

## **Appendix E: Site Management Plan**

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# **SITE MANAGEMENT PLAN**

## **328 West Brokaw Road**

## **Santa Clara, California**

***Prepared For:***

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***LANGAN TREADWELL ROLLO***

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**SITE MANAGEMENT PLAN  
328 WEST BROKAW ROAD  
Santa Clara, California**

## **1.0 INTRODUCTION**

On behalf of TOD Brokaw LLC (TOD Brokaw) Langan Treadwell Rollo presents this Site Management Plan (SMP) for 328 West Brokaw Road in Santa Clara, California (Figure 1). This SMP presents the soil and groundwater management measures for demolition and construction activities related to site redevelopment. These construction activities will include demolition of existing on-site structures, and earth-moving activities performed to support development. The physical area covered by this SMP is depicted on Figure 2. The SMP includes measures to mitigate potential risks to the environment and to protect construction workers, nearby residents, workers, and/or pedestrians from potential exposure to hazardous substances that may be associated with unknown impacts or “Unanticipated Conditions” (as defined in Section 8.0 below) that may be encountered during soil intrusive or demolition activities. This SMP provides a framework for managing soil and groundwater during construction, and presents procedures for handling, management, and disposal of impacted soil and groundwater, if encountered.

The site is currently under the regulatory oversight of the San Francisco Bay Regional Water Quality Control Board (Water Board) as part of a Cleanup and Abatement Order 96-024 dated February 21, 1996 (Order 96-024) (Water Board, 1996). In 1996, the Water Board entered into a land use covenant (LUC) with FMC Corporation for the 328 West Brokaw Road property that restricts use of groundwater (i.e., no water supply wells are allowed). The LUC also restricts the excavation of soil or extraction of groundwater until a plan has been prepared (and accepted by the Water Board) to protect the health and safety of the public and workers. In an email dated 6 July 2015, the Water Board requested this SMP for demolition and construction during redevelopment (Water Board, 2015). The area covered in the LUC includes the Santa Clara portion of the Test Track Area, west of the City of Santa Clara/City of San Jose border (Figure 2).

The Water Board has requested additional characterization of the soil, soil vapor, and groundwater quality beneath certain buildings following demolition. This SMP also identifies the steps to recognize and mitigate impacts that may have produced the observed elevated soil vapor concentrations discussed in Section 4.3. These protocols outline a post demolition confirmatory soil vapor and potential groundwater sampling decision framework to characterize

possible unknown impacts beneath Building 12 and the HMSA (Sections 7.2 and 7.3). As presented in Section 4.5 of this report, the 2016 ESLs will be used to screen the analytical results of the existing soil, soil vapor, and groundwater data and post demolition soil, soil vapor, and groundwater samples to be collected at the Site (see Sections 7.1, 7.2, and 7.3). This screening will be used to assess the need for active remedial action for the various media at the Site prior to or during the redevelopment of the Site.

## **2.0 PROJECT RESPONSIBILITIES AND POINTS OF CONTACT**

The regulatory agency responsible for oversight of this SMP is the Water Board. TOD Brokaw and its contractors performing the site redevelopment are responsible for implementing the procedures and protocols outlined in this SMP during redevelopment activities. As described in applicable sections of this SMP, TOD Brokaw will rely on Langan as the Environmental Professional. Contact information for each of these parties is listed below.

### **Points of Contact**

<b>Role</b>	<b>Company</b>	<b>Contact</b>	<b>Telephone Number</b>
Owner	TOD Brokaw	Edward Storm	(408) 255-4100
Regulatory Oversight Agency	Water Board	Ron Goloubow	(510) 622-2442
General Contractor	TBD	TBD	TBD
Environmental Professional	Langan	Dorinda Shipman	(415) 955-5262 (415) 717-2516
FMC Consultant for Groundwater Treatment and Extraction System	Parsons	Keith Rowland Ryan Dominguez	(831) 421-2077 (925) 324-4181

## **3.0 SITE BACKGROUND**

This section describes background information including a site description, site history and geology and hydrogeology.

### **3.1 Site Description**

The site is a 23.8-acre land parcel located in the City of Santa Clara. The site is bordered by the Union Pacific Railroad right-of way and maintenance yard to the south, West Brokaw Road to the west, Coleman Avenue to the north and the City of Santa Clara/City of San Jose boundary and the former FMC Test Track area (Coleman Highline Development, off-site) to the east (Figure 1).

There are three primary building complexes on the site: the Corporate Technology Center, Building 12, and the Stores and Receiving Building. Several smaller buildings are also present, generally bordering the railroad right-of-way (Figure 2). Following FMC's operations at the 328 Brokaw Road property, United Defense (a limited partnership between FMC Corporation and HARSCO Corporation) operated the property. The site was subsequently leased by BAE Systems (BAE), which performed design, production, and testing of military tracked vehicles under United States Department of Defense contracts.

As of January 2016, BAE is in the process of vacating the site, and pending approval of city permits, building demolition will begin during March 2016, with site construction planned for late 2016 or early 2017. The redevelopment will likely include commercial and residential buildings; however, final design plans are still in progress.

### **3.2 Site History**

The site was used for agricultural purposes until FMC purchased the property in 1953 and began assembly and painting of military tracked vehicles in 1963. An approximate five-acre landfill disposal area was used from 1951 until 1966 and was paved over with asphalt in 1980. It was located near the west end of the former test track, including an area along the southwestern boundary of the site and generally southeast of Building 12. The disposal area was used for disposal of paint booth sludge which included lead and zinc chromate pigments, zinc phosphate, and other metal surface treatment sludge.

From the 1950s to 1979, an unlined bermed surface impoundment, approximately 40 feet by 40 feet by two to three feet deep, was located south of the current Stores and Receiving building. The surface impoundment (which is not located on the 328 West Brokaw site) was used for disposal of HVOC waste mixtures such as dip tank and paint booth sludge, zinc phosphate sludge, paint, paint thinners, and solvents, oils, and diesel fuels. The impoundment was closed in 1981 through evaporation and leveling.

Though the site continued to be used for rebuilding and assembly of military tracked vehicles, the disposal practices described above ceased in the early 1980s.

#### **3.2.1 Environmental Permits**

BAE is in the process of closing several environmental permits that were issued by various state and county agencies. BAE did not operate any Resource Conservation and Recovery Act (RCRA) Hazardous Waste Treatment Storage and Disposal Facilities (TSDFs). The agencies and respective permits have included the following:

- Department of Toxic Substances Control – Hazardous Waste Generator
- California State Water Resources Control Board – Industrial Stormwater Pollution Prevention (General Permit#CAS000001)
- City of Santa Clara/San Jose Regional Wastewater Facility – Industrial Wastewater Discharge Permit
- Bay Area Air Quality Management District (BAAQMD) – Air Emissions 328 West Brokaw Road
- Santa Clara Fire Department (SCFD) – 350 Gallon Diesel Fuel Tank – Emergency Generator and two 1,000 gallon gasoline and diesel fuel tanks
- City of Santa Clara Publicly Owned Treatment Works (POTW)- Building 29 Oil and Water Separator Tank

The closure statuses of these permits are listed in Appendix A.

### **3.3 Site Geology and Hydrogeology**

Sediments underlying the site include marine or basinal clays, coarse channel deposits, and inter-channel silts and clays. The first extensive lithologic unit encountered is a dark gray to black silty clay. This unit is encountered immediately below ground surface (bgs) to depths of approximately 20 feet bgs. Scouring and infilling of this clay unit has resulted in an irregular thickness across the site and the presence of thin, laterally-discontinuous interbeds of silt and silty sand.

Two water-bearing zones are present. The first water bearing zone (A-level aquifer) underlies the surficial clay, and is observed within a depth interval of approximately 20 to 50 feet bgs. The A-level aquifer is a 5- to 35-foot thick laterally-discontinuous unit consisting of sandy silts, silty sands, and gravelly sands. Throughout much of the site, the A-level aquifer includes two transmissive zones, designated as A1 and A2, separated by a 2- to 15-foot thick silty, sandy clay layer encountered at a depth of approximately 25 feet bgs. During the third quarter 2014 monitoring event, depth to groundwater in the A-level aquifer ranged between 12 and 20 feet bgs and the flow direction was to the north-northwest, consistent with previous flow directions (Parsons, 2015a). The groundwater gradient was calculated at approximately 0.006 feet per foot. The A-level aquifer has been the primary subject of the remedial action(s) that have taken place at the site.

The second water-bearing zone (B-level aquifer) is present at depths of approximately 50 to 90 feet bgs. This confined aquifer consists of laterally-continuous, 20- to 35-foot thick gradational sequence of sandy silts, silty sands, and gravelly sands with occasional thin silty clay interbeds. The B-level aquifer is not impacted with HVOCs.

### **3.4 Previous Remedial Actions**

Under Water Board oversight, between 1996 and 1999, soil vapor and groundwater at the former off-site hazardous waste storage area (Figure 2) were mitigated using a dual phase extraction system (DPES) with pneumatic fracturing. Over 1,200 pounds of VOCs were removed by the DPES during that time, and soil confirmation sampling and analyses verified achievement of the 10 milligrams per kilogram (mg/kg) cleanup goal defined in the Order 96-024. Based on the available data, the DPES system had successfully remediated the shallow soil and groundwater in the source area. Continued operation of the DPES was determined to provide insignificant environmental benefit, and it was recommended that the DPES be shut down, and groundwater continue to be managed by containment using the downgradient groundwater extraction and treatment system in accordance with the Order 96-024 (HSI Geotrans, 1999). No remedial action was required for petroleum hydrocarbons or metals in soil.

A groundwater extraction and treatment system (GWETS, Figure 2) operated starting in 1993 to mitigate on-site groundwater impacts and prevent off-site migration of residual HVOCs. The GWETS consists of ten extraction wells, two collection trenches, and treatment via air stripping. The extraction trenches were designed to capture groundwater from both the A1- and A2-zones before the HVOCs migrated off-site. In total, the trenches are 477 feet long and approximately 50 feet deep. The extraction wells were installed in the A-level aquifer which is located within a depth interval of approximately 20 to 50 feet bgs. As of December 2014, the GWETS has removed approximately 1,198 pounds of HVOCs. The GWETS was shut down on February 27, 2015, following Water Board approval and is being monitored under a groundwater curtailment program approved by the Water Board. The GWETS shutdown activities are discussed further in Section 4.2.

## **4.0 CURRENT ENVIRONMENTAL CONDITIONS**

This section describes the most recent investigations and current environmental conditions, for soil, groundwater (including the GWETS shutdown) and soil vapor.

## **4.1 Soil**

The soil sampling events that are summarized below present results compared with Water Board Environmental Screening Levels (ESLs) in use at the time of the issuance of the report. Work to be performed under this SMP will use the 2016 ESLs, or future ESLs as they are updated.

### May 2012 Investigation

In conjunction with a soil vapor investigation (Section 4.3), Treadwell & Rollo (T&R) collected soil samples from six locations from depths between 3.0 and 6.0 feet bgs around the Corporate Technology Center. The objective of the soil sampling was to evaluate soil quality for potential re-use in the northern portion of the site during redevelopment and to quantify specific geotechnical parameters that would be needed to perform a site-specific vapor intrusion health risk evaluation, if required. HVOCs, metals, total petroleum hydrocarbons (TPH), organochlorine pesticides (OCPs), herbicides, and polychlorinated biphenyls (PCBs) concentrations were compared to the May 2008 Water Board soil direct contact ESLs Table K-1) and State and Federal hazardous waste criteria, to evaluate if off-site soil disposal from future excavations and special risk mitigation procedures would be required.

TPH as diesel (TPHd) was detected in two soil samples at low concentrations (1.6 mg/kg and 1.1 mg/kg) just above laboratory reporting limits. TPH as gasoline (TPHg) and TPH motor oil (TPHmo), HVOCs, OCPs, herbicides and PCBs were not detected above laboratory reporting limits. Several metals were detected in the soil samples collected in the northern portion of the site; however, arsenic and vanadium were the only metals detected at concentrations above their respective ESLs of 0.39 mg/kg, and 16 mg/kg. Arsenic concentrations ranged between 2.9 mg/kg and 25 mg/kg. Vanadium concentrations ranged between 34 mg/kg and 61 mg/kg (T&R, 2013). No metal detections exceeded the Total Threshold Limit Concentrations (TTLC) or ten times the soluble threshold limit concentration (STLC) therefore, no soluble metal testing was required. Arsenic, vanadium, and the remaining metals concentrations were within normal background ranges found in the western United States (United States Geological Service, 1984).

### December 2014 Soil Sampling

In December 2014, Langan collected a total of 100 soil samples from 21 borings (Figure 3). The objective of the soil sampling was to address the possibility that the source of the elevated soil vapor concentrations in the vicinity of Building 12 and the HMSA are associated with residual soil contamination. Soil sampling was also conducted in the area of elevated soil vapor

concentrations located in the southwest corner of the adjacent Coleman Highline Development site. The soil sampling was performed in general accordance with Langan's *Soil and Groundwater Sampling Work Plan* dated 3 December 2014 (Langan, 2014). Soil samples were collected from each boring at depths of approximately 2.5, 5, 10, 12 and 14 feet bgs. Eighty soil samples were analyzed for HVOCs using Environmental Protection Agency (EPA) Method 8260B.

Acetone, 2-butanone, cis-1,2-Dichloroethylene (DCE), trans-1,2-DCE, TCE, and tetrachloroethylene (PCE) were the only HVOCs detected at concentrations above laboratory reporting limits. Total HVOCs were not reported above the Order 96-024, soil industrial cleanup goal of 10 mg/kg at any sample location. Total HVOCs were reported above 1 mg/kg, at three sample locations only; boring B-2 (adjacent to Building 12), 1.53 mg/kg at 12 feet bgs, B-11 (in the HMSA) 1.01 mg/kg at 10 feet bgs and B-17 (off-site in the Coleman-Highline site) 2.92 mg/kg at 2.5 feet bgs.

Concentrations of HVOCs were also compared to the Water Board's December 2013 Residential ESLs (Table A-1). TCE was detected at or above the soil leaching for groundwater protection ESL of (0.46 mg/kg) in 12 samples (of which eight are located on-site) at concentrations ranging between 0.46 mg/kg to 2.7 mg/kg. Cis-1,2 DCE was the only other VOC that exceeded ESLs as summarized below.

On-site, the following samples had TCE concentrations exceeding ESLs(Figure 3):

- B-1 at 10 and 12 feet bgs, TCE was detected above the ESL (0.46 mg/kg) at concentrations of 0.77 mg/kg and 0.50 mg/kg, respectively.
- B-2 at 12 feet bgs, TCE was detected at 1.4 mg/kg.
- B-3 at 10 and 14 feet bgs, TCE was detected at concentrations of 0.55 mg/kg and 0.81 mg/kg.
- B-4 at 10 feet bgs, TCE was detected at 0.66 mg/kg.
- B-5 at 10 feet bgs, TCE was detected at 0.92 mg/kg.
- B-11 at 10 feet bgs, TCE was detected at 0.97 mg/kg.



Off-site at the Coleman Highline Development site, the following samples had HVOC concentrations exceeding ESLs (Figure 3):

- B-15 at 2.5 feet bgs, TCE was detected above the ESL (0.46 mg/kg) at 0.97 mg/kg.
- B-17 at 2.5 feet bgs, cis-1,2 DCE was detected above the ESL (0.19 mg/kg) at 0.22 mg/kg and TCE was detected at 2.7 mg/kg.
- B-17 at 10 feet bgs, TCE was detected at 0.50 mg/kg.
- B-17 at 14 feet bgs, TCE was detected at 0.46 mg/kg.

Only two of the 13 samples with TCE concentrations exceeding ESLs were reported in shallow soil at 2.5 feet bgs, and these samples were collected off-site at the former waste storage area. The remaining exceedances were reported between 10 and 14 feet bgs. No other HVOCs were reported above the residential ESLs. Details of this investigation are presented in Langan's 3 November 2015 *Soil Sampling Results Building 12 Letter Report* (Langan, 2015).

## **4.2 Groundwater**

On behalf of FMC, Parsons implemented GWETS curtailment activities in accordance with Geosyntec's *Groundwater Extraction Curtailment Work Plan* (Curtailment Work Plan) dated 5 April 2013 (Geosyntec, 2013a), and approved by the Water Board on 15 May 2013. The modified post curtailment monitoring schedule was presented in Geosyntec's *Soil and Soil Gas Investigation Report for Groundwater Extraction Curtailment* (Investigation Report) dated October 2013 (Geosyntec, 2013b). The Investigation Report was approved by the Water Board in 4 August 2014 email correspondence. The objective of the baseline component of the Curtailment Work Plan was to collect groundwater and soil vapor data necessary to evaluate GWETS curtailment.

Between February and July 2015, Parson's implemented the following field activities in accordance with the Curtailment Work Plan and the Investigation Report:

- 1) Baseline groundwater monitoring of the proposed GWETS curtailment network (completed in February 2015).
- 2) GWETS shutdown on February 27, 2015.
- 3) Three monthly sampling events of GWETS curtailment network (performed in March, April, and May 2015).

Following completion of the three successive monthly post-curtaiment monitoring events, the post-curtaiment monitoring schedule shifted to quarterly intervals, with the first quarterly monitoring conducted in July 2015. All groundwater samples were analyzed for HVOCs by EPA Method 8260B.

TCE, cis-1,2 DCE, 1,1-dichloroethane (DCA), and vinyl chloride (VC) were the only HVOCs detected above their respective drinking water maximum contaminant levels (MCLs) but below vapor intrusion ESLs. TCE concentrations at all wells generally remained stable with some fluctuation from the February baseline monitoring event (Parsons, 2015b). Detailed analytical results can be found in Parson's 2015 Groundwater Extraction Curtailment Completion Report dated 31 July 2015. Future monitoring activities will include the following: 1) continued quarterly groundwater sampling; 2) soil vapor monitoring (tentatively scheduled for February 2016). Results will be presented in the *Annual Groundwater Monitoring Report for 328 West Brokaw Road* scheduled for release in March 2016.

### **4.3 Soil Vapor**

Several soil vapor investigations were conducted in 2012 and 2013. Brief summaries of those investigations are presented below.

May/June 2012 – A soil vapor investigation was completed by T&R on behalf of Hunter Properties. The investigation focused on the area around the Corporate Technology Center, an area not used historically for industrial activities. This investigation included collection of 28 soil vapor samples. The soil vapor data was used to evaluate the northern non-industrial portion of the site as part of initial development activities.

September 2012 – A soil vapor investigation was completed by Geosyntec on behalf of FMC. The main objectives of the investigation were to: 1) evaluate HVOC concentrations in soil vapor around Building 12, the HMSA, and the Coleman Highline off-site former waste storage area where residual HVOCs were reported to remain in soil after the remediation activities conducted in the 1990s; and 2) to quantify geotechnical parameters needed to perform a site-specific vapor intrusion risk assessment, if required. Soil vapor concentrations exceeding residential and commercial ESLs for TCE were found around the former HMSA and in the vicinity of Building 12 (Geosyntec, 2012). Details of this investigation can be found in Geosyntec's *Soil and Soil Vapor Investigation Report* dated November 2012.

April/May 2013 – Geosyntec completed a second soil vapor investigation on behalf of FMC. The objectives of the investigation were to: 1) supplement the 2012 soil vapor investigation

results; 2) provide baseline soil vapor concentrations prior to implementing the GWETS curtailment activities and; 3) complete a site-specific vapor intrusion human health risk assessment for commercial and residential receptors (Geosyntec, 2013b).

Soil vapor concentrations measured during these investigations were compared to the residential and commercial TCE soil vapor intrusion ESLs of 300 micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ ) and 3,000  $\mu\text{g}/\text{m}^3$ , respectively (Water Board, 2013). In the northern portion of the site occupied by the Corporate Technology Center buildings, TCE exceeded residential ESLs at 10 out of 26 locations, at concentrations ranging between 740  $\mu\text{g}/\text{m}^3$  and 12,000  $\mu\text{g}/\text{m}^3$ . In the southern portion occupied by Building 12 and HMSA, TCE exceeded both residential and commercial ESLs at 15 out of 17 locations at concentrations ranging between 1,100  $\mu\text{g}/\text{m}^3$  and 430,000  $\mu\text{g}/\text{m}^3$ . The highest TCE soil vapor concentrations were detected under and immediately south of Building 12 and at the HMSA. Soil vapor results for the three investigations discussed above are summarized in Figure 4.

January 2015 - Geosyntec completed baseline soil vapor monitoring in accordance with their *Well Installation Completion Report for Groundwater Extraction Curtailment* dated March 2015 (Geosyntec, 2015a). Soil vapor sampling points VP-24 and VP-25 were advanced to 7.0 feet bgs on the southern boundary of the property to evaluate the southern extent of soil vapor impacts. TCE was detected in VP-24 and VP-25 at concentrations of 4.4  $\mu\text{g}/\text{m}^3$  and 140  $\mu\text{g}/\text{m}^3$ , respectively (Figure 4). Both concentrations were below commercial and residential ESLs (Geosyntec, 2015b).

#### **4.4 Asbestos Containing Material and Lead Based Paint**

TOD Brokaw has contracted with ACC Environmental Consultants Inc., (ACC) for an asbestos and lead based paint (LBP) survey and abatement Work Plan. ACC will manage surveying and abatement of asbestos containing material (ACM) in buildings, structures, facilities, or utilities, if required. The GC will manage ACM disposal in accordance with applicable federal, state, and local laws. ACC will also manage LBP, LBP hazards, and abatement of LBP in accordance with applicable federal, state, and local laws, as needed.

#### **4.5 Screening Criteria**

As requested by the Water Board, the 2016 ESLs will be used to screen soil, soil vapor and groundwater media, as needed. This screening will be applied to the analytical results of the existing soil, soil vapor, and groundwater data and post demolition soil, soil vapor, and groundwater samples to be collected at the Site (see Sections 7.1, 7.2, and 7.3). This

screening will be used to assess the need for active remedial action for the various media at the Site prior to or during the redevelopment of the Site.

## **5.0 NOTIFICATIONS AND OVERSIGHT**

Langan will assist the Water Board with a public notification Fact Sheet of the upcoming demolition and construction, as needed. As requested by the Water Board, the Fact Sheet will be submitted to property owners and residents within a 500-foot radius from the edge of the existing groundwater plume (Water Board, 2015). The GC will provide a demolition and grading schedule to Langan at least one week prior to conducting site work. Langan will notify the Water Board at least 48 hours in advance of structural slab demolition.

A Langan field engineer or geologist will be onsite full time to observe the slab demolition activities discussed in Section 7.0. The GC will inform Langan if unexpected conditions or features are observed during work outside Building 12 and the HMSA, that suggest the potential presence of HVOCs or other hazardous materials in soil or groundwater. Langan will notify the Water Board of these unexpected conditions within 48 hours. For the remaining areas outside of Building 12 and the HMSA, Langan will visit the site two times per week or more as needed. Langan will provide weekly updates to TOD Brokaw, and the Water Board which will include a summary of any discovered potential source areas and/or unanticipated conditions, any sampling efforts that were completed, and photographs.

## **6.0 HEALTH AND SAFETY**

Near potential source areas, workers may encounter an unanticipated condition or subsurface feature during site demolition and construction activities that may present a health and safety exposure concern, depending on the nature and extent of potentially hazardous substances. The potential routes of exposure to hazardous substances are through the following four exposure pathways: 1) dermal (skin) contact with soil, liquid, or other materials containing hazardous substances; 2) inhalation of chemically-affected dust; 3) inhalation of HVOCs from contaminated groundwater, soil and/or soil vapor; and 4) ingestion of soil, liquid, or other materials containing hazardous substances. Potential health risks to on-site construction workers and the public from demolition and construction activities will be addressed by implementing a health and safety program.

The GC will be responsible for establishing and maintaining proper health and safety procedures to minimize worker and public exposure to contaminants during construction. It is the GC's responsibility to communicate the site information, including this SMP, to its subcontractors. As part of its health and safety program, the GC will prepare a site-specific Health and Safety Plan (HASP) and identify a Health and Safety Officer (HASO). The HASO will have authority to direct and stop construction activities to maintain compliance with the HASP.

## **6.1 Site-Specific Health and Safety Plan**

The GC will prepare a site-specific HASP signed by a certified industrial hygienist (CIH). The purpose of the HASP will be to establish procedures to address potential chemical and physical hazards to field personnel and off-site receptors that may result from demolition, and construction activities, and potential handling of any hazardous chemicals. The HASP will describe the health and safety requirements, in accordance with Section 1910.120 of 29 Code of Federal Regulations (HazWoper training), specific personal hygiene protocols, and monitoring equipment that will be used during construction to protect and verify the health and safety of construction workers and the general public from exposure to chemical constituents in the soil. In addition, emergency response actions will be described in the HASP. The GC is responsible for verifying that on-site project personnel have read and will adhere to the procedures established in the HASP. A copy of the plan will be kept on-site during field activities. The HASP will be reviewed and updated as necessary if unanticipated conditions are encountered (Section 8.0).

Langan will prepare a separate HASP for their employees working on-site conducting SMP oversight and sampling activities that may be required.

## **7.0 REMOVAL OF STRUCTURAL SLABS**

As discussed in Section 4.3, residual elevated concentrations of HVOCs in soil vapor have been reported beneath Building 12 and the HMSA, and there is a possibility that the presence of unknown HVOC impacts may be present at other areas of the Site. This section identifies the procedures to recognize and mitigate soil or structures (pipelines, sumps, etc.) that may be associated with the observed elevated concentrations of HVOCs in soil vapor. As presented in Section 4.5 of this report, the 2016 ESLs will be used to screen the analytical results of the existing soil, soil vapor, and groundwater data and post demolition soil, soil vapor, and groundwater samples to be collected at the Site (see Sections 7.1, 7.2, and 7.3). This screening

will be used to assess the need for active remedial action for the various media at the Site prior to or during the redevelopment of the Site.

## **7.1 Observation During Slab Removal**

Observation work during removal of the Building 12 and HMSA foundations will be performed by a Langan field engineer or geologist on a “full time basis” under oversight of a Langan Professional Engineer (PE) or Professional Geologist (PG).

Given that there are known elevated HVOC soil vapor contaminants beneath the Building 12 and HMSA slabs, the GC, on TOD Brokaw’s behalf, may be required to implement specific health and safety monitoring protocols when working in these areas. It will be the responsibility of the GC to prepare the appropriate monitoring and worker exposure protocols to be used during slab demolition.

Full time oversight by a Langan field engineer or geologist will be required when the Building 12 and HMSA foundations are removed and soil is exposed. Langan will observe the soil conditions beneath the foundation for visual or olfactory evidence of HVOCs, petroleum or other hazardous material contamination and will use appropriate field screening instruments such a Photoionization Detector (PID) or Organic Vapor Monitor (OVM) to monitor vapor presence and concentrations. If the surface soil concentration measured by the PID or OVM is greater than 10 parts per million (ppm) Langan will conduct the following:

Step 1) Langan will direct the contractor to clear the area of any demolition debris and the surface soil will be screened for organic vapors using a PID or OVM.

Step 2) Once the area is cleared of demolition debris Langan will observe the subsurface soil below the former slabs for any of the following:

- Unusual coloring or staining which may indicate the presence of HVOCs, petroleum hydrocarbons or other hazardous materials.
- Strong or unusual odors which may indicate the presence of HVOCs, petroleum hydrocarbons or other hazardous materials.
- Oily or shiny soil or soil saturated with free-phase petroleum product.
- Soil vapors as indicated by strong or unusual odors.
- Separate phase petroleum hydrocarbons.

- Buried structures such as former underground storage tanks (USTs), pipelines, sumps, drains and/or vaults that may potentially contain or have contained petroleum hydrocarbons, hazardous materials, or HVOCs.

Step 3) Langan will collect one surface soil sample from every 25 square feet (sf) of the suspected area of impact. Additional samples will be collected at three feet bgs and if impacts are still observed again at five feet bgs. Samples will be collected using a hand driven sampler with an inside diameter of two inches, lined with a clean stainless steel tube that will be driven into the soil. The ends of the sample tube will be covered with Teflon, sealed with plastic end caps, and placed into an ice-cooled chest until delivery to an analytical laboratory. The surface and three foot samples will be analyzed on 24-hour turn-around time (TAT) for some or all of the following analyses:

- TPHg by EPA Method 8015 modified.
- TPHd, and TPHmo by EPA Method 8015 modified with silica gel cleanup.
- Polycyclic aromatic hydrocarbons (PAHs) by EPA Method 8270 SIM.
- HVOCs by EPA Method 8260B.
- PCBs by EPA Method 8082.
- CAM 17 Metals by EPA Method 6010/6020.
- LUFT 5 Metals cadmium (Cd), chromium (Cr), lead (Pb), nickel (Ni), and zinc (Zn) by EPA Method 6010/6062.

The five foot samples will be held pending results of shallower samples.

Step 4) Langan will use global positioning satellite (GPS) equipment to document the horizontal and lateral position of each sample location, within accuracies of approximately 1 to 2 feet. Sampling locations will be referenced to the North American horizontal datum 1983 (NAD 83).

Step 5) Soil sample analytical results will be screened against the 2016 soil leaching for groundwater protection ESLs (Table S-2). If soil results exceed the ESLs, additional samples will be collected and analyzed to delineate the horizontal and vertical extent of contamination. Soil samples will be collected from the location where sample results exceeded ESLs and from any visually impacted soil or soil with elevated PID readings in five foot lateral increments in the north, south, east, and west directions until impacts are no longer observed. Samples will be collected at depths of one and three feet below the proposed final design excavation depth.

Actual sample numbers and locations will be based on field observations and conditions. The five foot step out samples will only be analyzed for chemical compounds that exceed ESLs. Any additional step out samples (i.e. 10, 15, 20 feet) will be held at the laboratory pending review of analytical results. If sample analytical results do not exceed ESLs, no additional samples will be analyzed.

If the suspected impacted area is less than 25 sf, Langan will have the option to direct the GC to excavate the suspected impacted soil and remove to a designated storage area (See Section 7.1.1). Impacted soil will be disposed of in accordance with applicable laws and regulations.

Step 6) If step out sample results exceed ESLs, Langan will identify and segregate the area using stakes and survey tape. Langan will use GPS equipment to document the location of the impacted area, within accuracies of approximately one to two feet. Once demolition activities are completed Langan will consult with TOD Brokaw and the Water Board to discuss next steps to address the impacted soil. Once the proposed next steps are agreed upon, Langan will prepare an email followed by a brief letter detailing the procedures to be taken to address the presence of the impacted soil.

#### 7.1.1 Management of Excavated Soil

Soil impacted with HVOCs, petroleum, or other hazardous substances removed during demolition will be secured in an area with barricades or fencing, stakes and plastic sheeting as appropriate, and signage will be installed to prevent unauthorized access to the area. Excavated soil will be managed and characterized for off-site disposal per Sections 9.2, 9.3, and 9.5.

#### 7.1.2 Removal of Below Ground Piping

If encountered, subsurface piping associated with former utilities below Building 12 and HMSU structural slabs will be removed. The field engineer in consultation with the GC will identify the line locations, uncover the lines, remove and contain any free liquids using absorbent materials and dispose of the lines at an appropriate off-site facility. If HVOC, petroleum, or other hazardous material staining or odors are encountered in soil while uncovering the lines, the soil will be excavated and segregated, contained in a separate stockpile, and profiled for appropriate handling and disposal. Where potentially impacted material is excavated, soil samples will be collected every 25-feet at depths of two feet below the visibly impacted portion of the pipeline and analyzed for one or more of the following analyses:

- TPHg by EPA Method 8015 modified.



- TPHd, and TPHmo by EPA Method 8015 modified with silica gel cleanup.
- PAHs by EPA Method 8270 SIM.
- HVOCs by EPA Method 8260B.
- LUFT 5 Metals Cd, Cr, Pb, Ni, and Zn by EPA Method 6010/6062.

If analytical results exceed ESLs and the area of impact is greater than 25 sf, Langan will consult with TOD Brokaw, the Water Board, and FMC to discuss next steps to address the impacted soil. Once the proposed next steps are agreed upon, Langan will prepare an email followed by a brief letter detailing the procedures to be taken to address the presence of the impacted soil. If the area of impact is less than 25 sf Langan will have the option to direct the GC to excavate the impacted soil and removed to a designated storage area. Impacted soil will be disposed of in accordance with applicable laws and regulations.

## **7.2 Post Demolition Soil Vapor Sampling**

The Building 12 and HMSA slab footprints will be sectioned into approximately 75-foot grid spacing, and soil vapor samples will be collected from the center of each grid block. Depending on the soil analytical results collected during slab demolition, some sample locations may be adjusted or added to co-locate a soil vapor sample with an identified area of impact. Langan will install approximately 12 to 20 temporary soil vapor probes in the building footprint of former Building 12 and six to 10 temporary probes in the footprint of the HMSA. Temporary soil vapor probes will be installed to approximately five feet bgs using direct push drilling methods.

The soil vapor samples will be collected in general accordance with the DTSC's documents titled *Advisory – Active Soil Vapor Investigation* dated July 2015 and *Final Guidance for the Evaluation and Mitigation of Subsurface Vapor Intrusion to Indoor Air* dated October 2011. A shut-in test will be performed to ensure that no leaks exist in the laboratory provided sampling equipment. Soil vapor samples will be collected directly into 1-Liter Summa canisters at a flow rate of 200 milliliter per minute (ml/min). Helium will be used as a tracer gas around the probe rods during sampling as a quality assurance/quality control (QA/QC) measure to confirm the sample integrity. Soil vapor samples will be transported under chain-of-custody procedures to a State of California-certified laboratory. We will also collect field duplicate samples at a rate of 10% for quality control purposes by using a T-splitter at the point of collection to divide the sample stream into two separate sample containers. Soil vapor samples will be analyzed for HVOCs using EPA Method TO-15.

After soil vapor sampling is completed, the temporary soil vapor wells will be abandoned by removing the tubing assembly and backfilling the borings with neat-cement grout.

### **7.3 Post Demolition Groundwater Sampling**

Following demolition approximately six to 10 groundwater grab samples will be collected using direct push drilling methods. The attempt will be made to collect groundwater samples from shallow groundwater (water table zone WTZ) at depths ranging between approximately 15 and 50 feet bgs (i.e. the first water bearing interval). Sample locations will be co-located with areas of impacts that exceed ESLs or where elevated soil vapor concentrations were reported during post demolition soil vapor sampling. Sample locations will be chosen in consultation with the Water Board.

## **8.0 CONTINGENCY PROCEDURES FOR UNANTICIPATED CONDITIONS AND UNDERGROUND STRUCTURES**

The potential exists for encountering unanticipated conditions during demolition, grading, and construction activities in areas outside the boundaries of Building 12 and HMSA. Buried physical objects including USTs, sumps, barrels, drums, containers, or other underground structures of potential concern, and/or visual or olfactory evidence of contamination could be discovered. This section establishes a protocol for the initial response to the discovery of an unanticipated condition, notification protocols, and a path forward such that development activities can continue safely.

The primary purposes of these protocols are to: 1) provide the initial required response and notification of the discovered condition; 2) prescribe the collection and analysis of initial samples; and 3) provide the Water Board and TOD Brokaw with initial sampling data, document proposed further work if needed, and document actions taken, when complete.

### **8.1 Initial Response Procedures**

If unexpected subsurface structures of potential concern and/or visual or olfactory evidence of contamination are encountered, notification and health and safety procedures will be invoked and work will proceed in accordance with the protocols described in this section.

Upon initial discovery, the GC will notify Langan, and a Langan field engineer will initiate field screening and physical observation of the affected soil or other unanticipated condition. If an underground structure is discovered near a groundwater extraction well, extraction trench or potentially associated with the GWETS, Parsons will also be notified per Section 2.0.

Initial measures may also include conducting field monitoring by taking organic vapor readings using portable field screening devices such as an OVM and/or PID.

In accordance with the site-specific HASP, appropriate measures will be undertaken to ensure worker safety in areas where unexpected conditions are encountered. The HASO will be responsible for evaluating any change in site conditions. The HASO may stop work to determine if the level of site security and PPE is adequate. If warranted, the area in which the unknown condition was encountered will be secured with barricades or fencing, and plastic sheeting as appropriate, and signage will be installed to prevent unauthorized access to the area.

## **8.2 Underground Storage Tanks**

If an UST is discovered, the GC will notify Langan and proceed as outlined in Section 8.1. The GC will arrange for a licensed tank removal contractor to properly remove and dispose of the UST.

Permits and notifications will be obtained from the Santa Clara County Environmental Health Department (SCEHD) and the Santa Clara County Fire Department (SCCFD) prior to removing the UST. If soil staining is observed, affected soil will be excavated and placed in a stockpile (or roll-off if appropriate) as described in Section 9.2. Soil sampling and analysis associated with UST closure will be performed in accordance with the "Recommended Minimum Verification Analyses for Underground Storage Tank (UST) Leaks" established by the Water Board. A field closure report will be filed with SCEHD and the Water Board.

## **8.3 Sumps or Vaults**

If a sump and/or vaults not associated with the GWETS are discovered during demolition activities, the GC will notify Langan and proceed as outlined in Section 8.1. Permits and notifications will be obtained from the SCCFD prior to removing a sump or vault. If liquid is present within the sump/vault, the liquids will be contained, sampled, and analyzed to determine how to properly disposal of the material. If stained soil or odors are noted, plastic sheeting will be placed over the affected area until Langan can perform an inspection and determine the appropriate action to be taken. A PID will be used to measure organic vapor concentrations and assess whether health and safety precautions should be taken.

A soil sample will be collected from the bottom of the excavation and analyzed for TPH compounds, HVOCs, PAHs, PCBs, and metals, per Section 7.1. If the results exceed ESLs, soil samples will be collected as outlined in Section 7.1, Step 5.

#### **8.4 Subgrade Pipelines**

If a pipeline planned for demolition and removal is encountered, steps will be taken to identify the purpose and former contents of the pipeline and its lateral extent. If liquid is present within the pipeline or obvious staining and odors are noted, spill prevention measures will be taken to ensure residual liquids from the pipeline are not released. The pipeline will be removed to the extent required for construction activities and liquids will be contained, sampled, and analyzed to determine proper disposal protocol. If the removed pipe carried potential contaminated liquids, soil samples will be taken from areas where breaks in the pipe are evident. Samples will be collected two feet below the break and analyzed for TPH, HVOCs, PAHs, and metals. If analytical results indicate the presence of contaminants above ESLs, additional samples may be collected to determine the extent of impacted soil and whether groundwater has been impacted.

If a utility line is discovered that will remain in place post development, and there is evidence of a source of impacts below a joint break or crack in the pipeline, Langan will collect soil samples from the impacted area at a depth of two feet below the pipe. Samples will be analyzed for TPH, HVOCs, PAHs, and metals. If stained soil or odors are noted, plastic sheeting will be placed over the affected area until an inspection can be conducted and appropriate action taken. An OVM or PID will be used to measure organic vapor concentrations and determine whether additional health and safety precautions should be taken. If soil sample results that were collected from below a removed pipeline or an existing utility line exceed ESLs, Langan will collect soil samples five and 10 feet to the left and right of the area of impact at a depth of two feet below the pipe.

If analytical results exceed ESLs and the area of impact is greater than 25 sf, Langan will consult with TOD Brokaw, the Water Board, and FMC to discuss next steps to address the impacted soil. Once the proposed next steps are agreed upon, Langan will prepare an email followed by a brief letter detailing the procedures to be taken to address the presence of the impacted soil. If the area of impact is less than 25 sf Langan will have the option to direct the GC to excavate the impacted soil and removed to a designated storage area. Impacted soil will be disposed of in accordance with applicable laws and regulations.

## **8.5 Liquid Management**

If subsurface features such as USTs, pipelines, sumps or vaults containing free phase petroleum hydrocarbons or other liquids are encountered, the liquids shall be contained either in the structure or, if leaking, via spill control methods such as absorbent material and pumping to a storage tank. A PID will be used to measure organic vapor concentrations and determine whether additional health and safety precautions should be taken.

Liquid and absorbent material will be disposed of by the GC. Impacted soil will be excavated and stockpiled or if needed stored in a drum or watertight bin for testing and off-site disposal. Confirmation soil samples will be collected to confirm that impacted soil has been removed. Analytical protocols will likely include analysis of TPH and HVOC compounds, depending on the historical use and contents of the lines.

## **8.6 Vapor and Odor Management**

If petroleum or HVOC vapors and/or odors are encountered during demolition or removal of unexpected subsurface structures the following vapor and odor control measures will be implemented:

- a) Limiting the area of open excavations.
- b) Covering soil piles or open excavations with tarps and other covers.
- c) If needed, limiting soil excavations or truck loading to times when meteorological conditions are conducive to conducting operations (e.g., the predominant wind direction does not direct vapors or odors towards an off-site sensitive receptor).
- d) Spraying water or water containing a non-toxic biodegradable deodorizer, odor suppressing foam, or other odor mitigating agents onto exposed soil during excavation and loading (e.g., Simple Green, ODEX, or BioSolve).
- e) Use of spray or misting systems around the work area.

The GC and Langan will notify TOD Brokaw of complaints, if any, and record in a field daily log book including corrective actions implemented to control the vapors/odors.

## **8.7 Potentially Impacted Soil**

If potentially impacted soil is encountered, a soil sample will be collected per procedures discussed in Section 7.1. Impacted soil will be secured with barricades or fencing, stakes and plastic sheeting as appropriate, and signage will be installed to prevent unauthorized access to the area. If the area of visibly impacted soil is less 25 sf, the contractor will excavate the impacted soil up to a maximum depth of five feet bgs.

If the area of visibly impacted soil is greater than 25 sf and deeper than five feet the extent of impacts will be discussed with TOD Brokaw, the Water Board, and FMC. Once the next steps are agreed upon, Langan will prepare a letter which outlines next step procedures such as additional sampling to define the lateral and vertical extent of impacted soil, groundwater sample collection if the impacted soil extends to groundwater, volume quantification of impacted soil, excavation of impacted soil and the collection of excavation bottom and sidewall confirmation soil samples. Contaminated soil will be managed and profiled for off-site disposal per Sections 9.2 and 9.5.

## **9.0 SITE MANAGEMENT PROCEDURES**

General site and soil management procedures are presented below.

### **9.1 Measures to Protect and/or Abandon Existing Remediation Systems, Groundwater and Soil Vapor Monitoring Wells**

Prior to any soil intrusive or site demolition and development activities, the GWETS trench, remediation system components, groundwater and soil vapor monitoring wells will be identified to the GC and marked and protected in the proposed work area, in coordination and cooperation with FMC and the Water Board. As needed, GWETS trench and system components and groundwater monitoring wells will be marked by Parsons (FMC's contractor) with brightly colored paint prior to construction activities. The GC under Parsons' direction will install appropriate protection around treatment system components as required. All wells will be kept locked with expansion caps or equivalent. Temporary barriers will be constructed by Parsons to protect site monitoring wells until the final grade has been established and the site development is near completion. All remediation system components and groundwater monitoring wells will be addressed in this manner before starting construction anywhere within the site to protect these wells and components from damage. Depending on TOD Brokaw's final redevelopment plans, some monitoring wells may need to be abandoned. Any

abandonment and reinstallation activities will be reviewed and approved by both FMC and the Water Board.

## **9.2 Soil Stockpile Management Protocols**

Whenever possible, soil stockpiles will be located in close proximity to the work area or the ultimate disposition area as practicable within the site. If soil stockpiling of suspected contaminated soil is to be performed, the GC shall establish appropriate soil stockpile locations to properly segregate, cover, control dust, profile, and appropriately manage the excavated soil. Stockpiled soils are to be placed on top of one layer of 10-mil polyethylene sheeting (or equivalent), such as visqueen. When stockpiled soil is not actively being handled, top sheeting will be adequately secured so that all surface areas are covered. Alternatively, soil may be placed in rollaway bins with securable lids. The GC shall coordinate with TOD Brokaw prior to initiating site work to select an appropriate stockpile/bin storage location and will determine whether temporary fencing is required.

Stockpiles will be managed in compliance with stormwater runoff and dust control requirements. A Stormwater Pollution Prevention Program (SWPPP) will be prepared per state and federal regulations, and kept on site. In general, stockpiles must be covered with a tarp or visqueen, wetted, sloped, or controlled via appropriate means and methods as specified in a site Dust Control Plan (DCP) (Section 10.0). Best management practices (BMPs) for erosion and sediment control will be implemented, as specified in the SWPPP and the DCP, during construction activities. BMPs may include diversion of drainage from the stockpiles, installation of silt fencing/straw bale filter barriers on the down gradient toe of the stockpile slope and dust control. Stockpiles will be inspected at least weekly to ensure dust control and runoff control measures are functioning adequately and as specified in the appropriate plans. If during an inspection, it is determined that BMPs are not in place, the GC will be responsible for implementing the BMPs, in accordance with procedures specified in the DCP (Section 10) and the project-specific SWPPP (Section 12).

## **9.3 Waste Characterization Sampling**

Soils proposed for off-site disposal will require soil sampling for waste determination prior to off-Site disposal. Sampling and analysis of soil proposed for off-site disposal must be coordinated with a TOD Brokaw-approved representative prior to completion. All waste determinations (including sampling and analyses) shall be performed in accordance with applicable standards, including Title 22 CCR requirements and any requirements imposed by

waste receiving facilities. These requirements shall be confirmed by the GC and coordinated with the proposed waste receiving facilities prior to initiating soil sampling and/or excavation.

#### **9.4 Movement of Soils (On-Site)**

Native soil within the boundaries of the site may be moved within or between various portions of the site, managed and reused without need for sampling, provided the soils are not from within 50 ft of discovered impacted soil and no unanticipated conditions are encountered. Prior to moving and reusing soil on the site, TOD- Brokaw and Langan must be notified and approve of the proposed use. Langan or TOD Brokaw's approved representatives must also visually inspect the soil proposed for reuse prior to reusing the soil. Trucks used to transport soils will be loaded in a manner to minimize spillage and blowing of soil. Movement of soils on-site will be managed in accordance with the DCP.

#### **9.5 Off-Site Soil Disposal**

Soil removed from the site must be characterized and managed in accordance with Title 22 of the California Code of Regulations, Division 4.5, Chapter 11, if applicable, as well as the requirements of the disposal facility, and any other applicable law. To the extent applicable, labeling requirements for transportation of waste shall additionally be in accordance with Title 49 of the Code of Federal Regulations, Parts 172 and 173. All activities associated with waste disposal, such as truck loading, truck traffic and decontamination of trucks leaving the facility will be performed in accordance with the DCP.

All soil to be disposed will be taken only to a certified and permitted California landfill or an equivalent out-of-state landfill, as appropriate and as determined by the waste profile.

The GC, on behalf of the owner, will be responsible for tracking final soil dispositions. Any excavated soil considered State of California or Federal Resource Conservation and Recovery Act (RCRA) hazardous waste (hazardous waste) will be tracked using the Uniform Hazardous Waste Manifest System (USEPA Form 8700-22), as applicable. Soil not considered hazardous waste will be tracked using non-hazardous bills of lading. These two systems will be used to comply with appropriate state and local requirements. All manifest and bills of lading will be provided to Langan following completion of the construction activities.

#### **9.6 Soil Import Criteria**

Unless from a documented clean source such as a quarry, soil imported onto the site will be tested in accordance with the "Clean Imported Fill Material" information advisory developed by



the California Department of Toxic Substances Control (DTSC, 2001). In accordance with the DTSC information advisory, import fill will be analyzed for the following:

- TPHd and TPHmo by EPA Method 8015 modified with silica gel cleanup by EPA Method 3630.
- TPHg by EPA Method 8015 modified.
- HVOCs by EPA Method 8260.
- SVOCs by EPA Method 8270C.
- CAM 17 Metals by EPA Method 6020.
- OCPs by EPA Method 8081 (for fill source areas formerly used as agricultural land).
- Chlorinated herbicides by EPA Method 8151 (for fill source areas formerly used as agricultural land).
- PCBs by EPA Method 8082.
- Asbestos by California Air Resources Board Method 435 (CARB).

For in-place import material, the following sampling frequency is required:

- Two acres or less – a minimum of four samples.
- Two to four acres – a minimum of one sample per 1/2 acre.
- Four to 10 acres - a minimum of eight samples.
- Greater than 10 acres- a minimum of eight locations with four subsamples per location.

For excavated and stockpiled import material, the following sampling frequency is required:

- Up to 1,000 cubic yards (cy) – one sample per 250 cy.
- 1,000 to 5,000 cy – 4 samples for the first 1,000 cy plus one sample per each additional 500 cy.
- Greater than 5,000 cy – 12 samples for the first 5,000 cy plus 1 sample per each additional 1,000 cy.

If the chemical properties of an import fill source are known (i.e. quarried material) sampling may not be required. Soil quality parameters for acceptable imported soil are provided in Table 1 and based on the 2016 Water Board ESLs from Table S-1, Soil Direct Exposure Residential Human Health Screening Levels. For arsenic, the Coleman Highline site DTSC

approved screening level of 12 mg/kg (one half of the approved Water Board arsenic background concentration of 24 mg/kg) (City of San Jose, 2011) will be used in place of the ESL. Import soil with visual or olfactory evidence of petroleum hydrocarbons is prohibited.

## **9.7 Potential Vapor Mitigation Systems**

The Water Board may require a vapor mitigation system (VMS) be constructed as part of new building foundations to mitigate HVOC vapor intrusion into indoor air (Water Board, 2015). Langan will review soil vapor confirmation analytical results to evaluate the need for a site-specific vapor intrusion risk evaluation and/or the design of a VMS, such as membrane-based vapor barriers and/or passive or active ventilation systems. If needed, VMS design will require review and approval by the Santa Clara Building Department and Water Board prior to construction. Installation of this VMS will be periodically observed during the construction to confirm that the VMS was properly installed. A VMS Operations & Maintenance (O&M) plan will be prepared by TOD Brokaw/Owner and submitted to the Water Board for approval.

## **10.0 DUST CONTROL PLAN**

The GC will prepare a DCP that identifies the measures that will be taken to reduce particulate emissions during grading, soil handling and stockpiling, vehicle loading, utility work, truck traffic, and construction of site infrastructure. The DCP will be prepared in accordance with applicable Bay Area Air Quality Management District (BAAQMD) regulations related to redevelopment activities.

General dust control measures that may be used at the site include, but are not limited to, watering unpaved haul routes, restricting vehicle speeds to 15 miles per hour, wetting and/or covering stockpiles with tarps, wetting down excavation areas, reducing the height from which excavated soil is dropped, use of dust palliatives in inactive disturbed areas, implementation of erosion control measures, construction of gravel access pads in the temporary stockpile locations, installation of gravel pads or wheel wash stations at all egress points to prevent tracking of soil onto paved roads, and periodic sweeping of paved roads within the construction site with wet sweepers. The Water Board and BAAQMD will be the lead agencies that review and approve the DCP and direct the need for perimeter dust monitoring.

## **11.0 GROUNDWATER MANAGEMENT**

Construction dewatering is not anticipated based on development plans. If contaminated groundwater is generated during construction activities, Langan will discuss appropriate

management and discharge of the extracted groundwater with the GC and Water Board. Groundwater management activities will be documented in the construction completion report.

## **12.0 CONSTRUCTION STORMWATER MANAGEMENT**

A Construction SWPPP is required for construction activities involving land disturbance (including soil improvement, excavation, handling, and grading activities) for projects greater than an acre in size or if the construction activity is part of a larger common plan of development or sale of one or more acres of disturbed land surface. The Construction SWPPP must conform to the requirements of the California State Water Resource Control Board (SWRCB) National Pollutant Discharge Elimination System (NPDES) General Permit No. CAS00002, Waste Discharge Requirements (WDRS) for Discharges of Stormwater Runoff Associated with Construction and Land Disturbance Activities. As required, a Notice of Intent (NOI) shall be filed with SWRCB prior to commencement of regulated construction work (for project sites greater than an acre in size). Compliance with the SWPPP will be maintained throughout the duration of the construction work. The SWPPP will be prepared by a Qualified SWPPP Developer (QSD) per Section VII of the 2009-0009-DWQ Permit ([http://www.waterboards.ca.gov/sanfranciscobay/water\\_issues/programs/stormwater/construction.shtml](http://www.waterboards.ca.gov/sanfranciscobay/water_issues/programs/stormwater/construction.shtml)).

## **13.0 REPORTING**

Once demolition contracts are finalized, Langan will provide the Water Board with a proposed demolition schedule. During demolition activities Langan will notify the Water Board with monthly emails which summarize any identified areas of impacts, samples collected and results, and if any contaminated soil was excavated. The emails will include sample location maps and analytical data tables if needed. Following completion of demolition and at grade construction activities, the soil vapor, soil, and groundwater sampling conducted and associated site management activities will be summarized in a Construction Completion Report which will be submitted to the Water Board for review and approval. The Construction Completion Report will include a summary of field observation and sampling activities during slab demolition, soil excavation activities, a summary of unknown/unexpected conditions encountered, copies of waste manifests and bills of lading for excavated soil, well destruction and installation records, and a summary of any confirmation sampling results.

## 14.0 REFERENCES

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## TABLE

Table 1  
Soil Import Criteria  
Site Management Plan  
328 West Brokaw Road  
Santa Clara, California

Project: 731574206  
April 2016

Chemical	Enivornmental Screening Levels <sup>1</sup> for Import Soil
Volatile Organic Compounds (VOCs)	(mg/kg)
Acetone	60,000
Benzene	0.25
2-Butanone (MEK)	32,000
Bromodichloromethane	0.56
Bromoform (Tribromomethane)	63
Bromomethane	8.60
Carbon Tetrachloride	0.13
Chlorobenzene	270
Chloroethane	14,000
Chloroform	0.32
Chloromethane	110
Dibromochloromethane	8.3
1,2-Dibromo-3-chloropropane	0.099
1,2-Dichlorobenzene	2,100
1,3-Dichlorobenzene	NE
1,4-Dichlorobenzene	3.2
1,1-Dichloroethane	4.1
1,2-Dichloroethane	0.40
1,1-Dichloroethene	100
cis- 1,2-Dichloroethene	21
trans- 1,2-Dichloroethene	130
1,2-Dichloropropane	0.95
1,3-Dichloropropene	0.31
Ethylbenzene	5.5
Methylene Chloride	6.0
tert-Butyl alcohol	NE
tert-Butyl methyl ether (MTBE)	44
Styrene	6,900
Tetrachloroethene	0.62
Toluene	1,000
1,2,2-Tetrachloroethane	–
1,1,1,2-Tetrachloroethane	4.4
1,1,2,2-Tetrachloroethane	0.57
1,2,4-Trichlorobenzene	24
1,1,1-Trichloroethane	2,200
1,1,2-Trichloroethane	1.00
Trichloroethene	1.9
Trichlorofluoromethane	–
Trichlorotrifluoroethane	–
Vinyl Chloride	360
Xylenes (total)	600
Semi-Volatile Organic Compounds (SVOCs)	
Acenaphthene	3,600
Acenaphthylene	NE
Anthracene	18,000
Benzo(a)anthracene	0.70
Benzo(a)pyrene	0.07
Benzo(b)fluoranthene	0.70
Benzo(g,h,i)perylene	NE
Benzo(k)fluoranthene	7.00
1,1-Biphenyl	680
bis(2-chloroethyl) ether	0.12
bis(2-ethylhexyl)phthalate	390
2-Chlorophenol	390
Chrysene	70
Dibenz(a,h)anthracene	0.070
3,3-Dichlorobenzidine	0.58
2,4-Dichlorophenol	230
Diethyl phthalate	51,000
Dimethyl phthalate	NE
2,4-Dimethylphenol	1,600
2,4-Dinitrophenol	160
2,4-Dinitrotoluene	2.2
Fluoranthene	24,00
Fluorene	24,00
Indeno(1,2,3-cd)pyrene	0.70
2-Methylnaphthalene	240
Naphthalene	1.9
Pentachlorophenol	1.0
Phenanthrene	NE
Phenol	23,000
Pyrene	1800
2,4,5-Trichlorophenol	7,800
2,4,6-Trichlorophenol	9.9

Table 1  
Soil Import Criteria  
Site Management Plan  
328 West Brokaw Road  
Santa Clara, California

Project: 731574206  
April 2016

Chemical	Enivornmental Screening Levels <sup>1</sup> for Import Soil
<b>Pesticides/Polychlorinated Biphenyls</b>	
Aldrin	360
Polychlorinated biphenyls	0.25
Chlordane	0.48
Dioxin (2,3,7,8-TCDD)	0.000049
p-DDD	2.7
p-DDE	1.9
p-DDT	1.9
Endrin	21
Endosulfan I	420
Heptachlor	0.14
Heptachlor epoxide	0.067
Hexachlorobenzene	0.34
Hexachlorobutadiene	8.9
beta-Hexachlorocyclohexane (Lindane)	0.55
Hexachloroethane	14
Methoxychlor	350
Toxaphene	0.51
<b>Metals</b>	
Antimony	31
Arsenic	12*
Barium	15000
Beryllium	0.083
Boron	16,000
Cadmium	0.014
Chromium (total)	NE
Chromium III	120,000
Chromium VI	1.3
Cobalt	23
Copper	3,100
Cyanide (total)	5.6
Lead	80
Manganese	NE
Mercury	13
Molybdenum	390
Nickel	820
Selenium	390
Silver	390
Thallium	0.78
Vanadium	140000
Zinc	23,000
<b>Total Petroleum Hydrocarbons (TPH)</b>	
TPH-Diesel	240
TPH-Gasoline	770
TPH-Motor Oil	11,000

Notes:

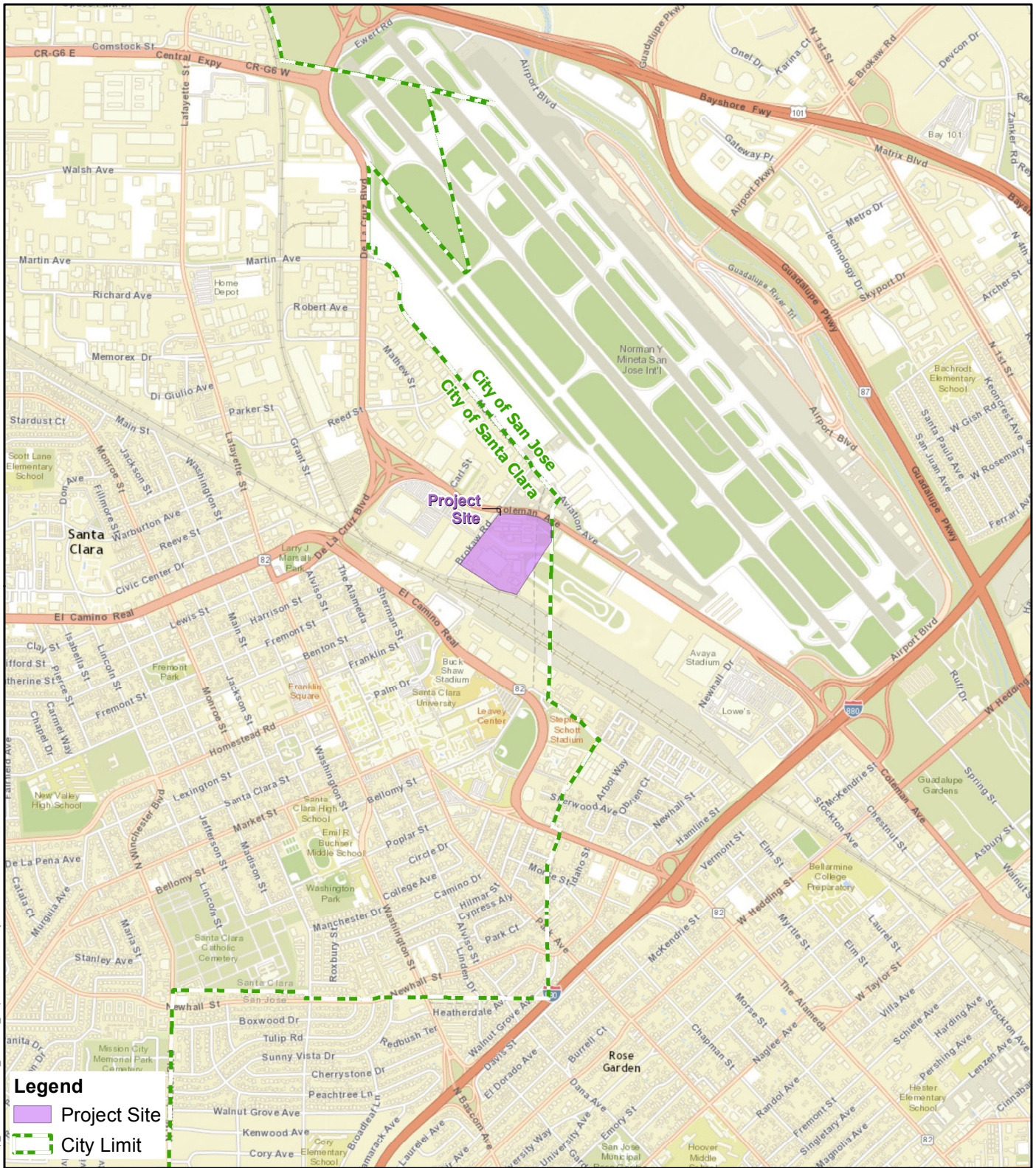
- mg/kg - milligrams per kilogram
- NE - Not Established
- NA - Not Applicable

<sup>1</sup> - Water Board Users Guide for Derivation and Application of Environmental Screening Levels (Table S-1 - Residential Soil Direct Contact Exposure Human Health Screening Levels). February 2016

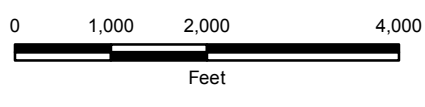
\* One half of the DTSC approved 24 mg/kg background concentration for arsenic, Soil Management Plan, Test Track Area, City of San Jose, April 2011.



## FIGURES



- Notes:**
1. World street basemap is provided through Langan's Esri ArcGIS software licensing and ArcGIS online. Credits: Sources: Esri, DeLorme, NAVTEQ, USGS, Intermap, iPC, NRCAN.
  2. Map displayed in California State Plane Coordinate System , Zone III, North American Datum of 1983 (NAD83) , US Survey Feet.

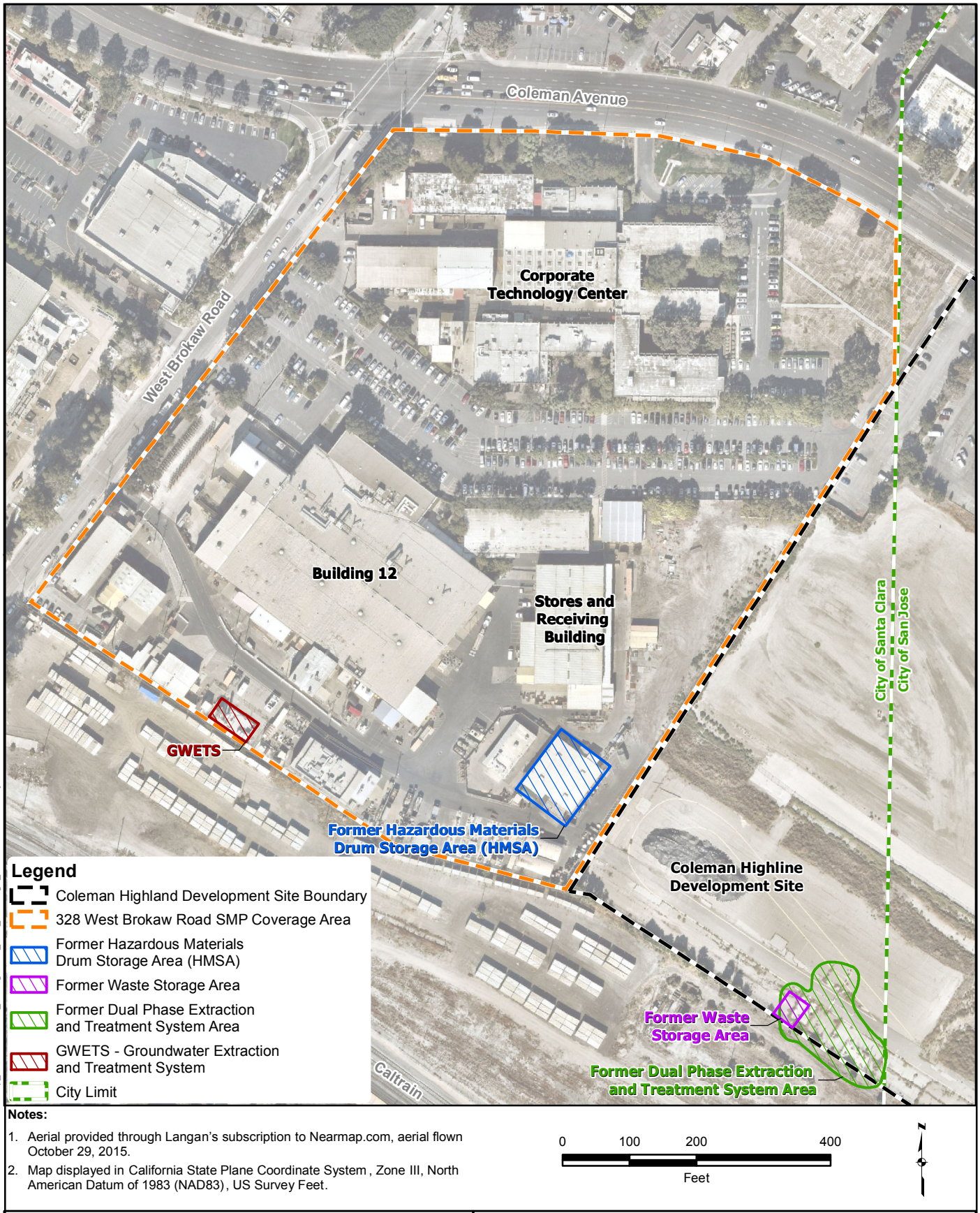


<p><b>328 West Brokaw Road</b> Santa Clara, California</p>	<p><b>SITE LOCATION MAP</b></p>		
<p><b>LANGAN TREADWELL ROLLO</b></p>	<p>Date 1/31/2016</p>	<p>Project 731574209</p>	<p>Figure 1</p>

Path: \\langan.com\data\SFO\data\731574209\ArcGIS\Map\_Documents\Site\_Location\_Map.mxd User: bsaylor



Path: \\langan.com\data\SFO\data\2731574209\ArcGIS\ArcMap\_Document\Site\_Management\_Plan\_Coverage\_Area.mxd User: baylor



<div>328 West Brokaw Road Santa Clara, California</div>	<div>SITE MANAGEMENT PLAN COVERAGE AREA</div>		
<div>LANGAN TREADWELL ROLLO</div>	<div>Date 2/5/2016</div>	<div>Project 731574209</div>	<div>Figure 2</div>







\\langan.com\data\SFO\data\731574209\ArcGIS\ArcMap\_Documents\Soil\_Vapor\_Concentrations.mxd User: bsaylor



#### Legend

- Soil Vapor Sample - Geosyntec, January 2015
- Soil Vapor Sample -, Geosyntec, April-May 2013
- Soil Vapor Sample -Geosyntec, September 2012
- Soil Vapor Sample - Treadwell & Rollo, May-June 2012
- Coleman Highland Development Site Boundary
- 328 West Brokaw Road SMP Coverage Area
- Former Hazardous Materials Drum Storage Area (HMSA)
- Former Waste Storage Area
- Former Dual Phase Extraction and Treatment System Area
- GWETS - Groundwater Extraction and Treatment System
- City Limit

#### Sample Location Explanation

- VP-13** Sample ID  
**15,000** TCE concentration in  $\mu\text{g}/\text{m}^3$

Notes:  
1. TCE - Trichloroethene  
2.  $\mu\text{g}/\text{m}^3$  - micrograms per cubic meter  
3. Aerial imagery provided through Langan's subscription to nearmap.com, aerial flown on October 29, 2015.  
4. Map displayed in California State Plane Coordinate System, Zone III, North American Datum of 1983 (NAD83), US Survey Feet.

0 75 150 300  
Feet

328 WEST BROKAW ROAD  
Santa Clara, California

#### TCE CONCENTRATIONS IN SOIL VAPOR

Date 3/18/2016 Project 731574209 Figure 4

**LANGAN TREADWELL ROLLO**



**APPENDIX A**  
**ENVIRONMENTAL PERMITS**

BAE Systems  
Platforms & Services  
6331 San Ignacio Ave.  
San Jose, CA 95119-1202  
408-289-0111



*VIA EMAIL*

February 24, 2016

TOD Brokaw, LLC  
Hunter Properties  
10121 Miller Avenue, Suite 200  
Cupertino, CA 95014

Re: Your request for closure status on Coleman/ Brokaw property

Ed, Deke – Josh Rupert has requested a statement from BAE Systems regarding the status of our various environmental permits and licenses while we were operating on the Coleman Ave/ Brokaw Road property.

Please see attached chart for a listing of all permits and licenses and their respective status regarding closure. Note that some are still open pending our termination of operations per the lease amendment for the 340/ 328 Brokaw property.

If there are any questions, please do not hesitate to contact me.

A handwritten signature in black ink, appearing to read "Carl Hanes", written in a cursive style.

Carl Hanes  
Facilities Manager  
BAE Systems

## Safety, Health, Environmental Permit/Certificate/License/Registration Summary

BAE Systems Santa Clara Operations: (Santa Clara) 1205 Coleman Rd, 328 W Brokaw Rd, 340 W Brokaw Rd;

<i>Issuing Agency</i>	<i>Permit Description</i>	<i>Status</i>	<i>Reference Number</i>	<i>Maintained by</i>
CA Dept of Toxic Substances Control	Hazardous Waste Generator - 1205 Coleman Ave, Santa Clara (Santa Clara Fire Department)	EPA ID Number Closed on 1/7/16		Site Environmental/Cardona
CA State Water Resources Control Board	(Industrial) Stormwater Pollution Prevention (General Permit#CAS000001) - 328 W Brokaw Rd, Santa Clara	WDID Closed on 1/7/2016	Notice of Termination submitted	Site Environmental/Cardona
Bay Area Air Quality Management District	Air Emissions - 328 W Brokaw Rd, Santa Clara	Closed on 10/15/2015		Site Environmental/Cardona
Bay Area Air Quality Management District	Air Emissions - 1205 Coleman Ave, Santa Clara	Closed on 10/20/2015		Site Environmental/Cardona
Santa Clara Fire Dept	350 Gal Diesel Fuel Tank in Server Rm of Wing E2 - 1205 Coleman Ave, Santa Clara, Emergency Generator	Closed on 10/20/2015		Site Environmental/Cardona
Santa Clara Fire Dept	(2ea) 1000 Gal Gasoline and Diesel Fuel Tanks Installation - 328 W Brokaw Rd, Santa Clara	Closed on 10/15/2015		Site Environmental/Cardona
San Jose/Santa Clara Regional Wastewater Facility	Industrial Wastewater Discharge - 328 W Brokaw Rd, Santa Clara	Pending Closure on May, 2016		Site Environmental/Cardona
Santa Clara Buildings Hazardous Materials Business Plans	Closed per California Environmental Reporting Systems	SCFD Notice of Closure on 2/12/16	Building 98 pending closure on May, 2016	Site Environmental/Cardona
City of Santa Clara POTW Permit	Building 29 Oil and Water Separator Tank	Pending Closure on May, 2016	Currently open	Site Environmental/Cardona
CA Dept of Toxic Substances Control	Hazardous Waste Generator - 328 Coleman Ave, Santa Clara (Santa Clara Fire Department)	EPA ID Number Pending Closure May 2016	Currently open	Site Environmental/Cardona
Business Plan (CERS) for Building 98	Hazardous Waste Generator - 328 Coleman Ave, Santa Clara (Santa Clara Fire Department)	EPA ID Number Pending Closure May 2016	Currently open	Site Environmental/Cardona

2/24/16 *CMD*



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**San Francisco Bay Regional Water Quality Control Board**

May 18, 2016  
File No. 43S0273 (REG)

TOD Brokaw, LLC  
Attn: Mr. Deke Hunter and Mr. Ed Storm  
10121 Miller Avenue, Suite 200  
Cupertino, CA 95014  
[deke@hunterproperties.com](mailto:deke@hunterproperties.com)  
[ed@hunterproperties.com](mailto:ed@hunterproperties.com)

SUBJECT: Approval of Site Management Plan, Former FMC Corporation Facilities, 328 West Brokaw Road, Santa Clara, Santa Clara County

Dear Mr. Hunter and Mr. Storm:

This letter responds to your April 18, 2015, Site Management Plan (SMP) prepared for the subject site. As explained below, I approve the SMP and require three completion reports.

**Background**

The Regional Water Board regulates the former FMC Corporation (FMC) site at 328 West Brokaw Road (Site) pursuant to Order 96-024. TOD Brokaw, LLC (TOD Brokaw) is the current owner of the Site and is planning to redevelop the Site for commercial and residential land use. Elevated concentrations of trichloroethene have been detected in soil vapor samples collected in 2012 and 2013 at areas of the Site where the redevelopment is to take place.

**SMP Summary**

The SMP presents the soil, soil vapor, and groundwater management procedures for demolition and construction activities related to site redevelopment. The following key elements/procedures are provided in the SMP to take place during the demolition and redevelopment activities proposed at the Site include:

- Mitigate potential risks to the environment and individuals residing or working at and near the Site from potential exposure to hazardous substances
- Collect and analyze soil, soil vapor, and groundwater samples at the Site
- Respond to unanticipated conditions or underground structures that may be encountered at the Site
- Use the Regional Water Board's 2016 Environmental Screening Levels as the cleanup levels for the existing and the proposed post demolition soil, soil vapor, and groundwater data to assess the requirement for active remedial action and/or additional investigation at the Site

**SMP Approval**

The SMP is acceptable. I hereby approve it.

**SMP Completion Reports**

TOD Brokaw is required to submit two completion reports documenting the implementation of the SMP following the demolition phase of project, and one completion report documenting the implementation of the SMP following the redevelopment of the Site.

*Demolition Completion Reports*

The first demolition completion report is due 45 days after the demolition and grading activities are complete at the southern portion of the Site that includes Building 12, the Stores and Receiving Building, and the structures and site features located to the south of those buildings. The second demolition completion report is due 45 days after the demolition and grading activities are complete at the Corporate Technology Center, located in the northern portion of the Site.

The demolition completion reports shall include the following information:

- Analytical results of the samples collected during the demolition activities including summary tables and location maps
- Comparison of contaminant concentrations to cleanup levels
- Observations made during the implementation of the SMP
- Any requirements under the SMP that were not completed
- Removal actions conducted including location maps and sample results, as necessary
- Recommendations for further investigation(s), remedial activities, and vapor intrusion mitigation systems (VIMS) for the proposed redevelopment project

VIMS recommendations should consider the guidelines in the Regional Water Board's 2014 *Interim Framework for Assessment of Vapor Intrusion at TCE-Contaminated Sites in the San Francisco Bay Region*. If VIMS is to be installed at the Site, additional reporting will be required to be submitted to the Regional Water Board under separate cover.

*Redevelopment Completion Report*

The redevelopment completion report is due 45 days after the redevelopment activities are complete at the Site. The redevelopment completion report shall include the information to be included for the demolition completion reports listed above.

This requirement for reports is made pursuant to Water Code Section 13267, which allows the Regional Water Board to require technical or monitoring program reports from any person who has discharged, discharges, proposes to discharge, or is suspected of discharging waste that could affect water quality. The attachment provides additional information about Section 13267 requirements. Any extension in the above deadline must be confirmed in writing by Regional Water Board staff.

You are required to submit all documents in electronic format to the State Water Resources Control Board's GeoTracker database pursuant to the California Code of Regulations (Title 23, Section 3890 et.seq.). Guidance for electronic information submittal is available at: [http://www.waterboards.ca.gov/water\\_issues/programs/ust/electronic\\_submittal/](http://www.waterboards.ca.gov/water_issues/programs/ust/electronic_submittal/). Please note that

this requirement includes all analytical data, monitoring well latitudes, longitudes, elevations, water depth, site maps, and boring logs (PDF format).

If you have any questions, please contact Ron Goloubow of my staff at (510) 622-2442 [[Ron.Goloubow@waterboards.ca.gov](mailto:Ron.Goloubow@waterboards.ca.gov)].

Sincerely,

Bruce H. Wolfe  
Executive Officer

Attachment: Section 13267 Fact Sheet  
cc w/attachment:

Nancy Bice - Geosyntec - [nbice@geosyntec.com](mailto:nbice@geosyntec.com)  
George Cook - Santa Clara Valley Water District - [gcook@valleywater.org](mailto:gcook@valleywater.org)  
Ken Davies - City of San Jose - [ken.davies@sanjoseca.gov](mailto:ken.davies@sanjoseca.gov)  
Clay Gantz - Manatt - [cgantz@manatt.com](mailto:cgantz@manatt.com)  
Robert Hines - Farella Braun & Martel - [rhines@fbm.com](mailto:rhines@fbm.com)  
Brian McGinnis - FMC - [brian.mcgininis@fmc.com](mailto:brian.mcgininis@fmc.com)  
Sabrina Mizrachi - FMC - [sabrina.mizrachi@FMC.com](mailto:sabrina.mizrachi@FMC.com)  
Craig Moyer - Manatt - [cmoyer@manatt.com](mailto:cmoyer@manatt.com)  
Phil Smith - Langan Treadwell Rollo - [psmith@Langan.com](mailto:psmith@Langan.com)

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**San Francisco Bay Regional Water Quality Control Board**

**Fact Sheet – Requirements for Submitting Technical Reports  
Under Section 13267 of the California Water Code**

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**What does it mean when the Regional Water Board requires a technical report?**

Section 13267<sup>1</sup> of the California Water Code provides that "...the regional board may require that any person who has discharged, discharges, or who is suspected of having discharged or discharging, or who proposes to discharge waste...that could affect the quality of waters...shall furnish, under penalty of perjury, technical or monitoring program reports which the regional board requires."

**This requirement for a technical report seems to mean that I am guilty of something, or at least responsible for cleaning something up. What if that is not so?**

The requirement for a technical report is a tool the Regional Water Board uses to investigate water quality issues or problems. The information provided can be used by the Regional Water Board to clarify whether a given party has responsibility.

**Are there limits to what the Regional Water Board can ask for?**

Yes. The information required must relate to an actual or suspected or proposed discharge of waste (including discharges of waste where the initial discharge occurred many years ago), and the burden of compliance must bear a reasonable relationship to the need for the report and the benefits obtained. The Regional Water Board is required to explain the reasons for its requirement.

**What if I can provide the information, but not by the date specified?**

A time extension may be given for good cause. Your request should be promptly submitted in writing, giving reasons.

**Are there penalties if I don't comply?**

Depending on the situation, the Regional Water Board can impose a fine of up to \$5,000 per day, and a court can impose fines of up to \$25,000 per day as well as criminal penalties. A person who submits false information or fails to comply with a requirement to submit a technical report may be found guilty of a misdemeanor. For some reports, submission of false information may be a felony.

**Do I have to use a consultant or attorney to comply?**

There is no legal requirement for this, but as a practical matter, in most cases the specialized nature of the information required makes use of a consultant and/or attorney advisable.

**What if I disagree with the 13267 requirements and the Regional Water Board staff will not change the requirement and/or date to comply?**

You may ask that the Regional Water Board reconsider the requirement, and/or submit a petition to the State Water Resources Control Board. See California Water Code sections 13320 and 13321 for details. A request for reconsideration to the Regional Water Board does not affect the 30-day deadline within which to file a petition to the State Water Resources Control Board.

**If I have more questions, whom do I ask?**

Requirements for technical reports include the name, telephone number, and email address of the Regional Water Board staff contact.

*Revised March 2014*

<sup>1</sup> All code sections referenced herein can be found by going to <http://leginfo.legislature.ca.gov/faces/codes.xhtml>.