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By Alameda County Environmental Health 8:27 am, Mar 15, 2017

March 3, 2017

Mr. Keith Nowell  
Hazardous Materials Specialist  
Alameda County Environmental Health Services  
1131 Harbor Bay Parkway, Suite 250  
Alameda, CA 94502



City Ventures

**Re:**  
**Data Gap Investigation Work Plan for Multiple Parcels**  
**City Ventures Oakland 2 Site**  
**2240 Filbert Street, Oakland**  
**ACEH Site RO#0003157**  
**Stantec PN: 185703027**

Dear Mr. Nowell:

Enclosed with this cover letter is the Data Gap Investigation Work Plan for Multiple Parcels for the above-referenced City Ventures Oakland 2 location.

As an authorized representative of City Ventures, I offer the following statement:

I, Andrew Warner, declare, under penalty of perjury, that the information and/or recommendations contained in the enclosed Report are true and correct to the best of my knowledge.

Should you have any questions please contact me at (415) 845-0293 or [andrew@cityventures.com](mailto:andrew@cityventures.com).

Thank you,

Andrew Warner  
Director Development  
City Ventures



March 3, 2017

Mr. Keith Nowell  
Alameda County Health Care Services  
1131 Harbor Bay Parkway, Suite 250  
Alameda, California 94502-6577

**SUBJECT: DATA GAP INVESTIGATION WORK PLAN FOR  
MULTIPLE PARCELS, WEST GRAND AVENUE, FILBERT AND MYRTLE STREET  
OAKLAND, CALIFORNIA – RO0003157**

**REFERENCE:** Data Gap Investigation Work Plan

Dear Mr. Nowell,

On behalf of City Ventures (CV) for the real property located at 2240 Filbert Street in Oakland, California (the "Site"; Figure 1), Stantec Consulting Services Inc. (Stantec) is submitting this data gap investigation scope of work for additional soil and soil gas assessment for the subject site ("Work Plan").

The remedial action plan (RAP) dated March 2, 2017 evaluated historical Site data, and outlined the process to investigate data gaps and evaluate the potential residual human health risk associated with the residual contamination and whether excavation or other mitigation alternatives were warranted. Attached to the RAP, a *Human Health Risk Assessment* (HHRA) was completed using the current data set which found that detected concentrations in soil vapor do not pose an unacceptable risk for vapor intrusion to indoor air.

CV is in the process of redeveloping the property for multi-unit residential housing. The data collected to date, presented herein and evaluated in the HHRA does not pose an unacceptable risk to human health assuming residential use of the Site. The ACEH has requested additional sampling to address potential data gaps. The RAP proposes further assessment that addresses these data gaps. Should the additional data generated by the data gap investigation all fall below the HHRA Site specific screening levels, CV plans to request no further action status for the Site and approval for redevelopment under residential use.

Results of the HHRA completed for the Site indicate that residual contaminants in soil, groundwater, and soil vapor do not pose an unacceptable risk to future residential use of the property. However, based on a review of all known historical data, remedial actions, and analysis of residual concentrations to screening level criteria, the following data gaps were identified at the Site:

- No soil vapor assessment has been conducted at the Market Street Block to confirm residual impacts in groundwater and submerged soil do not pose an unacceptable risk to future residential occupants of the property, a soil vapor assessment is needed.



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#### **WORK SCOPE FOR ADDITIONAL ASSESSMENT**

- Additional soil vapor assessment is needed at the West Grand Block to further delineate impacts reported during the 2014 and 2016 investigations and potential impacts coming from historical operations at neighboring properties (914 Grand Avenue).
- Soil parameter data is needed for the additional soil vapor assessment locations to confirm conservative default parameters used in the HHRA Johnson & Ettinger model calculations.
- Shallow soil assessment is needed at the West Grand Block to complete characterization of shallow (0 to 3 feet bgs) soil, where previous investigation has reported possible fill and where previous site grading activities have disturbed the shallow soil, and to address residual metals and historical detections of petroleum hydrocarbons in soil (based on soil sample locations B-37, B-44 and soil vapor location SV-13).

This Work Plan has been prepared for supplemental sampling which will include the sampling described below. After completion of the supplemental sampling to address data gaps, Stantec will prepare a report describing the work performed, summarizing the results, and comparing concentrations to residential environmental screening levels (ESLs; Water Board 2016) and UURA Site-specific screening levels. Should the additional sampling results identify areas that still exceed the ESLs or Site-specific screening levels for soil vapor, an additional Implementation work plan will be prepared describing the scope of work.

The following sections provide the scope of work for the data gap investigation.

#### **TASK 1: SUPPLEMENTAL SAMPLING**

##### **Shallow Soil Assessment**

A summary of the proposed assessment is provided below.

##### **West Grand Block Soil Assessment**

Ten (10) borings designated as S-1 through S-10 will be advanced at the West Grand Block to depths of 3 feet bgs at the approximate locations shown on Figure 2. Samples will be collected from each location at 0.5 and 3 feet bgs. Soil samples will be used to confirm the presence of contaminants historically detected from borings B-44 and B-37, with other soil samples used to further characterize shallow soils across the site. Further characterization of the shallow soil will help close a data gap identified in this RAP regarding shallow fill (as deep as 2.5 feet bgs) noted in historical assessment of the south western portion of the West Grand Block and provide data in other areas where shallow data may be lacking. Additionally, select samples, particularly near the proposed soil vapor locations, will be used to obtain geophysical soil parameter data that will verify Site specific assumptions made in the HHRA.



## **WORK SCOPE FOR ADDITIONAL ASSESSMENT**

### **Market Street Block Soil Assessment**

Two (2) borings designated as S-11 through S-12 will be advanced at the Market Street Block to depths of 3 feet bgs at the approximate locations shown on Figure 2. These proposed borings will be advanced and sampled in order to obtain geophysical soil parameter data that can be will verify Site specific assumptions made in the HHRA submitted in the RAP.

### **Soil Vapor Assessment**

Additional soil vapor assessment will be conducted following applicable guidelines proposed in the California Department of Toxic Substances Control (DTSC) guidance document Advisory – Active Soil Gas Investigations updated April 2012 (DTSC 2012). A summary of the proposed assessment activities is provided below.

### **Market Street Block Soil Vapor Assessment**

Three (3) borings designated as SV-15 through SV-17 will be advanced to depths of 5 feet bgs at the approximate locations shown on Figure 2. The proposed vapor probe locations were selected to provide adequate characterization of conditions across the Market Street Block area in the vicinity of historical detections of COPCs in groundwater. The boring locations may be modified from the proposed locations depending on potential overhead, surface, or subsurface obstructions. The borings will be advanced using hand auger methods. Soil samples will be collected at 5 feet bgs in each boring for soil matrix parameters such as site specific lithology, bulk density, porosity, and fixed gases.

The soil gas probes, attached to Teflon sampling tubing (1/4-inch outside diameter) will be installed in each boring at a target depth of 5 feet bgs. The soil gas probe tips are typically 3-inches long with a diameter of 0.25 inches.

Following placement of the probe at approximately 5 feet bgs, an annular one-foot thick sand pack will be placed across the vapor probe screen interval, extending approximately 6 inches above the point. One foot of dry bentonite will then be placed on top of the sand pack and overlain with pre-hydrated granular bentonite will then be placed on the top of the sand pack and overlain by a one foot thick cement slurry cap at the ground surface. The tubing connected to the sampling probe will extend through the bentonite and cement slurry seal to the ground surface and the ends of the tubing will be capped and covered.

### **West Grand Block Soil Vapor Assessment**

Eleven (11) borings designated as SV-18 through SV-28 will be advanced to depths of 5 feet bgs at the approximate locations shown on Figure 12. The proposed vapor probe locations were



#### **WORK SCOPE FOR ADDITIONAL ASSESSMENT**

selected based on the proximity to previous VOC detections and in areas selected to fill possible data gaps in uninvestigated areas (e.g., proposed ground floor commercial spaces, paver areas, etc.). The boring locations may be modified from the proposed locations depending on potential overhead, surface, or subsurface obstructions. The borings will be advanced using hand auger methods. Soil samples will be collected at 5 feet bgs in each boring for soil matrix parameters such as site specific lithology, bulk density, porosity, and fixed gases.

The soil gas probes, attached to Teflon vapor sampling tubing (1/4-inch outside diameter) will be installed in each boring at a target depth of 5 feet bgs. The soil gas probe tips are typically 3-inches long with a diameter of 0.25 inches.

Following placement of the probe at approximately 5 feet bgs, an annular one-foot thick sand pack will be placed across the vapor probe screen interval, extending approximately 6 inches above the point. One foot of dry bentonite will then be placed on top of the sand pack and overlain with pre-hydrated granular bentonite will then be placed on the top of the sand pack and overlain by a one-foot thick cement slurry cap at the ground surface. The tubing connected to the sampling probe will extend through the bentonite and cement slurry seal to the ground surface and the ends of the tubing will be capped and covered.

#### **Soil Vapor Sampling Procedures**

The following sampling methodology will be employed during the performance of the soil gas assessment:

- Soil gas sampling will be performed at least 48 hours following probe installation to allow subsurface conditions to reach equilibrium.
- In accordance with DTSC, three purge volumes will be removed prior to sampling. The purge volume will be determined by the following:

$$\text{Minimum Purge Volume} = 4.46 \text{ ml/foot of } 0.25 \text{ in. OD tubing} \times \text{length of tubing}$$

- Purging and sampling will be conducted at a flow rate of less than 200 milliliters per minute (mL/min) using a low-flow sampling pump or a 6-liter evacuated canister (each 1-inch of mercury drop in canister vacuum equates to approximately 200 ml).
- Potential intrusion of atmospheric air into the sampling train can dilute the samples and compromise integrity. Furthermore, contaminants in ambient air can also enter the sampling system and may be interpreted as originating in soil gas. A leak test will be performed to evaluate potential atmospheric short circuiting at each soil gas sample location using helium as a tracer gas. Utilizing a shroud, helium will be introduced and maintained at a concentration of approximately 10%. Purged air will be collected into a 1-



#### **WORK SCOPE FOR ADDITIONAL ASSESSMENT**

liter Tedlar bag and field measured using a portable helium detector. If the tracer gas is detected (> 5% of the shroud concentration), the soil vapor monitoring point and all connections will be checked, tightened, and resampled until no breakthrough is detected. The laboratory will be notified that analysis of helium is being requested and the analysis will be specifically requested on the chain-of-custody form, and at a minimum include VOCs, methane, and oxygen.

- In accordance with the DTSC guidance document, at least one duplicate per day will be collected and analyzed for QA/QC purposes. Duplicate samples will be collected in separate containers simultaneously using a duplicate sampling manifold (tee).

#### **Laboratory Analysis**

##### **Soil Chemical Analysis**

Shallow soil samples collected at approximately 0.5 and 3 feet bgs from each shallow soil assessment borings at the West Grand Block and Market Street Block will be submitted for analysis to a California-certified laboratory. All soil samples will be analyzed for CAM 17 metals. Samples collected near areas where historical data suggests potential petroleum hydrocarbon impacts (near B37, B-44, and soil vapor location SV-13) will also be analyzed for VOCs by EPA Method 8260 and TPH by EPA Method 8015.

Additionally, soil matrix parameters will be collected from select soil samples, as described below.

##### **Soil Matrix Parameters**

For the assessment of potential health risk associated with direct contact and vapor intrusion from VOC, the following soil matrix parameters, in addition to visual soil description using the Unified Soil Classification System (USCS), will be obtained from each shallow soil sample collected near a proposed soil vapor boring location (Figures 12 and 13). Those associated shallow soil borings will be continued past the planned 3 foot depth, to a depth of approximately 5 feet bgs, for collection of soil to be analyzed for the following:

- Dry bulk density.
- Organic carbon content.
- Soil moisture content.
- Porosity (total and water-filled).
- Grain size distribution analysis.



## **WORK SCOPE FOR ADDITIONAL ASSESSMENT**

### **Soil Vapor Analysis**

Soil vapor samples collected from each of the sampling probes will be analyzed at a fixed-base California-certified laboratory for BTEX, naphthalene, and VOCs by EPA Method TO-15 full scan. Soil vapor analysis will also include fixed gases. The fixed gasses include oxygen, carbon dioxide, nitrogen, methane, and the tracer gas (helium) using American Society of Testing and Materials (ASTM) D-1946 or equivalent EPA test method.

### **TASK 2: DATA ANALYSIS & REPORTING**

Upon completion of field activities and receipt of analytical results, a findings report will be prepared. The report will document methodologies used for data collection and will include tabulated analytical data along with applicable screening levels. The data obtained from the soil and soil gas assessment will be used to evaluate the potential for vapor intrusion into future occupied structures under current site conditions. Site maps, boring logs, gas probe completion details, subsurface contaminant distribution maps, survey information, and certified analytical reports will be included in the report.

### **SCHEDULE**

Preparation for field activities will commence following approval of this submittal. The site assessment field activities can commence within approximately two weeks following approval to allow for scheduling, permitting and utility clearance. It is anticipated that an additional 2 weeks will be needed for receipt of analytical data and to prepare the report of findings; results of the assessment will be submitted to the ACEH in a report (as described above) following completion of the proposed field activities.



March 1, 2017  
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**WORK SCOPE FOR ADDITIONAL ASSESSMENT**

Thank you for your cooperation on this project. Should you have any questions or need additional information, please contact either of the undersigned.

Regards,

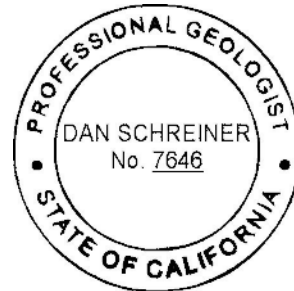
**STANTEC CONSULTING SERVICES INC.**

A handwritten signature in black ink that reads "Tony Giglini".

Tony Giglini  
Associate Scientist/Toxicologist  
Tel. 916.752.7159  
Tony.giglini@stantec.com

A handwritten signature in blue ink that reads "Dan Schreiner".

Dan Schreiner, P.G.  
Senior Geologist  
Tel. 916.742.3915  
Dan.schreiner@stantec.com



Cc. Mr. Andrew Warner, City Ventures  
Geotracker (upload)

Attachments:

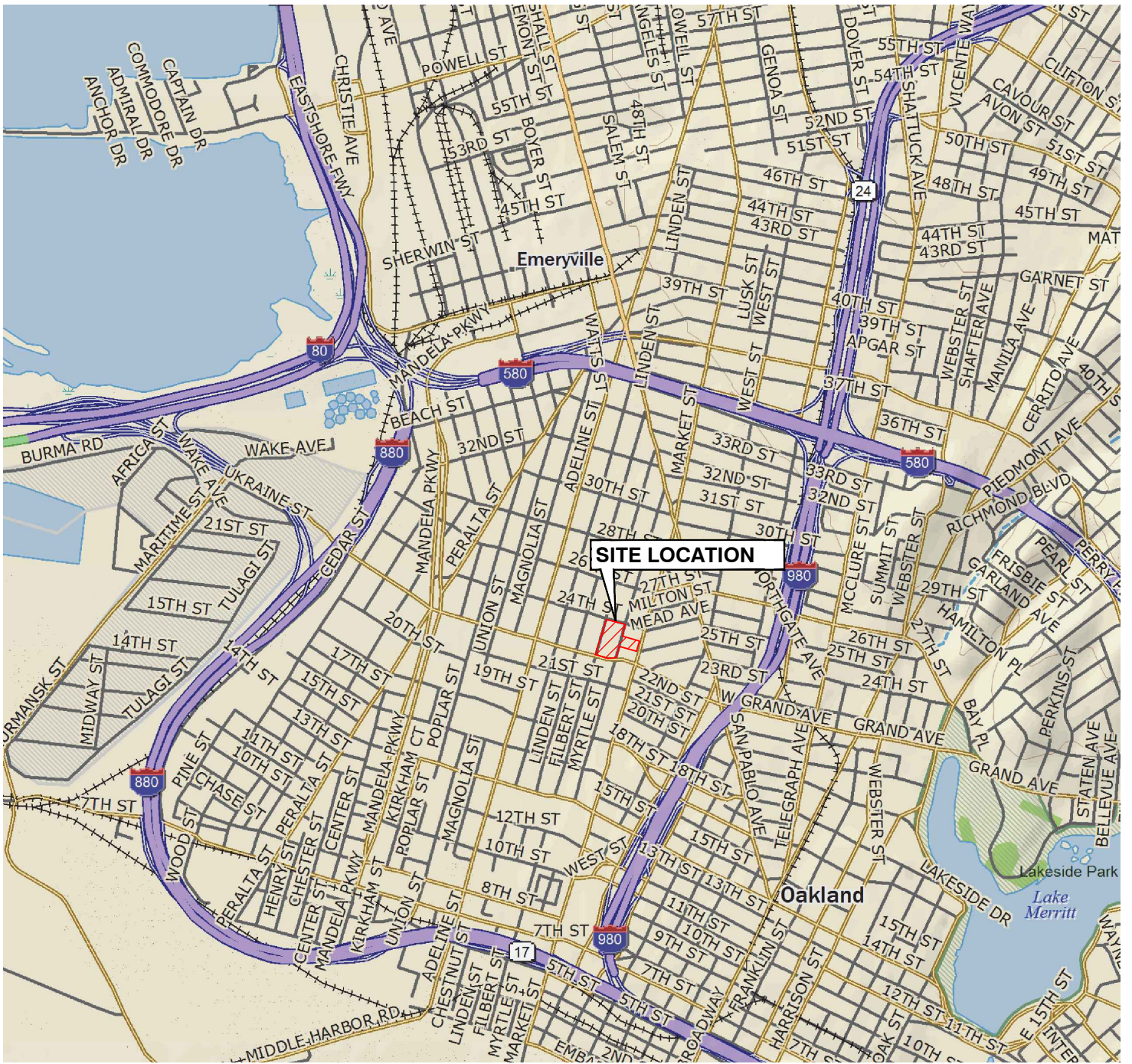
Figure 1 – Site Location Map

Figure 2 – Proposed Additional Soil and Soil Vapor Sampling Location – West Grand Block

Figure 3 – Proposed Additional Soil and Soil Vapor Sampling Location – Market Street Block



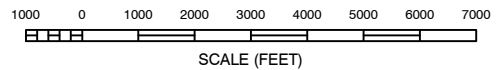
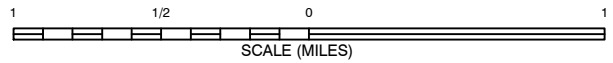
## Figures



North



CALIFORNIA



REFERENCE: USGS 7.5 MINUTE QUADRANGLE, OAKLAND WEST, CALIFORNIA



1340 Treat Boulevard, Suite 300  
Walnut Creek CA 94597-7966  
Ph: (925) 296-2133 Fax: (925) 941-1401

FOR:  
CITY VENTURES  
MULTIPLE PARCELS  
W. GRAND AVE, FILBERT, AND MYRTLE ST.  
OAKLAND, CALIFORNIA

**SITE LOCATION MAP**

FIGURE:

**1**

JOB NUMBER:  
185703027.200.0001

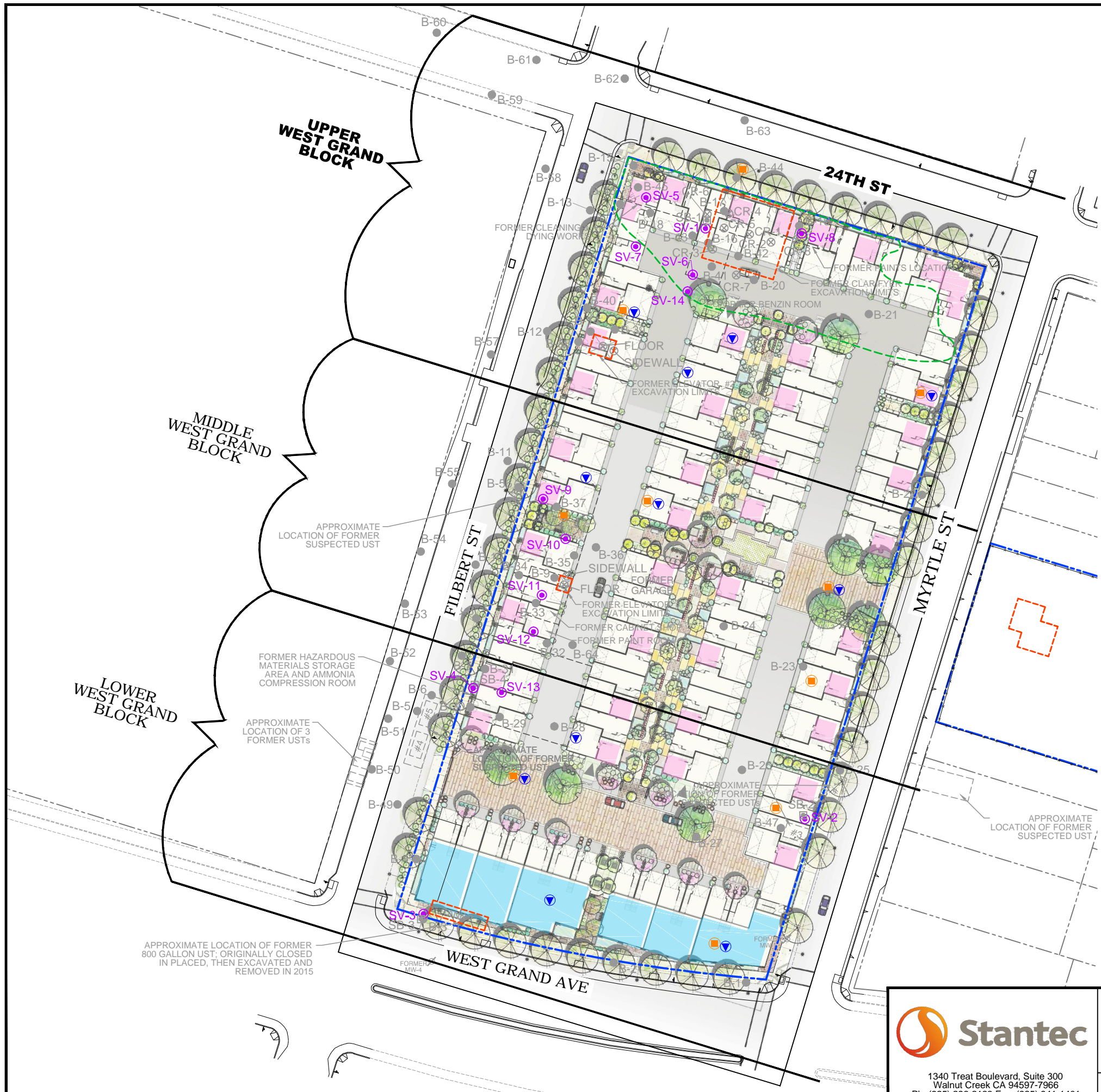
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MDR

CHECKED BY:  
DS

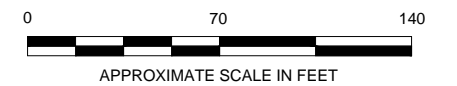
APPROVED BY:  
AS

DATE:  
2/27/17



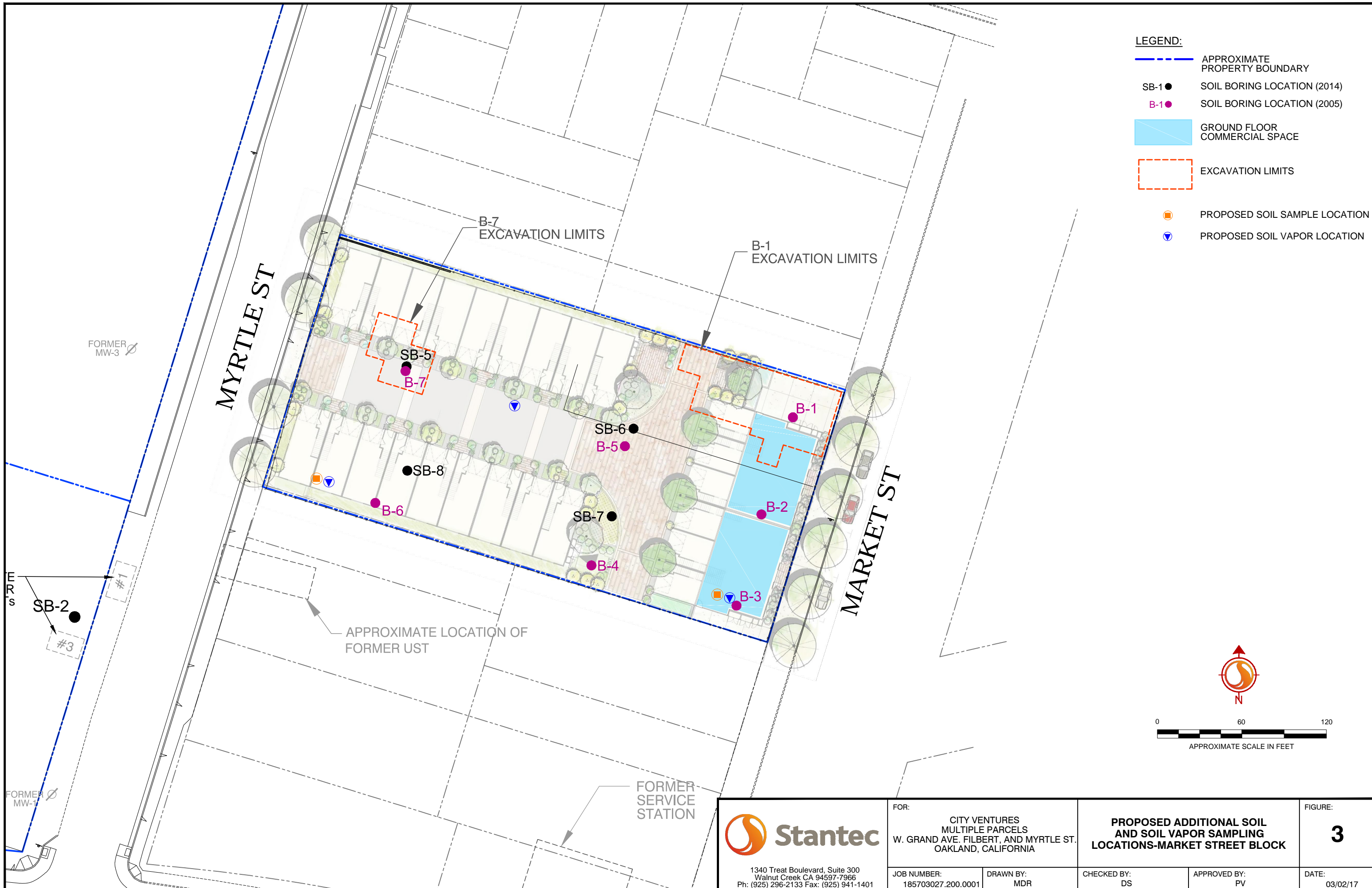


- LEGEND:**
- APPROXIMATE PROPERTY BOUNDARY
  - B-1 SOIL BORING LOCATION (1994)
  - SV-1 SOIL VAPOR SAMPLE LOCATION (2014 AND 2016)
  - SB-1 SOIL BORING SAMPLE LOCATION (2014)
  - SITE DEMOLITION/EXCAVATION SAMPLE LOCATION (2014)
  - APPROXIMATE LOCATION OF FORMER GROUNDWATER MONITORING WELL
  - GROUND FLOOR COMMERCIAL SPACE
  - GROUND FLOOR RESIDENTIAL SPACE
  - EXCAVATION LIMITS
  - CURRENT DEPRESSION IN NORTHERN PORTION OF SITE; FILL WILL BE PLACED DURING REDEVELOPMENT.
  - PROPOSED SOIL SAMPLE LOCATION
  - PROPOSED SOIL VAPOR LOCATION

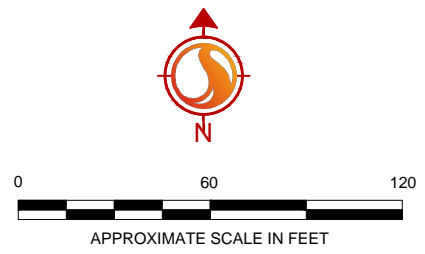


<p>1340 Treat Boulevard, Suite 300 Walnut Creek CA 94597-7966 Ph: (925) 296-2133 Fax: (925) 941-1401</p>	<p>FOR: CITY VENTURES MULTIPLE PARCELS W. GRAND AVE, FILBERT, AND MYRTLE ST. OAKLAND, CALIFORNIA</p>	<p><b>PROPOSED ADDITIONAL SOIL AND SOIL VAPOR SAMPLING LOCATIONS WEST GRAND BLOCK</b></p>		<p>FIGURE: <b>2</b></p>
	<p>JOB NUMBER: 185703027.200.0001</p>	<p>DRAWN BY: MDR</p>	<p>CHECKED BY: DS</p>	<p>APPROVED BY: PV</p>





- LEGEND:**
- APPROXIMATE PROPERTY BOUNDARY
  - SB-1 ● SOIL BORING LOCATION (2014)
  - B-1 ● SOIL BORING LOCATION (2005)
  - GROUND FLOOR COMMERCIAL SPACE
  - EXCAVATION LIMITS
  - PROPOSED SOIL SAMPLE LOCATION
  - ▼ PROPOSED SOIL VAPOR LOCATION



<p>1340 Treat Boulevard, Suite 300 Walnut Creek CA 94597-7966 Ph: (925) 296-2133 Fax: (925) 941-1401</p>	FOR: CITY VENTURES MULTIPLE PARCELS W. GRAND AVE. FILBERT, AND MYRTLE ST. OAKLAND, CALIFORNIA		<b>PROPOSED ADDITIONAL SOIL AND SOIL VAPOR SAMPLING LOCATIONS-MARKET STREET BLOCK</b>		FIGURE: <b>3</b>
	JOB NUMBER: 185703027.200.0001	DRAWN BY: MDR	CHECKED BY: DS	APPROVED BY: PV	DATE: 03/02/17