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**TERRAMAR**  
RETAIL CENTERS

June 18, 2015

Mr. Mark Detterman  
Senior Hazardous Materials Specialist, PG, CEG  
Alameda County Environmental Health  
1131 Harbor Bay Parkway  
Alameda, CA 94502

**RE: WORK PLAN FOR ADDITIONAL SITE CHARACTERIZATION  
FORMER ROCKRIDGE CLEANERS  
5100 BROADWAY, OAKLAND, CALIFORNIA**

Dear Mr. Detterman:

I declare, under penalty of perjury, that the information and/or recommendations contained in the attached document or report is true and correct to the best of my knowledge.

Sincerely,  
Terramar Retail Centers



Rick Henderson  
Vice President Construction & Design



June 18, 2015

P:\PROJECTS\Terramar\Oakland\5100 Broadway\Work Plan - Dry Cleaner Location\Work Plan.doc

Mr. Mark Detterman  
Senior Hazardous Materials Specialist, PG, CEG  
Alameda County Environmental Health  
1131 Harbor Bay Parkway  
Alameda, CA 94502

**RE: WORK PLAN FOR ADDITIONAL SITE CHARACTERIZATION  
FORMER ROCKRIDGE CLEANERS  
5100 BROADWAY, OAKLAND, CALIFORNIA  
TETRA TECH PROJECT NO. 117-7429001**

Dear Mr. Detterman:

This letter presents Tetra Tech's work plan for additional site characterization in connection with the former Rockridge Cleaners located at 5100 (5114 tenant space) Broadway in Oakland, California. The work plan was prepared based on discussions during the May 27, 2015 meeting between the Alameda County Environmental Health Department (ACEHD), Terramar Retail Centers (Terramar), and Terramar's consultant Tetra Tech, Inc. (Tetra Tech).

The former Rockridge Cleaners is located in "Building 5" of the six building Rockridge Shopping Center (Figure 1), which is slated for two phases of demolition and construction, resulting in the new "Shops at the Ridge" redevelopment (Figure 2). Buildings 5 and 6 will be demolished during the first phase (Phase I) of redevelopment, and generally will be replaced by contiguous Building K and Building A, respectively, along with stand-alone Building C and Building D (Figure 2). Terramar, with their builder Swinerton Builders, have begun demolition work, starting with Building 6 (former CVS) on June 9, 2015. However, prior to proceeding with redevelopment in the area of the former dry cleaner, the ACEHD is requesting additional site characterization of the dry cleaner compound tetrachloroethene (PCE), previously identified in connection with the former dry cleaner. Prior investigations of the dry cleaner site by Tetra Tech have detected relatively low PCE concentrations in soil and no detected PCE in grab groundwater samples.

The most recent operator of Rockridge Cleaners did not conduct on-site dry cleaning; however, a previous operator reportedly conducted on-site cleaning from the mid to late 1960s to the early 1980s. The history of the existing shopping center, along with the results of prior soil, groundwater and soil gas sampling were previously provided to the ACEHD by Tetra Tech. The attached Figure 3 shows the location of the former Rockridge

Cleaners, on-site features, prior sampling locations in and around the cleaners, and subsurface utilities.

In summary, low concentrations of PCE were detected in soil at three locations in 2001: SB-11-5' (6.3 micrograms per kilogram,  $\mu\text{g}/\text{Kg}$ ); SB-3-4' (14  $\mu\text{g}/\text{Kg}$ ); and SB-4-3.5' (17  $\mu\text{g}/\text{Kg}$ ). Elevated concentrations of PCE were subsequently detected in soil vapor samples collected in 2014 from two locations between soil borings SB-3 and SB-4: VMP-2 (3,800 micrograms per cubic meter,  $\mu\text{g}/\text{m}^3$ ); and VMP-3 (3,600  $\mu\text{g}/\text{m}^3$ ). PCE was not detected in soil (SS-VMP-1-1.5') or soil vapor (SS-VMP-1) in borings completed inside the dry cleaner tenant space in 2014, or in groundwater samples collected in 2001 and 2014 from two borings (SB-2 and SB-1) completed in front of the dry cleaner space (parking stall area). PCE was not detected in soil vapor at VMP-1, also completed in front of the dry cleaner in 2014. Figure 3 also shows a proposed soil excavation area, intended to remove the low concentrations of PCE detected in soil along a section of sanitary sewer line behind the former cleaners.

As there is some uncertainty as to the specific configuration of the Rockridge Cleaners lease space (and adjacent lease spaces) over time, this proposed additional site characterization work will extend into the rear areas of the two adjacent tenant spaces – 5112 Broadway (former First United Services Credit Union to the north) and 5116 Broadway (former North Oakland Village to the south) – and will also focus on the exterior areas to the rear of all three tenant spaces. Deliveries of bulk PCE in drums would have likely occurred at the rear of the dry cleaner, along with possible exterior storage of PCE drums. Dry cleaning equipment would have likely been located at the rear (northwest end) of the tenant spaces, as customers enter from the southeast.

Tetra Tech visually assessed all three tenant spaces on June 9, 2015, taking measurements of the tenant spaces. Photographs are attached. The former cleaners and former sample locations (from prior investigations) inside and near the dry cleaner location can be relocated after the building is demolished based on the recorded measurements, and paint markings applied to the ground from the June 9, 2015 site visit. The former dry cleaner tenant space is very small, measuring 15' wide by 45' long. The two adjacent tenant spaces are both 20' wide by 45' long.

No obvious indication of former on-site dry cleaning machines were observed in the three tenant spaces (i.e. no characteristic equipment bolt patterns, water staining, or degraded floor coverings). Small, regularly spaced bolt patterns in the floor are present along the southwest wall of the former Rockridge Cleaners, which were attachment points for the former clothes carousel rack (observed by Tetra Tech in 2014). A rectangular dust "stain"

is present on the vinyl floor tile along the southwest wall of the former cleaners, opposite former soil gas and soil sample locations (SS-VMP-1). The dust stain represents a former shelf/bench (observed by Tetra Tech in 2014).

What appear to be patched bolt holes are present in the floor toward the rear of 5116 Broadway (to the south). The patched bolt holes are regularly spaced around an approximate 10' by 10' area where two areas of mismatched vinyl floor tiles meet. The patched bolt holes likely represent lag bolts used to secure a former partition wall to the floor. The floor of 5112 Broadway (to the north) was mostly carpeted toward the front, but vinyl was present in the rear areas.

No indication of former PCE storage was observed outside of the three tenant spaces: no drum rings or degraded asphalt was observed. A 3-foot access door is located on the exterior northwest wall of the former Rockridge Cleaners space; however, the doorway has been dry-walled over from the interior of the lease space (bathroom). Deliveries of PCE are expected to have come through this doorway when the dry cleaner equipment was reportedly operational (mid to late 1960s to early 1980s).

The scope of work for completing the additional site characterization is presented below. The work can be implemented after the building is demolished, with or without the concrete slab remaining. Tetra Tech is currently preparing an environmental site management plan (SMP) to guide field screening of soils beneath the building slab during slab demolition at the former dry cleaner and two adjacent tenant spaces. The SMP is not intended to cover other areas of Building 5 slab demolition, but provisions will be included in the SMP for addressing potentially impacted soils outside of the prescribed SMP area(s). The SMP will provide field monitoring protocols (i.e. soil screening with field instrumentation) and action levels to guide soil segregation and stockpile management, if impacted soils are noted.

If this work plan is implemented after removal of the slab, the proposed soil boring locations may be modified to target areas of suspected soil impacts, if noted during implementation of the SMP.

## **SCOPE OF WORK**

A total of 12 soil borings and six temporary vapor monitoring probes will be advanced to 5 feet below ground surface. The locations of the borings are shown on the attached Figure 4. Three soil borings will be completed in each tenant space, along with one vapor monitoring probe, all biased to the rear of each tenant space where dry cleaning

machinery would have likely been located. The soil borings will be equally spaced in a triangular pattern within the rear 15-feet of each tenant space, with each vapor monitoring probe located near the center of the triangular soil boring pattern. Three paired soil boring/vapor monitoring probes will also be completed behind each of the three tenant spaces, near the exterior northwest wall of the building. The exterior boring locations may need to be adjusted based on utility conflicts (existing electrical transformer and underground electrical), and access restrictions due to stored materials.

The proposed soil boring locations are intended to provide reasonable aerial coverage of the areas where dry cleaning equipment likely would have been located and where PCE may have been used/stored.

The 18 borings will be advanced using a direct-push Geoprobe rig. Soil will be continuously cored in 5-foot lengths, using a core barrel lined with new acetate sample sleeves. Reusable sampling equipment will be decontaminated between samples using a liquinox and water solution, and rinsed with clean water.

From the 12 soil borings, two soil samples per boring, one at approximately 1-foot and one at approximately 5-feet in depth, will be submitted to the laboratory for analysis of volatile organic compounds (VOCs) using EPA Method 8260B. The soil samples will be analyzed at California Laboratory Services (CLS) in Ranch Cordova, California using an expedited 2-day laboratory turn-around time.

The 12 soil borings will be abandoned at the end of the field day by filling with cement grout. Decon wash water will be used to mix the grout to abandon the borings. Excess soil from soil cores will be left on-site unless field evidence of impact is noted; in such a case the soil will be placed in a drum or bucket for temporary on-site storage. No obvious field indications of soil impacts have been identified during prior sampling events in and around the former dry cleaner.

The six temporary vapor monitoring probes (VMPs) will be installed at the bottom of 5-foot soil borings. The VMPs will consist of a ½" diameter by 3-inch long stainless steel mesh probe screen, fitted to ¼" diameter stainless steel tubing to the surface. A brass ball valve and tubing barb will be fitted to the top of each VMP at the time of sampling. All VMP components will be compression-fit together to form a leak-tight assembly from the probe screen to the surface. The probe screen will be set in 0.5-foot of #2/12 sand (5 to 4.5 feet below grade), and the annular space sealed with hydrated bentonite from 4.5 feet to grade. The top of the tubing will be capped until sampling.

The VMPs will be allowed to equilibrate for at least 48-hours prior to sampling, per State of California Department of Toxic Substances Control (DTSC) vapor probe sampling guidelines.

Tetra Tech will return to the Property (a minimum of 48-hours after installation of the VMPs) to collect the soil vapor samples. The tubing cap will be removed and a new brass ¼-turn valve and hose barb will be compression fit to the top of the tubing at each location. Samples will be collected in 1-liter Summa canisters provided by the analytical laboratory (Air Toxics of Folsom, CA).

Sample and QA protocols will be consistent with the latest DTSC regulatory guidance, including pre-purging and leak detection (performing a shut-in test, and using a helium gas shroud during sampling). The helium concentration inside the shroud, placed over the VMP tubing, will be monitored with a portable helium detector prior to drawing the sample.

Following sampling, the VMPs will be pulled from the ground, and the bentonite grout allowed to settle and self-seal. Additional grout will be added to top off each boring as needed.

The soil vapor samples will be analyzed for VOCs, including PCE and breakdown products, using Method TO-15, and for helium, using ASTM D1946, as a QA check to assess whether “short-circuiting” may have occurred (leak of ambient air down into the screen area).

The soil vapor samples will be analyzed using an expedited 1-week laboratory turn-around time.

An Alameda County Water District (ACWD) permit is required for completing the borings; the permit will be obtained prior to the field work. The permitting process typically requires between 5 and 10 business days to complete, but ACWD can generally expedite the process if personnel are available to review the permit and perform the grout inspection.

Pre-field tasks will include visiting the site to mark boring locations, modifying the existing site-specific Health and Safety Plan, obtaining the boring permit, hiring subcontractors and acquiring field equipment. Underground Service Alert (Dig Alert) will also be notified at least 2 week days prior to drilling.

Mr. Mark Detterman, PG, CEG  
June 18, 2015  
Page 6

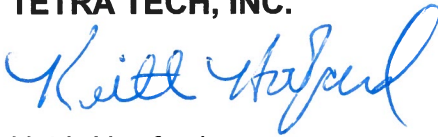
A brief site assessment report of the additional dry cleaner investigations will be prepared following receipt of the laboratory data. Results will be compared to relevant agency screening criteria for potential vapor intrusion – State of California Regional Water Quality Control Board Environmental Screening Levels (ESL values), and State of California DTSC Office of Human and Ecological Risk HHRA Screening Values (Note 3 – July 14, 2014).

Mr. Mark Detterman, PG, CEG  
June 18, 2015  
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## CLOSURE

If you have any questions regarding this work plan, please contact Tim Costello ([timothy.costello@tetrattech.com](mailto:timothy.costello@tetrattech.com)) or Keith Hoofard ([keith.hoofard@tetrattech.com](mailto:keith.hoofard@tetrattech.com)).

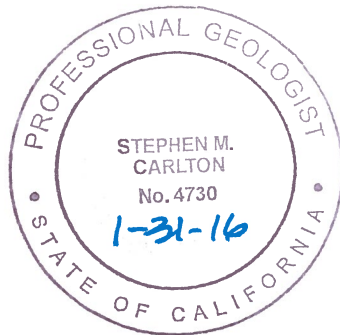
Sincerely,  
**TETRA TECH, INC.**



Keith Hoofard  
Senior Geologist



Stephen M. Carlton, PG, CHG  
Principal Hydrogeologist



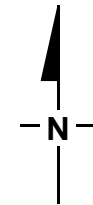
Attachments:      Figure 1 – Site Map  
                          Figure 2 – Redevelopment Plan  
                          Figure 3 – Existing Characterization Sampling Locations  
                          Figure 4 – Proposed Soil and Soil Vapor Sample Locations  
                          Photographic Documentation (11 pages)


cc:      Rick Henderson, Terramar Retail Centers ([rhenderson@terramarcenters.com](mailto:rhenderson@terramarcenters.com))  
          Tim Costello, Tetra Tech, Inc.

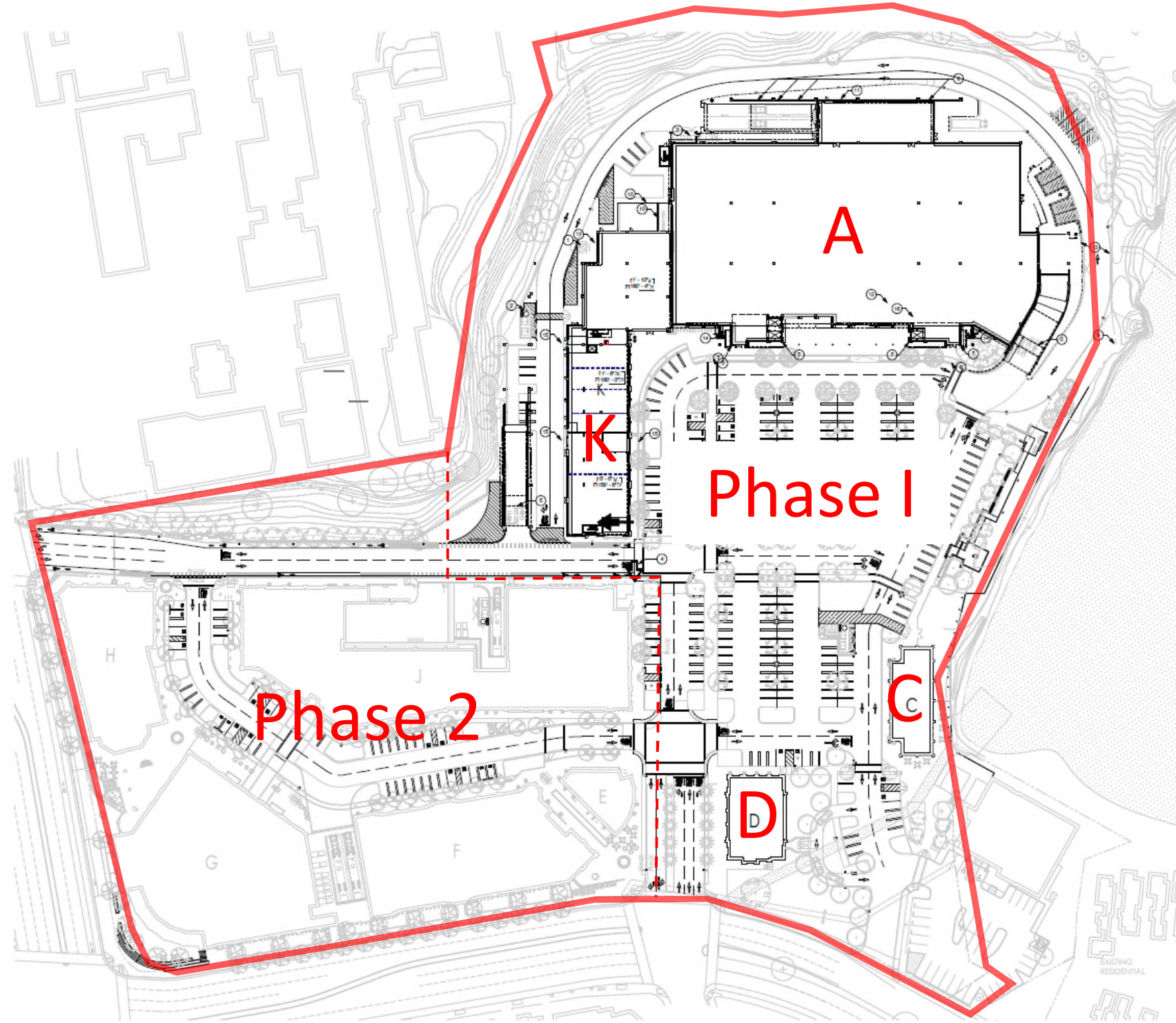




SOURCE: Google Earth Pro, April 5, 2014.



TITLE:		<b>Site Map - Existing Rockridge Shopping Center</b>	
LOCATION:		<b>5100 Broadway Oakland, California</b>	
 <b>TETRA TECH</b>	CHECKED:	TC	<b>FIGURE:</b>  <b>1</b>
	DRAFTED:	KDH	
	FILE:	117-7429001.	
	DATE:	05-19-15	



SOURCE: JRDV Architects, Drawing AS111, May 30, 2014.



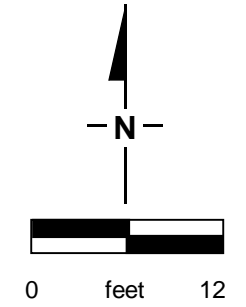
TITLE: <b>Redevelopment Plan - Proposed Shops at the Ridge</b>			
LOCATION: <b>5100 Broadway Oakland, California</b>			
 <b>TETRA TECH</b>	CHECKED:	TC	<b>FIGURE: 2</b>
	DRAFTED:	KDH	
	FILE:	117-7429001.	
	DATE:	05-19-15	





SOURCE: Google Earth Pro, April 5, 2014.

- Soil Boring – 2001 (GeoTrans)
- Soil Boring – 2014 (Tetra Tech – formerly GeoTrans)
- + Soil Vapor Monitoring Point - 2014 (Tetra Tech)
- + Sub-Slab Vapor Monitoring Point – 2014 (Tetra Tech)
- ▲ Proposed Soil Boring (5' bgs; sample 1' and 5')
- + Proposed Soil Vapor Monitoring Point (5' bgs)



<b>TITLE: Proposed Soil and Soil Vapor Sample Locations Former Rockridge Cleaners</b>			
<b>LOCATION: 5114 Broadway Oakland, California</b>			
<b>TETRA TECH</b>	CHECKED:	TC	<b>FIGURE: 4</b>
	DRAFTED:	KDH	
	FILE:	117-7429001.	
	DATE:	05-19-15	



**Photographic Documentation**  
**Former Rockridge Dry Cleaner – 5100 Broadway**  
**(5114 tenant space)**  
**Oakland California**  
**Project No.: 117-7429001**

**Photo: 1**

**Description:** Looking toward the front of Building 5, and the former Rockridge Cleaners tenant space

**Orientation:** Northwest



**Photo: 2**

**Description:** Rear (northwest wall) of former Rockridge Cleaners. Bathroom build-out (right) and hotwater heater/natural gas furnace build-out (center). Vinyl floor tile (VFT) area is 15' by 15'.

**Orientation:** Northwest



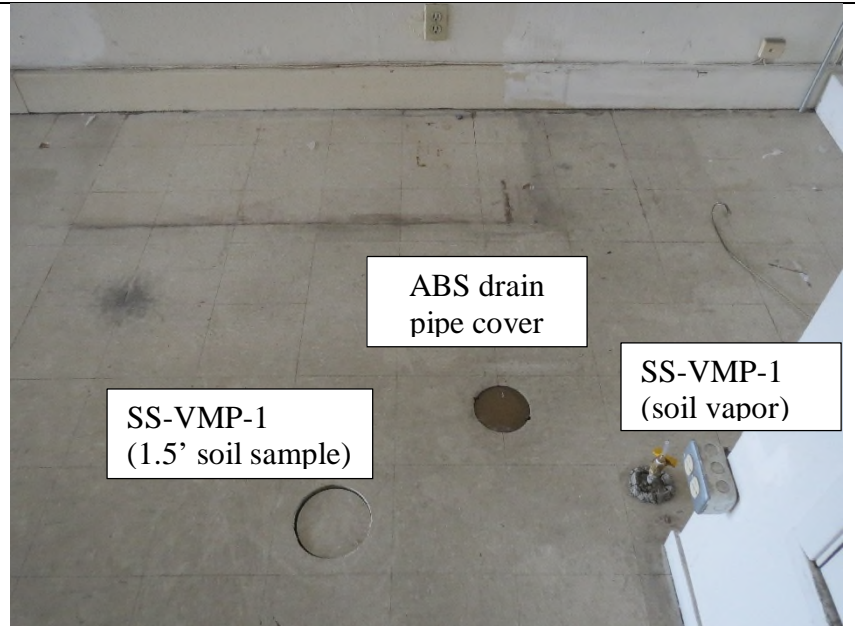


**Photographic Documentation**  
**Former Rockridge Dry Cleaner – 5100 Broadway**  
**(5114 tenant space)**  
**Oakland California**  
**Project No.: 117-7429001**

**Photo: 3**

**Description:** Floor drain cleanout (brass plate), and 2014 sub-slab vapor monitoring point (SS-VMP-1) and soil sample location (cored hole – SS-VMP-1-1.5'). Floor covering is 9" x 9" VFT.

**Orientation:** Southwest



**Photo: 4**

**Description:** Rectangular dust "stain" is location of former shelf/bench, observed by Tetra Tech in 2014. Dust stain measures 2.2' by 4.4'.

**Orientation:** Southwest





**Photographic Documentation**  
**Former Rockridge Dry Cleaner – 5100 Broadway**  
**(5114 tenant space)**  
**Oakland California**  
**Project No.: 117-7429001**

**Photo: 5**

**Description:** Small hot water heater and natural gas furnace closet.

**Orientation:** Northwest



**Photo: 6**

**Description:** Rear of former Rockridge Cleaners tenant space (between red lines). Access door is dry-walled over on the interior, inside bathroom. Privacy chain-link enclosure is full of Safeway items.

**Orientation:** Southeast





**Photographic Documentation**  
**Former Rockridge Dry Cleaner – 5100 Broadway**  
**(5114 tenant space)**  
**Oakland California**  
**Project No.: 117-7429001**

**Photo: 7**

**Description:** Purple paint on curb delineating location of former Rockridge Cleaners.

**Orientation:** Northwest



**Photo: 8**

**Description:** Purple paint delineating location of former Rockridge Cleaners, just outside the tenant space.

**Orientation:** Northwest







**Photographic Documentation**  
**Former Rockridge Dry Cleaner – 5100 Broadway**  
**(5114 tenant space)**  
**Oakland California**  
**Project No.: 117-7429001**

**Photo: 9**

**Description:** Adjacent tenant space southwest of former Rockridge Cleaners.

**Orientation:** Northwest



**Photo: 10**

**Description:** Moving sign of former tenant; North Oakland Village

**Orientation:** Northwest





**Photographic Documentation**  
**Former Rockridge Dry Cleaner – 5100 Broadway**  
**(5114 tenant space)**  
**Oakland California**  
**Project No.: 117-7429001**

**Photo: 11**

**Description:** Interior of 5116 Broadway.

**Orientation:** Northwest



**Photo: 12**

**Description:** Area of mismatched vinyl floor tiles (12" by 12"), towards rear of tenant space.

**Orientation:** Northwest





**Photographic Documentation**  
**Former Rockridge Dry Cleaner – 5100 Broadway**  
**(5114 tenant space)**  
**Oakland California**  
**Project No.: 117-7429001**

**Photo: 13**

**Description:** Former bolt holes in floor around mismatched floor tile area (5116). Likely represent former concrete bolts, securing a former partition wall to the floor.

**Orientation:** Northwest



**Photo: 14**

**Description:** Sink in small room along northwest wall of 5116 Broadway.

**Orientation:** Northeast





**Photographic Documentation**  
**Former Rockridge Dry Cleaner – 5100 Broadway**  
**(5114 tenant space)**  
**Oakland California**  
**Project No.: 117-7429001**

**Photo: 15**

**Description:** Bathroom along northwest wall of 5116 Broadway.

**Orientation:** Southwest



**Photo: 16**

**Description:** Former adjacent Credit Union, located northeast of former Rockridge Cleaners.

**Orientation:** Northwest





**Photographic Documentation**  
**Former Rockridge Dry Cleaner – 5100 Broadway**  
**(5114 tenant space)**  
**Oakland California**  
**Project No.: 117-7429001**

**Photo: 17**

**Description:** Interior of former Credit Union (5112).

**Orientation:** Northwest



**Photo: 18**

**Description:** Kitchen area to rear of tenant space (5112).

**Orientation:** North





**Photographic Documentation**  
**Former Rockridge Dry Cleaner – 5100 Broadway**  
**(5114 tenant space)**  
**Oakland California**  
**Project No.: 117-7429001**

**Photo: 19**

**Description:** Bathroom and server room to the rear of tenant space (5112).

**Orientation:** Southwest



**Photo: 20**

**Description:** Server room sheet vinyl floor (5112).

**Orientation:** South





**Photographic Documentation**  
**Former Rockridge Dry Cleaner – 5100 Broadway**  
**(5114 tenant space)**  
**Oakland California**  
**Project No.: 117-7429001**

**Photo: 21**

**Description:** Bathroom  
sheet vinyl floor (5112).

**Orientation:** Southwest

