanol. A new syringe will be used for each sampling interval. Approximately half of the remaining soil in the ring will be removed and placed in a Ziploc bag. The bag will then be agitated and set aside for approximately 15 to 30 minutes to allow organic vapors, if present, to accumulate in the void space (headspace) of the sample tube. The headspace will then be "sniffed" using the PID. The measurements will be considered in the selection of soil samples for laboratory analyses. The PID will be calibrated daily as per the manufactures specifications.
11. The borings will be backfilled with bentonite grout or hydrated granular bentonite to ground surface.

Soil Sampling from Excavations, Test Pits, or Stockpiles

1. Soil samples will be collected from the excavation, test pits, and stockpiles using a backhoe bucket or clean spade. The samples will be placed into 4-ounce glass jars supplied by the laboratory or stainless steel rings with PVC end caps. Soil sampling will be conducted under the supervision of a California Professional Geologist from Ardent.
2. Samples to be chemically analyzed for total petroleum hydrocarbons and/or VOCs will be collected in accordance with EPA Method No. 5035, as described above.

Sample Handling

1. The soil samples retained for chemical analyses will be placed in Ziploc bags and stored in an ice chest cooled, using ice, to a temperature of approximately 40 degrees Fahrenheit.
2. The samples will be delivered to a State-certified environmental laboratory within 24 hours of collection. Sample handling, transport, and delivery to the laboratory will be documented using chain-of-custody procedures, including the use of chain-of-custody forms.

Quality Assurance/Quality Control (QA/QC)

1. QA will be implemented to assess whether the data obtained are comparable and representative of actual field conditions. The QC checks will be controlled samples that will be introduced into the sample analysis stream, and will be used to assess the performance of the laboratory, and to evaluate the accuracy, precision, and completeness of the laboratory analytical procedures.
2. The QA/QC program will consist of the minimization of possible cross-contamination during sample collection, and included decontamination of sampling equipment and the internal QA/QC procedures that will be conducted by the laboratory: laboratory blanks, laboratory surrogate spikes, and laboratory matrix spike samples.