7 September 2017 Project 731641604

Mr. Keith Nowell, PG Alameda County Health Care Services Agency Environmental Health Department 1131 Harbor Bay Parkway, Suite 250 Alameda, CA 94502

Subject: Work Plan For Additional Environmental Sampling Cleanup Case No. RO03236 3000 Broadway SPE LLC 3000 Broadway Redevelopment: 3000 and 3020 Broadway; 3007 and 3009 Brook Street; and 250, 260, and 288 30th Street Oakland, California Langan Project: 731635604

Dear Mr. Nowell:

I have read and acknowledge the content, recommendations and/or conclusions contained in the attached document submitted on my behalf to ACDEH's FTP server and the SWRCB's GeoTracker website.

RECEIVED

By Alameda County Environmental Health 2:22 pm, Sep 11, 2017

Sincerely yours,

Alan Chamorro 3000 Broadway SPE LLC

WORK PLAN FOR ADDITIONAL ENVIRONMENTAL SAMPLING 3000 BROADWAY REDEVELOPMENT

3000 and 3020 Broadway; 3007 and 3009 Brook Street; and 250, 260, and 288 30th Street Oakland, California 94611

> Prepared For: Alameda County Environmental Health 1131 Harbor Bay Parkway Alameda, California 94502

Prepared By: Langan Engineering and Environmental Services, Inc. 501 14th Street, 3rd Floor Oakland, California 94612

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7 September 2017 750635604

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Mr. Keith Nowell, PG Alameda County Environmental Health 1131 Harbor Bay Parkway Alameda, California 94502

Re: Work Plan for Additional Environmental Sampling Cleanup Program Site – Case No. RO03236 3000 Broadway Redevelopment Oakland, California Langan Proposal No.: 750635604

Dear Mr. Nowell,

Langan Engineering and Environmental Services, Inc. (Langan), on behalf of 3000 Broadway SPE LLC (Client), is submitting this *Work Plan for Additional Environmental Sampling* (Work Plan) to further evaluate soil and groundwater at the 3000 Broadway Redevelopment (site) in Oakland, California.

Our recent subsurface investigations, conducted at the site and downgradient of the site, have encountered both soil and groundwater that was impacted by total petroleum hydrocarbons (TPH), volatile organic compounds (VOCs), and/or to a much lesser extent, polycyclic aromatic hydrocarbons (PAHs). The additional environmental sampling proposed is intended to further evaluate and delineate contaminated soil and groundwater previously encountered, and to determine the appropriate extent of the proposed vapor mitigation system (VMS) associated with the development.

If you have any questions or need any information clarified, please call Joshua Graber at (510) 874-7086.

Sincerely yours,

Langan Engineering and Environmental Services, Inc.

tachlin

Karianne Staehlin Senior Staff Scientist

Dorinda Shipman, PG, CHG Principal



Joshua Graber, CHMM Associate

cc: Alan Chamorro – Lowe Enterprises Real Estate Group

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WORK PLAN FOR ADDITIONAL ENVIRONMENTAL SAMPLING 3000 BROADWAY REDEVELOPMENT Oakland, California

1.0 INTRODUCTION

On behalf of 3000 Broadway SPE LLC (Client), Langan Engineering and Environmental Services, Inc. (Langan) has prepared this *Work Plan for Additional Environmental Sampling* (Work Plan) to further evaluate soil and groundwater at the 3000 Broadway Redevelopment (site) in Oakland, California (Figure 1). This Work Plan was prepared in response to our conversation with you and Dilan Roe on 10 August 2017 and Alameda County's Department of Environmental Health's (ACEH's) letter dated 14 August 2017. Currently, the site is comprised of four vacant warehouse-like structures (250, 260, and 288 30th Streets and 3020 Broadway), including one former restaurant (3000 Broadway), and two vacant residential properties (3007 and 3009 Brook Street) in a fully developed mixed-use area of Oakland, commonly referred to as Auto Row. The additional environmental sampling proposed is intended to further evaluate and delineate contaminated soil and groundwater impacts at the site, and determine the appropriate extent of the proposed vapor mitigation system (VMS) associated with the development.

Our recent subsurface investigations, conducted at the site and downgradient of the site, have encountered both soil and groundwater impacted by total petroleum hydrocarbons (TPH), volatile organic compounds (VOCs), and/or to a much lesser extent, polycyclic aromatic hydrocarbons (PAHs). The impacted material is predominantly located in the southeast portion of the site, primarily at the 260 30th Street address, and is proposed for removal during redevelopment. The Site and previous sampling locations are shown on Figure 2.

The site is currently in the ACEH's Local Oversight Program (LOP) and is associated with active cleanup program site RO03236. Case RO03236 was opened following the discovery of TPH and VOC impacts in soil during a geotechnical investigation in November 2016. We believe the impacts are related to a nearby floor drain system, which is proposed for removal during site redevelopment. Additionally, TPH impacts are located near former floor hoists, which, according to the former owner, were mounted on the concrete slab along the eastern portion of the site. Soil containing TPH is also proposed for removal by over-excavation during redevelopment.



The site is also in the LOP with an active fuel leak case number of RO0000247, which is associated with a former underground storage tank (UST). However, we do not believe the recently discovered TPH, VOC, and PAH-impacted soil and groundwater are related to the former UST located in the sidewalk of 30th Street, due to the upgradient location of the impacts relative to the former UST.

The purpose of the additional environmental sampling proposed in this Work Plan is to:

- 1) Further investigate and delineate subsurface conditions southwest (cross-gradient) and upgradient (north) of the floor drain and former floor hoists;
- 2) Determine the appropriate extent of the VMS associated with the proposed development; and
- Record depth to water in each of the recently installed on-site and off-site groundwater monitoring wells (GW-1 through GW-5) to establish current depth to groundwater, indicative of dry season/summertime levels.

A summary of our proposed additional environmental sampling is presented in this Work Plan. Langan's sampling and analytical testing methods, including standard operating procedures (SOPs) are consistent with our *Work Plan for Additional Environmental Sampling and Monitoring* dated 17 March 2017, which was previously submitted to and approved by ACEH.

Following the completion of the additional subsurface investigation, we will prepare a technical memorandum summarizing our field activities, sampling methods, and analytical results, and will update our *Basis of Vapor Mitigation System Design* letter incorporating our findings and any appropriate revisions to the proposed VMS. We will also share and discuss the results with ACEHD, and upload the relevant documents to the site's Geotracker website.

1.1 Site Description and Proposed Redevelopment

As show in Figure 2, the approximately 0.81-acre site is comprised of four warehouse-like structures (250, 260, and 288 30th Streets and 3020 Broadway), including one former restaurant (3000 Broadway), and two residential properties (3007 and 3009 Brook Street) in a fully developed mixed-use area of Oakland, commonly referred to as Auto Row. Until recently, the warehouse-like structures were utilized as automobile sales, repair and service shops, a restaurant, or were vacant. The restaurant (3000 Broadway) recently closed; the former



showroom (3020 Broadway) is vacant; and the two private residences (3007 and 3009 Brook Street) are vacant and planned for either relocation or demolition.

The site is directly bound by a commercial property and asphalt parking area to the north, Brook Street to the east, 30th Street to the south, and Broadway to the west. The site and surrounding area generally slopes to the southeast. The site has an approximate high elevation of 50 feet above mean sea level (MSL) at the northwest corner along Broadway, and an approximate low elevation of 30 feet above MSL at the southeast corner near the corner of 30th and Brook Streets.

Current development plans for the site include the construction of a five-story, wood-frame apartment building, over a one- to two-story concrete podium with parking. The proposed development will have a single level basement along Broadway leveling out to the current grade at Brook Street, as the ground surface elevation drops. The entrance to the partial below grade parking will be along Brook Street. The partial below grade parking level will be naturally ventilated along the southern and eastern faces of the site. Mechanical ventilation will be provided on the interior parking area. All residential and commercial units are situated above the parking podium. A maximum excavation depth of 18 feet is expected along Broadway and a minimum excavation of seven to eight feet along Brook Street is expected. Over-excavation for remediation purposes is proposed along Brook Street to remove soil exceeding the Regional Water Quality Control Board's Tier 1 Environmental Screening Levels (ESLs), as described in the *Soil and Groundwater Management Plan* associated with the site. The data proposed for collection as part of this Work Plan will be used to evaluate soil to be left in place as part of the redevelopment, and cross-gradient and upgradient groundwater conditions.

1.2 Site Geology and Hydrogeology

Our recent subsurface investigations indicate that the soil profiles vary from east to west across the site. In general, the eastern portion of the site is blanketed by medium dense clayey sand underlain by very stiff to hard clay, sandy clay and clay with sand. The western portion of the site is blanketed by medium stiff to stiff sandy clay underlain by alternating layers of stiff clays and medium dense to very dense sands.

Based on groundwater elevations from existing monitoring wells at the site, groundwater flows in a southeasterly direction towards Glen Echo Creek, which is located approximately 300 feet away from the site boundary. Groundwater elevations measured in November 2016 at the site ranged from approximately 21 feet above MSL in the 3020 Broadway property, to



approximately 9 feet above MSL in the 260 30th Street property. Groundwater elevations measured in February 2017 at the site were significantly higher than those observed in November 2016. February 2017 groundwater elevations ranged from approximately 29 feet above MSL in the 3020 Broadway property, to an average of approximately 26 feet above MSL in the 260 30th Street property. Above average rainfall occurred at the site between November 2016 and February 2017, which contributed to the significant rise in groundwater elevation beneath the site. Additionally, the 3007 and 3009 Brook Street properties, which are located upgradient to the northwest of the 260 30th Street property, have unpaved backyards. The presence of unpaved backyards in the upgradient and uphill location relative to the 260 30th Street property likely contributed to the significant rise in groundwater elevation along the eastern portion of the site relative to the western portion of the site, due to rainfall infiltration and southeasterly flow towards Glen Echo Creek.

2.0 RECENT INVESTIGATIONS

This Work Plan was developed based on discussions with ACEH and the results of our most recent subsurface investigations, which was summarized in the following documents:

- Langan Engineering and Environmental Services, Inc., *Additional Environmental Site Characterization, 250 and 260 30th Street, Oakland, California 94611* dated 8 March 2017;
- Langan Engineering and Environmental Services, Inc., *Feasibility Study and Corrective Action Plan, 3000 Broadway Redevelopment, Oakland, California* dated 2 May 2017;
- Langan Engineering and Environmental Services, Inc., Soil and Groundwater Management Plan, 3000 Broadway Redevelopment, 3000 and 3020 Broadway; 3007 and 3009 Brook Street; and 250, 260 and 288 30th Street, Oakland, California dated 17 May 2017;
- Langan Engineering and Environmental Services, Inc., *Basis of Design for Vapor Mitigation System, 3000 Broadway Redevelopment, 260 30th Street, Oakland, California* dated 22 May 2017; and
- Langan Engineering and Environmental Services, Inc., *Supplemental Environmental* Information Memorandum, 3000 Broadway Redevelopment, 3000 and 3020 Broadway;

3007 and 3009 Brook Street; and 250, 260 and 288 30th Street, Oakland, California dated 16 June 2017.

Between April 2016 and June 2017, Langan performed multiple subsurface investigations at the site which included the sampling of soil, groundwater, and soil vapor, in addition to the installation of groundwater monitoring wells. The analytical results and general findings have been discussed, at length, in our previous reports.

Based on the concentrations of VOCs and PAHs detected in shallow soil and grab-groundwater from our March 2017 *Additional Environmental Site Characterization* (borings B-17 through B-28) and our May 2017 *Soil and Groundwater Management Plan* (SGMP) (borings B-31 through B-36), and VOC concentrations detected in groundwater from our June 2017 *Supplemental Environmental Information Memorandum* (GW-1 through GW-5), both Langan and ACEH acknowledge the presence of contaminant impacts beneath the site, specifically the 260 30th Street property. Trichloroethylene (TCE) has been identified as the main contaminant of concern at the site, and a site plan with recently reported TCE groundwater concentrations illustrated, is provided as Figure 3. As illustrated in Figure 3, TCE concentrations are generally highest in the vicinity of GW-1 and GW-2 and borings around the floor drain. Analytical results indicate that TCE concentrations significantly decrease in the cross-gradient directions and vertically below 18 feet bgs. Furthermore, the lack of significant detections in wells GW-3 and GW-5 (and previous boring B-27) indicate that the TCE plume is relatively narrow.

As detailed in our May 2017 SGMP, we propose to over-excavate soil containing TPH, VOC, and PAH compounds exceeding their Tier 1 ESLs from the 260 30th Street property, during site development. In order to achieve excavation depths, dewatering and treatment is anticipated. We anticipate that the proposed over-excavation and dewatering activities will remove the source of the site's contamination. Groundwater monitoring wells GW-1 and GW-2 will be removed during excavation and groundwater monitoring wells GW-3, GW-4, and GW-5 are expected to remain active throughout site development activities and will be monitored following the excavation and dewatering activities to assess changes to groundwater contaminant concentrations off-site.

Additionally, as detailed in Langan's *Feasibility Study and Corrective Action Plan, 3000 Broadway Redevelopment, Oakland, California* dated 2 May 2017 (FS/CAP), if groundwater results indicate that additional groundwater treatment is necessary, groundwater contamination will be addressed by one of the following treatment alternatives: enhanced bioremediation, in-



situ chemical oxidation, or zero valent iron (ZVI). If additional groundwater treatment is necessary, the final corrective action and implementation plan to address groundwater will be presented in an addendum to the FS/CAP.

Groundwater conditions beneath and downgradient of the 260 30th Street property have been characterized; however, ACEH has requested additional upgradient to cross-gradient sampling to the north and west of the source area, to determine the appropriate extent of the site's VMS.

3.0 ADDITIONAL ENVIRONMENTAL SAMPLING

Langan proposes to advance three additional borings (B-46, B-47, and B-48) for the collection of soil and groundwater samples. The proposed sampling locations are shown on Figure 2, and include the following:

- One boring (B-46) to a maximum depth of 20 feet bgs with direct push technology for the collection of a single soil and grab-groundwater sample. The soil sample will be collected beneath the proposed excavation depth. This sample is located upgradient along the site's northern boundary (3009 Brook Street property) and is anticipated to delineate the plume in this direction. Current plans are to extend the proposed VMS to the site's northern boundary; and
- Two borings (B-47 and B-48) to a maximum depth of 20 feet bgs with direct push technology for the collection of a single soil and grab-groundwater sample. The soil samples will be collected beneath the proposed excavation depth at each location. These samples are located within the site's 250 30th Street property and upgradient to crossgradient of the existing TCE plume and intended to delineate the plume and determine the appropriate extent of the proposed VMS in this direction.

3.1 Site Specific Health and Safety Plan

A site-specific *Health and Safety Plan* will be prepared by Langan as required by the Occupational Health and Safety Administration Standard "Hazardous Waste Operations and Emergency Response" guidelines (29 CFR 1910.120). The Health and Safety Plan will be reviewed and signed by Langan personnel and subcontractors performing work at the site, prior to conducting field activities.



3.2 Pre-investigation Tasks

We will coordinate site access with all appropriate parties prior to sampling. At least 72 hours prior to all field activities, we will visit the site to mark out the sample locations and to notify the Underground Service Alert One-Call Notification Center (USA). In addition, we will engage the services of a private utility locator to clear the proposed sample locations for underground utilities. Langan will also procure the required permits from Alameda County Public Works Agency-Water Resources Department (ACPWA).

3.3 Sampling Activities

This section outlines the proposed soil and groundwater sampling activities. Proposed drilling and sampling locations are shown on Figure 2.

3.3.1 Soil and Grab-groundwater Sampling

Borings B-46 through B-48 will be advanced using a direct-push drill rig utilizing Geoprobe[®] technology and operated by Gregg Drilling and Testing (Gregg), a C-57 licensed drilling company based in Martinez, California. If necessary, the borings will be advanced to five feet bgs with a hand auger to clear the location for buried utilities and will be drilled to a maximum depth of 20 feet bgs, depending on field conditions and the depth to groundwater.

Soil materials encountered during drilling activities will be logged in the field by a Langan geologist or engineer following the Unified Soil Classification System (USCS). Soils will be examined in the field for evidence of contamination (including visible staining, odors, and/or elevated readings on a PID). Observed lithology and PID readings will be recorded on boring logs, Soil sample(s) will be collected into acetate liners and sealed with Teflon sheets and plastic end caps.

Grab-groundwater sample will be collected from each of the three borings. Once the boring depth has been achieved, a temporary 1-inch PVC casing, with 5-feet of pre-packed sand screen, will be placed in the boreholes to measure the approximate depth to groundwater. Each grab-groundwater sample will be collected with either a clean stainless steel bailer or a peristaltic pump, decontaminated between each use. Grab-groundwater samples will be collected into laboratory-provided bottles with appropriate preservatives, if any.

All samples will be placed on ice in a cooler following collection and shipped under chain-ofcustody (COC) procedures to a State of California-certified analytical laboratory.

To avoid cross contamination, all sampling equipment used during the investigation activities will be thoroughly cleaned between sample locations. All borings will be backfilled with neat cement grout and the surface cover will be restored in accordance with ACPWA requirements.

3.4 Laboratory Analyses

Based on field observations, we will analyze one soil sample and one grab-groundwater sample from the three proposed boring locations (B-46 through B-48). The soil and grab-groundwater samples will be submitted for all of the following analyses on a standard turnaround time (TAT):

- Total petroleum hydrocarbons (TPH) as gasoline (TPHg), diesel (TPHd), and motor oil (TPHmo) by EPA Method 8015; and
- Volatile organic compounds (VOCs) by EPA Method 8260.

3.5 Sample Identification

Sample nomenclature shall be assigned, as follows:

- Soil samples shall be identified by boring location and bottom depth of sample (i.e. a sample collected at boring location B-46 at a depth of 7.5 to 8.0 feet bgs will be labeled as B-46-8.0); and
- Grab-groundwater samples shall be identified by boring location (i.e. B-46-GW).

3.6 Field Documentation

Field activity logs will be completed for each site visit. Field activity logs shall identify the following: site name and address, date and time on-site, on-site field personnel, general weather conditions, purpose of site visit, a summary of field activities, and any other important details. Soil boring logs will be completed for each boring. Boring logs will include soil types encountered, PID readings and observations of groundwater.

3.7 Chain of Custody

Samples will be collected and transported to the analytical laboratory following chain of custody (COC) procedures. The COC documents the identity and integrity of the sample from the time of collection through receipt at the laboratory. The COC will be completed as samples are collected, and will include the following information: sample ID, date of sample collection, time of sample collection, sample type, and sampler name(s).



3.8 Sample Packing and Shipping

Samples will be packed in boxes and transported, by shipment or courier, to the respective certified analytical laboratories. Each sample will be individually labeled and will be accompanied by the COC. All samples will be transported to the respective analytical laboratories after sample collection. The COC will be signed by the sampler and relinquished to the sample custodian.

3.9 Investigation Derived Waste

Investigation derived waste including soil cuttings, used sampling equipment, and decontamination rinsate will be placed in 55-gallon drums, sealed and labeled. The drums will be stored on-site, pending analytical profiling and proper disposal.

4.0 ADDITIONAL MONITORING ACTIVITIES

Langan also proposes to record depth to water in each of the recently installed on-site and offsite groundwater monitoring wells (GW-1 through GW-5) to establish current depth to groundwater, indicative of dry season/summertime levels.

5.0 DATA EVALUATION AND REPORTING

Upon the completion of the field activities and analytical testing, Langan will prepare a technical memorandum summarizing our field activities, sampling methods, and analytical results. The report will compare the analytical results to ESLs and describe the nature and extent of contaminant impacts. We will also provide the updated groundwater depth findings in this technical report, will share and discuss the results with ACEH, and upload the relevant documents to the site's Geotracker website.

6.0 PROJECT SCHEDULE

We are requesting your review and approval of this Work Plan for completion of field activities that are estimated to require approximately one full field day. We are currently planning on completing this work on 14 September 2017, pending ACEH and permit approval (ACPWA). Laboratory analyses are expected to be completed within one to two weeks after sample collection. The complete technical report is anticipated to be complete within two to four weeks of receipt of all laboratory analytical data.



FIGURES





B-46 🔶	EXPLANATION Approximate location of proposed additional environmental boring			
GW-1 ᠲ	Approximate location of groundwater monitoring well			
SV-1 📀	Approximate location of soil vapor sample by Langan, April 2017			
B=31 🔘	Approximate location of soil and/or groundwater boring by Langan, March and April 2017			
B-37 🤤	Approximate location of soil sampling boring for composite characterization, 20 feet bgs max. by Langan, April 2017			
B-42 🥥	Approximate location of boring for composite characterization, 8 feet bgs max. by Langan, April 2017			
B-17 🔘	Approximate location of environmental boring by Langan, February 2017			
B-13 - ⊕-	Approximate location of geotechnical boring by Langan, November 2016			
B-1 🔘	Approximate location of 5-foot boring by Langan Treadwell Rollo, April 2016			
B-3 ()	Approximate location of 20-foot boring by Langan Treadwell Rollo, April 2016			
B-5 🖨	Approximate location of 15-foot boring by Langan Treadwell Rollo, April 2016			
B-7	Approximate location of 10-foot boring by Langan Treadwell Rollo, April 2016			
	Approximate location of abandoned in-place 1,000-gallon waste oil UST, March 1997			
	Approximate location of former USTs (350-gallon gasoline and 1,000-gallon diesel), removed in July 1992			
	Approximate location of floor drain			
	Approximate footprint of proposed 3000 Broadway Redevelopment			
	Approximate location of drain line piping			
	1			
	0 30 Feet			
3000 BROADWAY REDEVELOPMENT Oakland, California				
SITE PLAN WITH SAMPLING LOCATIONS				
Date 08/31/17 Project No. 750635604 Figure 2				
LANGAN				







3000 BROADWAY REDEVELOPMENT Oakland, California

SITE PLAN WITH TCE CONCENTRATIONS IN GROUNDWATER

Date 08/31/17 Project No. 750635604 Figure 3