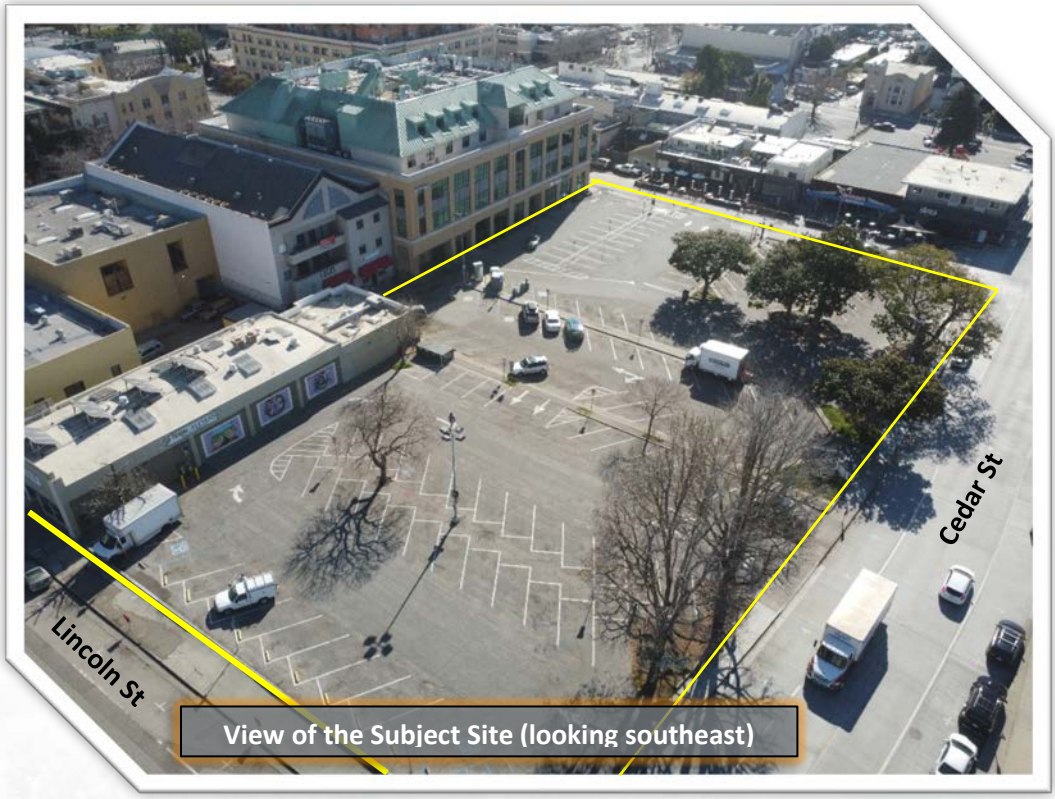
Weber, Hayes & Associates
Hydrogeology and Environmental Engineering
120 Westgate Drive, Watsonville, CA 95076
(831) 722-3580 // www.weber-hayes.com

Phase I/II Environmental Site Assessment

September 22, 2022



View of the Subject Site (looking southeast)

Subject Site:

113 Lincoln Street & City Parking Lot
Santa Cruz, California

Santa Cruz County
Assessor Parcel Numbers:
005-141-21, -11

Prepared for:

City of Santa Cruz Economic Development
c/o: Bonnie Lipscomb
337 Locust Street
Santa Cruz, CA 95060

Table of Contents

Table of Contents (continued)

Figures and Tables

Appendices

Abbreviations and Acronyms

APN	*Assessor's Parcel Number*	NFA	*No Further Action (de minimis Condition)*
ASTM	*American Society for Testing & Materials*	ppm	*Parts Per Million*
bgs	*Below Ground Surface*	NPL	*USEPA National Priorities List of Superfund*
CERCLIS	*Comprehensive Environmental Response, Compensation, and Liability Information System*	ppb	*Parts Per Billion*
CERC-NFRAP	*CERCLIS – No Further Remedial Action Required*	REC	*Recognized Environmental Condition*
CHMIRS	*California Hazardous Material Incident Report System*	SCC-EHS	*Santa Cruz County Environmental Health Services*
CREC	*Controlled Recognized Environmental Condition*	SLIC	*Spills, Leaks, Investigation & Clean-up*
CUPA	*Certified Unified Program Agency (A Local Haz-Mat Regulatory Oversight Agency)*	TPH	*Total Petroleum Hydrocarbons*
EDR	*Environmental Data Resources*	µg/L	*Micrograms per Liter*
ESA	*Environmental Site Assessment*	USGS	*United States Geological Society*
ESL	*Environmental Screening Level*	UST	*Underground Storage Tank*
ft^2	*Square Foot*		
HMBP	*Hazardous Materials Business Plan*	VCA	*Voluntary Cleanup Agreement*
HREC	*Historical Recognized Environmental Condition*	VCP	*Voluntary Cleanup Program*
LUST	*Leaking Underground Storage Tank*	VEC	*Vapor Encroachment Condition*
LTCP	*Low Threat Closure Policy*	VOC	*Volatile Organic Compound*
mg/Kg	*Milligrams per kilogram*		

Explanation of Phase I Environmental Site Assessment Terminology
(source: ASTM Standard E 1527-15)

'REC' - *Recognized Environmental Condition*: is the presence of hazardous substances or petroleum products in, on or at the subject property due to a release to the environment; (2) the likely presence of hazardous substances or petroleum products in, on or at the subject property due to a release or likely release to the environment; or (3) the presence of hazardous substances or petroleum products in, on or at the subject property under conditions that pose a material threat of a future release to the environment.". De minimis conditions are not *recognized environmental conditions*.

'CREC' – *Controlled Recognized Environmental Condition*: is a *recognized environmental condition* affecting the subject property that has been addressed to the satisfaction of the applicable regulatory authority or authorities with hazardous substances or petroleum products allowed to remain in place subject to implementation of controls (for example, activity and use limitations or other property use limitations". A condition considered by the environmental professional to be a *controlled recognized environmental condition* shall be listed in the findings section of the Phase I Environmental Site Assessment report, and as a *recognized environmental condition* in the conclusions section of the *Phase I Environmental Site Assessment* report.

'HREC' - *Historical Recognized Environmental Condition*: is a previous release of hazardous substances or petroleum products affecting the subject property that has been addressed to the satisfaction of the applicable regulatory authority or authorities and meeting unrestricted use criteria established by the applicable regulatory authority or authorities, without subjecting the property to any controls (for example activity and use limitations, or other property use limitations).

Before calling the past release a *historical recognized environmental condition*, the environmental professional must determine whether the past release is a recognized environmental condition at the time the *Phase I Environmental Site Assessment* is conducted (for example, if there has been a change in the regulatory criteria). If the EP considers the past release to be a *recognized environmental condition* at the time the *Phase I ESA* is conducted, the condition shall be included in the conclusions section of the report as a *recognized environmental condition*.

***De minimis Condition*:** a condition that generally does not present a threat to human health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies. Conditions determined to be de minimis conditions are not *recognized environmental conditions* nor controlled *recognized environmental conditions*.

Weber, Hayes & Associates
Hydrogeology and Environmental Engineering
120 Westgate Drive, Watsonville, CA 95076
(831) 722-3580 // www.weber-hayes.com

1.0 EXECUTIVE SUMMARY

This report contains results of a combined *Phase I & II Environmental Site Assessment (ESA)*, which was conducted to evaluate the potential presence of environmental liabilities for a 1.53-acre, two parcel commercial property located at 113 Lincoln Street in Santa Cruz (herein referred to as the subject "Site", see the *Topographic Location Map*, Figure 1). It is to our understanding that this assessment is being conducted to satisfy due diligence property screening for a redevelopment project.

This *Phase I ESA* report documents standard investigation steps that include historical land use research, a review of regulatory records pertaining to on-site and vicinity properties, Site reconnaissance, and interviews with persons knowledgeable about the Site. A synopsis of this research and fieldwork is presented in this *Executive Summary*.

1.1 Summary of the Physical Setting

The subject Site is a flat-lying, approximately 1.53-acre, two parcel property located in a predominantly commercial area of downtown Santa Cruz (see Section 3.0 for full details). The Site contains one wood framed concrete, slab on grade, commercial structure (5,406 square foot [ft^2]) and large city parking lot (59,764 ft^2) with limited landscaping (see photos in Appendix A).

Land use maps and aerial photographs show the Site had been developed with multiple residential homes since at least 1886 and appears to have mostly remained unchanged until approximately 1940 when the Site was redeveloped with a few commercial store structures and parking lots. The Site has remained mostly as a city parking lot since at least 1968 (copies of the historical aerials are included in Appendix B). The Site is bound on three sides by streets (see clip to the right), and commercial buildings to the east (see the *Aerial Vicinity Map*, Figure 2). The flat-lying property is situated at an elevation of approximately 14 feet above mean sea level. First encountered groundwater beneath the Site flows in a southeasterly direction and is known to fluctuate seasonally at depths of between 9-to-12 feet below ground surface (bgs).

1.29-Acre, Subject Site
(boundaries highlighted in blue)

1.2 Summary of Phase I Research

Phase I ESAs provide limited assurances of risk, since they rely on current Site conditions (i.e., a Site inspection), cooperative and candid interviews/questionnaires, and a limited database of regulatory and historical documentation. The Site inspections, interviews, and review of regulatory and historic documents are designed to identify real and potential environmental liabilities of concern. Potential liabilities have been categorized by the *American Society for Testing and Materials (ASTM)* into the following four conditions based on decreasing levels environmental risk:

1) *recognized environmental conditions (REC)*,
2) *controlled recognized environmental conditions (CREC),*
3) *historical recognized environmental conditions (HREC),* and
4) *de minimis conditions.*

Definitions of these terms are provided on page iv (see *Explanation of Environmental Assessment Terminology*).

1.2.1 Summary of On-Site Findings

As noted above, the flat-lying subject Site contains a single, one-story commercial structure (5,406 ft^2) a large city parking lot (59,764 ft^2), and some limited landscaping.

Phase I Historical Document Review (details in Section 4.0): Historical land use maps (Sanborn) and aerial photographs show the subject Site has been developed since at least 1886 with residential dwellings, outhouses, and stable/garage units. The Site remained mostly unchanged until sometime between 1940 and 1948 when a number of the dwellings were removed and replaced with two commercial (store) structures and parking lots. By 1968 the majority of the property contained a vehicle parking lot and only two structures (commercial) remained. By 1974, the existing commercial building (113 Lincoln Street) was the sole structure remaining and the remainder of the property contained a vehicle parking lot.

Until approximately 1940, adjoining and vicinity land-use was predominantly residential with the exception of Pacific Avenue. Beginning in the late 1940s residential land in the immediate vicinity appeared to be slowly replaced by commercial land uses (copies of historical aerials included in Appendix B).

Phase I Review of Agency Records and User Questionnaire (details in Sections 5.0 & 6.0): No environmental conditions of concern that were revealed for the Site and vicinity properties from the review of agency records or from the *User Questionnaire*.

Phase I Site Inspection (details in Section 7.0): The *Phase I ESA* includes an inspection of current environmental conditions at the Site. The inspection showed the subject property is largely encapsulated by a public city parking lot and concrete commercial structure (113 Lincoln Street) – see aerial photo on the cover of this report. The commercial building is well maintained and is occupied by a gym and contains shower/locker rooms and fitness equipment. Floor drains are present in each shower area. No bulk chemical storage or use of chemicals is conducted on Site. The majority of the Site is comprised as an asphalt covered, Public parking lot. There was some mild to moderate oil staining observed in individual vehicle pull in areas, but none of the staining was significant. No recognized

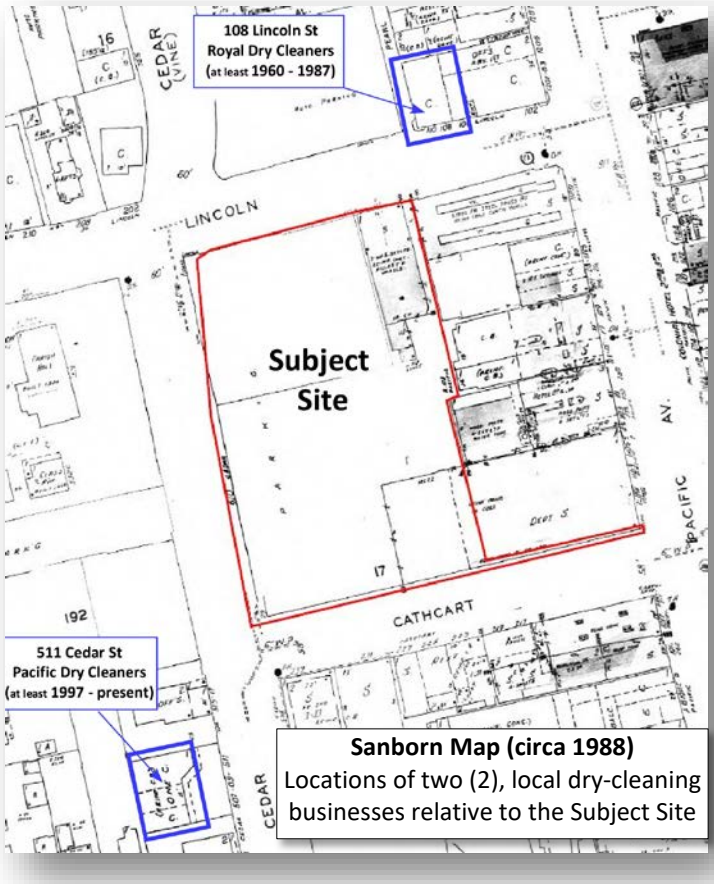
environmental conditions were identified based on current Site conditions observed during the inspection (see Photos in Appendix A).

Phase I Conclusions of On-Site Conditions: Based on the review of available historical and agency documents, interviews, and a Site inspection, **there were no <u>on-site</u> *recognized environmental conditions* identified**.

1.2.2 Summary of Vicinity Findings

Agency records document a number of commercial properties chemical releases in the vicinity of the subject Site (details presented in Section 5 and Appendix D). The majority of the chemical release sites have undergone case closure and obtained regulatory *No Further Action* status. However, there remains a well-documented, widespread low-concentration solvent plume (TCE, cis-1,2-DCE, & Vinyl Chloride) present in downtown area groundwater that is upgradient of the Site. This dilute plume has some limited *potential* to encroach (flow) beneath the subject Site, based on the southwesterly groundwater flow direction in the area (additional details in Section 5.4). This relatively low-concentration contaminant groundwater plume, which remains an open agency case, and is considered a **Controlled Recognized Condition (CREC)**.

In addition to documenting the location of known groundwater plumes, we also evaluated the potential for pollutant plume off-gassing in accordance with current standards for assessing vapor encroachment (i.e., ASTM E2600-10, which has established search distances for volatile chemical release sites for conservatively evaluating the <u>*potential*</u> for vapor (soil gas) encroachment). The upgradient, relatively low-concentration solvent plume described above appears to be the only <u>*documented*</u> release having the potential for vapor encroachment.



Sanborn Map (circa 1988)
Locations of two (2), local dry-cleaning businesses relative to the Subject Site

Historical land use records also document the presence of a long term of a dry cleaner to the north (upgradient) and one to the southwest (side/downgradient) of the Site. Dry cleaners are known to use relatively large quantities of chemicals, discharge dry cleaning solvent wastewater to drainage lines, and generate chemical wastes. The two cleaners are:

1. <u>108 Lincoln Street - Royal Dry Cleaners</u> (1960 – 1987): This dry cleaner may have closed operations before permitting and inspections were required by the local overseeing agency (Santa Cruz County Environmental Health Services, SCC-EHS).
2. <u>511 Cedar Street - Pacific Dry Cleaners</u> (at least 1997 – present): Operations/chemical use

records on file with SCC-EHS documented the use of chlorinated solvents (i.e., Tetrachloroethylene, aka: PCE) from at least 1997 to approximately 2005, after which dry cleaner wash solvent transitioned to a hydrocarbon-based alternative. Agency inspection records did not document any operational violations of concern for this business.

Neither of these two cleaner businesses have any agency-documented chemical releases (details described in Section 5). However, dry cleaning businesses in general have a record of solvent-laden wash water releases to drainage sumps and drainage piping so there exists some elevated *potential* risk of undocumented chemical releases that could encroach beneath the subject Site**.**

1.2.3 Phase I Research Findings

There were no data gaps encountered while completing this Phase I research.

- Phase I - On-site Conclusions: There were no on-site *recognized environmental conditions* (REC's) identified, based on the review of available historical and agency documents, interviews, and a subject Site inspection.
- Phase I - Off-site/Vicinity Conclusions:
  1. There is one (1), agency-regulated open chemical release case which documents a plume having some limited potential to impact (encroach upon) the subject Site. This upgradient, low-concentration, dilute groundwater plume is considered a ***Controlled Recognized Environmental Condition*** **(CREC)**, since the contaminant source is from an off-site responsible party and the overseeing agency has no characterization or cleanup requirements for the subject Site.
  2. A nearby, upgradient property located across Lincoln Street operated as a dry cleaner for 27+ years (108 Lincoln Street, details described in Section 5). Commercial dry cleaner businesses are considered "red flag" sites because many of these businesses are documented to inadvertently have released chemicals to the subsurface via operations (i.e., disposal of solvent laden wash water to sumps and drain lines), daily handling of chemicals, and the generation/disposal of chemical wastes. Because of long term dry cleaning operations located immediately upgradient of the subject Site, there is a risk of a historical, *undocumented* chemical releases based on the dry cleaning industry track record . Any release would then have some potential to encroach beneath the Subject Site. This is considered a ***Recognized Environmental Condition*** **(REC).** The primary concern is the *potential* for vapor encroachment into a building.
  3. To a lesser extent, a second, long term dry cleaner (26+ years of operation, and currently operating ~100-ft to the southwest of the subject Site (511 Cedar Street) has a similar encroachment risk from soil vapor. This active dry cleaner has no history of a documented chemical release, but as noted above, this "red flag" industry is a risk if in proximity to the subject site due to the likely operational history that includes standard-of-care disposal of solvent laden wash water to sumps and drain lines. This nearby property is considered a ***Recognized Environmental Condition***.

1.3 Summary of a Phase II Soil Vapor and Groundwater Sampling Program

Based on the Phase I findings (detailed in Sections 1.2.1 and 1.2.2 above), a Phase II sampling and testing program was implemented to evaluate subsurface Site conditions for *potential* contamination. The program included the following collection and State-certified-laboratory analysis of on-site shallow soils, groundwater, and soil vapor samples:

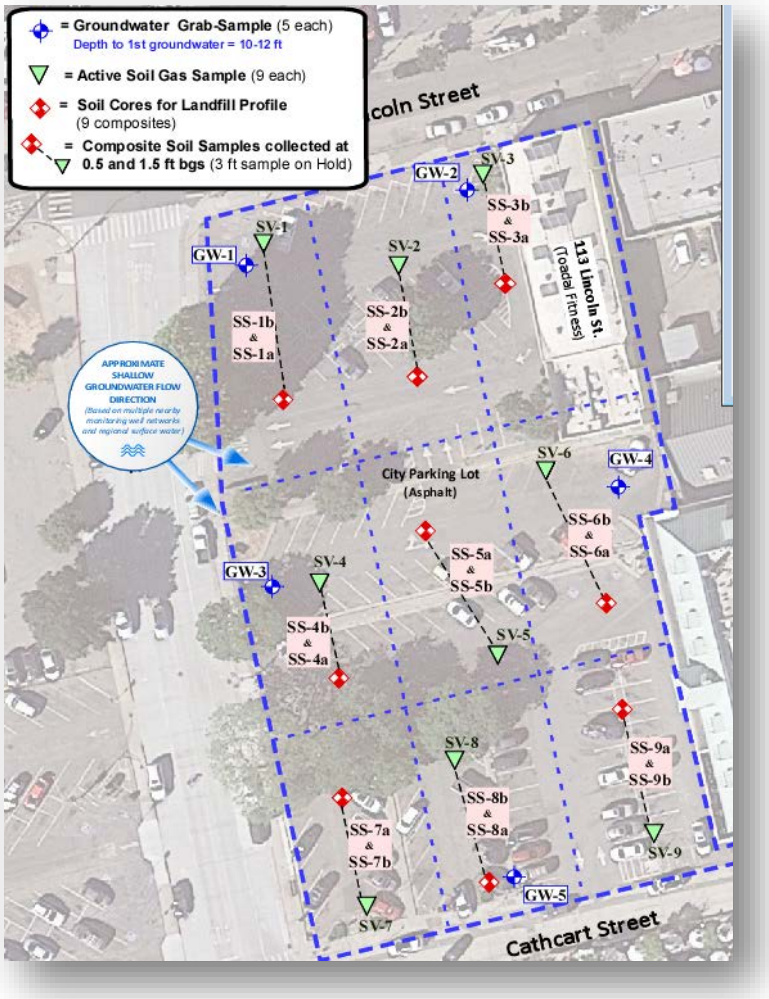


Figure 1 Phase II Sample Locations
(see Figure 5 for enlarged version of this aerial clip)

- Five (5) **groundwater samples (GW-1 through GW-5)** were collected from depths of between 9.0 and 11.0 feet bgs and analyzed for the full suite of *Volatile Organic Compounds* (VOCs) and fuel (gasoline).
- Nine (9) shallow, **soil vapor samples (SV-1 through SV-9)** were collected from a depth of 5 feet bgs from across the entirety of the Site and analyzed for the full suite of volatile contaminant compounds.
- A total of eighteen (18) **soil cores** (**SS-1A/B through SS-9A/B)** were obtained to depths of 4.0 feet bgs. Soil samples were retained from depths of 0.5, 1.5, and 3.0 feet bgs. The two shallow samples were tested at a State-certified laboratory analysis (2-point composites). The deeper samples were put-on hold for as-needed analysis. Samples were tested for landfill profiling and to evaluate for common urban contaminants of concern (fuel, oils and metals)

The laboratory results have been tabulated along with agency, risk-based threshold limits for comparison of detected concentrations (see Tables 1, 2 and 3). Results are summarized below:

1.3.1 Groundwater Sample Results (Table 3)

Representative samples of first encountered groundwater beneath the subject Site contained *only trace to low level detections* of two common urban contaminants: 1) gasoline range total petroleum hydrocarbons (TPH), and 2) the solvent compound 1,2-Dichloroethene (both cis-, and trans). All concentrations were detected well below established water quality and environmental screening thresholds.

No other *Volatile Organic Compounds* (VOCs) were detected in any of the groundwater samples.

1.3.2 Shallow Soil Vapor Sample Results (Table 2)

As noted above, nine (9), shallow soil vapor samples (5 feet bgs) were collected from across the Site and tested for the standard suite of volatile urban contaminants at a State-certified laboratory. Aside from an apparent anomalous bias detection that the laboratory identified to originate from natural oil/extract compounds[1], all remaining soil vapor sample results contained relatively low-concentrations volatile concentrations.

- Fuel-Based Volatile Detections: There were widespread, low-level concentrations of volatile, fuel-based constituent contaminants detected across the Site (i.e., **TPH-Gasoline & Benzene**). However, there were only two (2) sample locations (***SV-1 & SV-9***) having concentrations that exceeded the land use threshold for the common urban contaminant, Benzene. Specifically, low concentration benzene was detected between **4.1 µg/m³** to **4.8 µg/m³**, which slightly exceeds the residential (unrestricted) land use threshold of **3.2 µg/m³**.
- Solvent-Based Volatile Detections: Similarly, there were also widespread, low-concentrations of solvent-based volatile contaminants detected across the Site (i.e., **PCE & TCE**, two common degreaser compounds used in historic dry cleaning and automotive repair operations). However, only two (2) sample locations (***SV-7 & SV-9***) had concentrations that exceeded residential (unrestricted) land use thresholds. Specifically:
    - A relatively low concentration of PCE (**29 µg/m³**) was detected **at SV-7**, which exceeds the residential (unrestricted) land use threshold of **15 µg/m³**. And,
    - A relatively low concentration of TCE (**30 µg/m³**) was detected **at SV-9**, which exceeds the residential (unrestricted) land use threshold of **16 µg/m³**.
- Note: *None of the detected volatile soil gas concentrations exceeded commercial land use screening thresholds* (see Table 2 for additional details).

1.3.3 Soil Sample Results (Table 1)

Phase II shallow soil samples were primarily tested to evaluate potential reuse of on-site soils during redevelopment earthworks as well as for landfill disposal profiling of surplus soils. The laboratory results showed that the bulk of the shallow soils collected from across the Site were impacted with

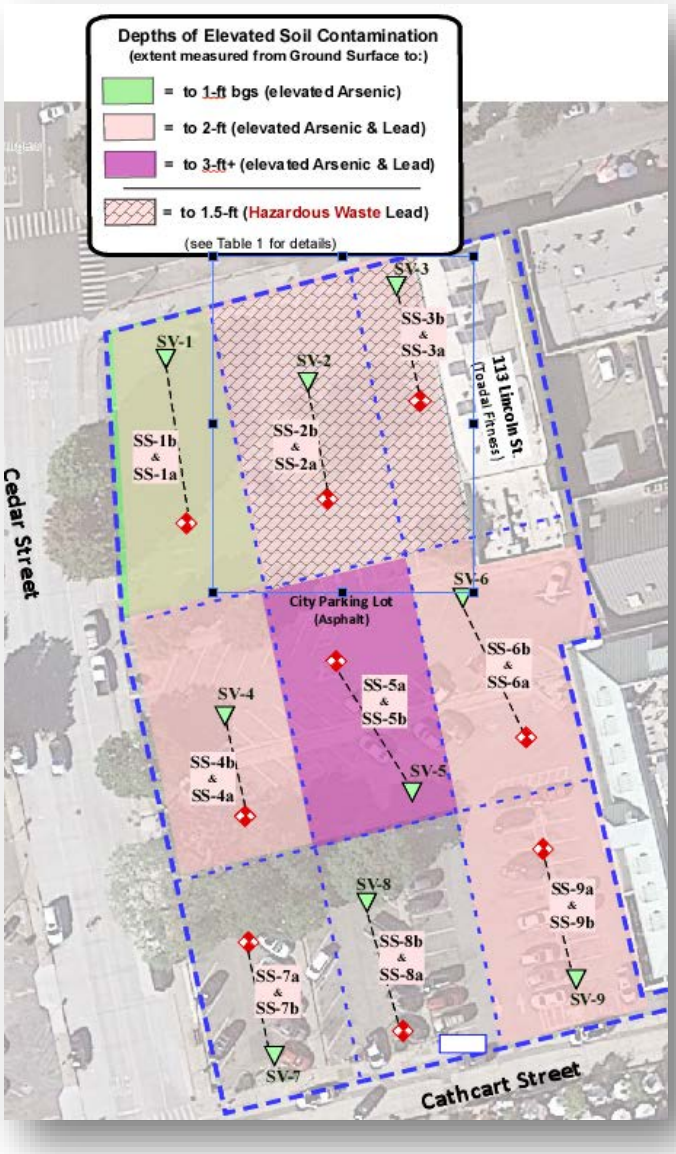
---

[1]: The testing laboratory (Pace Analytical) noted that there were anomalous concentrations of a natural oil/extract compounds (tentatively identified compounds of "Pinene, and some Camphor, and D-limonene" associated with natural plants and trees) at one location (SV-2). These natural (non-toxic) volatiles cause a bias in the "gasoline" range of TPH.

Likely source of detected Pinene, and some Camphor, and D-limonene: This parking lot property has a long history as a farmers' market, and it's most probable that a concentrated bottle of natural extracts was spilled at this location and seeped into the shallow soil. The laboratory has confirmed these non-toxic compounds generated a false positive of TPH-Gasoline at this location (SV-2). A copy of the testing laboratory's *Tentatively Identified Compound (TIC)* report is included at the back of Appendix F (lab reports).

elevated concentrations of Lead and Arsenic. Typical urban sources for these metal contaminants originate from Lead-based paint and weed and rodent control (i.e., arsenates).

Most of the elevated metal concentrations are characterized as "*non-hazardous*" and can be disposed of at a local, municipal landfill. However, much of the shallow soils across the Site exceeded residential (unrestricted) or commercial land use screening threshold limits and will need to be graded off and disposed of. Figure 5 (and the clip to the right) presents a plan view of the Site showing color-coded depths of soil that would need to be removed to achieve residential (unrestricted) land use thresholds (i.e., impacted soils by depth).



See Figure 5 for Enlarged Copy

<u>Preliminary Lateral/Vertical Soil Delineation</u>: Shallow soil samples (0.5-ft, and 1.5 ft) collected from nine (9) quadrants were initially collected and tested as 2-point composites (see attached Figure). Following receipt of the 2-point composite lab results (which indicated relatively widespread shallow contamination, primarily as Arsenic and Lead) the following additional analysis was completed:

1) The nine (9), 2-point composite soil samples were broken up and individually analyzed for Lead and and/or Arsenic to evaluate whether one or both of the soil samples that made up the composite were impacted. The goal behind this additional "discrete" sample analysis was to delineate and/or eliminate sub-quadrants as areas of potential concern. And;

2) The deeper, 3-ft samples on hold at the laboratory were lab-analyzed as composite samples. The goal behind the additional "deeper" sample analysis was to further delineate the vertical extent of contamination.

    - Note that only one (1) of the nine (9) deeper soil samples (SS-5) contained elevated contaminant concentrations, *which indicates that the vertical extent of contamination appears to be limited to less that 3-ft bgs*.

Additional Phase II testing details are provided in Section 8 of this report.

Landfill Disposal: As noted above, most of the contaminant metal concentrations detected in shallow soil are characterized as "non-hazardous" and can be disposed of at a local, municipal landfill. However, two samples (SS-2 at 1.5-ft and SS-3 at 0.5-ft bgs) contained hazardous waste concentrations of soluble Lead and will be required to be disposed of at a Class 1 landfill (see brick -shaded quadrants on the attached Figure 5). In summary, this Phase II screening of shallow, on-site soils provides a preliminary overview of soil conditions. Additional horizontal/vertical delineation will be needed to provide accepting landfills with enough data to take these soils.

1.4 Executive Summary: Conclusions and Recommendations

We have performed a standard of care, *Phase I/II Environmental Site Assessment* in conformance with protocols established in ASTM Practice E1527-15 and there were no data gaps encountered while completing this research.

Phase I - On-site Conclusions: There were no on-site *recognized environmental conditions* (REC's) identified, based on the review of available historical and agency documents, interviews, and a site inspection. research.

Phase I - Off-site/Vicinity Conclusions:

1. There is one (1), open (active), agency-regulated chemical release case having some limited potential to impact (encroach upon) the subject Site. This upgradient, low-concentration groundwater plume is considered a ***Controlled Recognized Environmental Condition*** **(CREC)**, since the contaminant source is from an off-site responsible party and the overseeing agency has no characterization or cleanup requirements for the subject Site.
2. Two long-term dry cleaners operated nearby including an upgradient property located across Lincoln Street operated as a dry cleaner for 27+ years (108 Lincoln Street) and to a lesser extent, a second, long term dry cleaner (26+ years of operation, and currently operating) located ~100-ft to the southwest of the subject Site (511 Cedar Street). These long-term dry cleaning businesses are considered a "red flag" operations because of their proximity and likely operational history that included the standard-of-care disposal of solvent laden wash water to sumps and drain lines. As a result, there exists an encroachment risk resulting from *undocumented* chemical release(s). These two cleaner sites are considered a ***Recognized Environmental Condition*** **(REC).** The primary concern is the *potential* for vapor encroachment into a building.

Phase II Sampling and Testing Program Conclusions: A Phase II sampling and testing program was implemented to evaluate subsurface Site conditions for *potential* contamination. The program included sample collection and State-certified-laboratory analysis of groundwater, soil vapor, and shallow soil samples:

1. Groundwater Results: Representative samples of first encountered groundwater beneath the subject Site contained only trace to low level detections of two common urban contaminants: 1) gasoline range total petroleum hydrocarbons and 2) the solvent compound 1,2-Dichloroethene (both cis-, and trans). All concentrations were detected well below established water quality and environmental screening thresholds. **These groundwater results indicate there has been no**

significant release of mobile contaminants to the subsurface from on-site or upgradient sources (i.e., fuels, solvents).

2. Soil Vapor Results: Aside from an apparent anomalous bias detection that the laboratory identified as a natural oil/extract compound (described above in Section 1.3.2), all soil vapor sample results were shown to contain relatively low-concentrations volatile concentrations. Specifically:

   - Fuel-Based Volatile Detections: Low level concentrations of the volatile fuel constituent benzene were detected in two of the nine soil vapor samples (SV-1 and SV-9), above unrestricted residential screening thresholds. It is notable that low level/trace concentrations of benzene and gasoline-range-TPH were detected across the Site. This, coupled with lack of fuel-based contaminant detections in groundwater, indicate that these very low vapor detections suggest that the contaminant source is insignificant and likely originates from near surface leaks from vehicles parked at this lot.

   - Solvent-Based Volatile Detections: Similarly, there were also widespread, low-level soil vapor concentrations of solvent-based volatile contaminants detected across the Site but not in groundwater. These low-level, soil gas concentrations indicate there has not been a significant chemical release at the site.

     Only two (2) of the nine (9) sample locations (SV-7 & SV-9) had concentrations exceeding residential (unrestricted) land use thresholds, but neither exceeded commercial land use screening thresholds). SV-7 & SV-9 are property line sample locations and the source of their relatively low-concentration solvent detections may originate as encroached soil gas from an unidentified off-site source, potentially the nearby drycleaner facility at 511 Cedar Street.

3. Soil Results: Phase II shallow soil samples were primarily tested to evaluate potential reuse of on-site soils during redevelopment earthworks as well as for landfill disposal profiling of surplus soils. The laboratory results showed that the bulk of the shallow soils collected from across the Site were impacted with elevated concentrations of Lead and Arsenic. Typical urban sources for these metal contaminants originate from Lead-based paint and weed and rodent control (i.e., arsenates).

   The majority of the elevated metal concentrations in soil are characterized as “non-hazardous” and can be disposed of at a local, municipal landfill. However, much of the shallow soils across the Site exceeded residential (unrestricted) or commercial land use screening threshold limits and will need to be graded off and disposed of during development activities. Figure 5 presents a plan view of the Site showing color-coded depths of soil that would need to be removed to achieve residential (unrestricted) land use thresholds (i.e., impacted soils by depth).

A copy of this report should be submitted to the overseeing agency, the Santa Cruz County Environmental Health Services (SCC-EHS), for their review and comment. Future earthworks and soil handling will need to be managed under an agency-approved *Soil Management Plan* and SCC-EHS will likely require some additional soil vapor evaluation to confirm vapor intrusion is not a concern. Supplemental soil delineation testing will likely be needed to further define the limits of shallow soil contamination and to provide accepting landfills with required acceptance data.

This concludes the *Executive Summary*.

2.0 PURPOSE AND SCOPE

This report contains results of a *Phase I Environmental Site Assessment* (ESA) that has been conducted to identify environmental liabilities resulting from historic or existing environmental risks for the subject properties. Completed work tasks conformed to the recommended guidelines established by the American Society for Testing and Materials (ASTM). *Limitations and Exceptions of Assessment* are listed at the end of this report.

The purpose of this ESA is to provide a professional opinion regarding *recognized environmental conditions* at the Site, including potential impacts from known environmental problems in the surrounding area. The term "*recognized environmental conditions*", is defined as "the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: (1) due to release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment. De minimis conditions are not *recognized environmental conditions*" (ASTM Standard E 1527-15). A short list of the essential *Phase I ESA* terminology is presented after the *Assessment Findings Summary* in the Table of Contents.

2.1 Defined Scope and Methodology

The scope of services completed for this *Phase I ESA*, included the following tasks:

- We reviewed historical maps, and aerial photographs, available geologic, topographic and groundwater data of the Site and vicinity (Sections 3.3 and 4 of this report).
- We completed a visual inspection of the Site, to check for indicators that might suggest a potential source of contamination such as current hazardous materials storage or use, unusually stained ground surfaces (soils, slabs), stressed vegetation, sumps/drains/tanks, and discarded hazardous material containers (Section 6 of this report). A copy of our *Site Inspection Checklist*, which includes Site photos, is included in Appendix A.
- We reviewed a *User Questionnaire* (Section 7.1, copy of completed questionnaire provided in Appendix A).
- We completed interviews with parties who have specialized knowledge about the subject Site (Section 7.2, interviewing documentation provided in Appendix A).
- We contracted with EDR, an information research firm specializing in environmental data collection, to conduct a regulatory list search of sites with underground fuel storage tanks (UST's), contaminated sites, hazardous waste generation or treatment-storage-and disposal facilities, and landfills located within ASTM survey radius. We evaluated the locations of all identified sites in relation to the Site (see Section 5.1, *Figure 4 – Surrounding Site Regulatory Review,* and Appendix C for EDR's Radius Report, which compiles and locates regulatory records from numerous local, state, and federal agencies).
- We reviewed reasonably ascertainable records of hazardous materials storage and documented releases from online, public right-to-know local and State regulatory databases and physical archives, such as the State of California GeoTracker and EnviroStor databases, and local

environmental health and/or building/planning department archives. Our review included a search for records pertaining to the subject Site and sites within the search distances established by ASTM E 1527-15 (see Section 5.1 through 5.4; Appendix D contains some referenced documents).

- We evaluated the collected information and prepared this summary report.

3.0 SITE SETTING & BACKGROUND

3.1 Site Description and Background

The subject property (the "Site") is a flat-lying, approximately 1.53-acre combined two parcel, property located in a predominantly commercial area of downtown Santa Cruz. The Site contains one wood framed concrete commercial structure (approximately 5,406 sq. ft.) and large city parking lot (approximately 59,764 sq. ft.) with limited landscaping (see clip, right). Specifications of the flat-lying subject Site include:

The Site (boundary outlined in blue) is largely utilized as vehicle parking.

- Santa Cruz County *Assessor's Parcel Numbers* (APNs): 005-141-21, -11
- According to Santa Cruz Assessor's Office the building was built in 1940.
- According to historical Sanborn maps the Site was developed with residential homes since at least 1886 and remained mostly unchanged until at least 1928.
- The majority of the Site has been utilized for vehicle parking since at least 1968.

The lands in the immediate vicinity of the Site (see Aerial Vicinity Map, Figure 2) contain mostly commercial operations, especially along Pacific Avenue. Residential land use is still present towards the west and southwest of the Site.

Historical land-use maps and records are discussed in Section 4 and the corresponding Sanborn Maps, historical aerial photographs and telephone directories are presented in Appendix B.

3.1.1 Utilities, Wells, and Storage Tanks

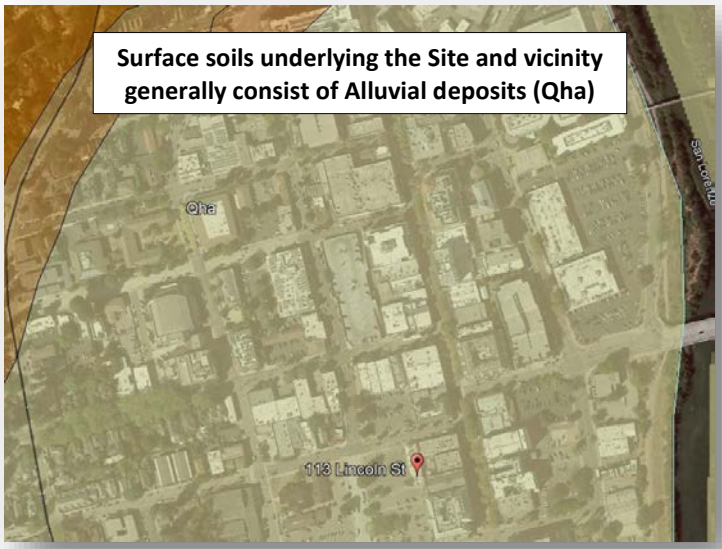
Utilities: Electrical provided by PG&E.

Wells/Sumps: No wells or sumps were identified. The 113 Lincoln building formerly contained a Spa which was removed sometime in 2010.

Storage Tanks: No current or historical storage tanks were identified.

3.2 Local Geological and Hydrogeological Conditions

Regional geologic maps and reports indicate that surface soils underlying the Site and vicinity area generally consist of Alluvial deposits ('Qha', see Regional Geologic Map), which generally consist of unconsolidated, moderately sorted silt and sand, and can also contain large amounts of gravel.



Based on review of nearby groundwater investigations, first encountered groundwater beneath the Site is assumed to be between 10-to-12 feet below ground surface and flows in a south-southeast direction.

4.0 HISTORICAL REVIEW

Historical maps, telephone directories, and aerial photographs can be a valuable resource for determining obvious past uses of the property. These records can provide evidence of notable land use changes to the property and potential clues of hazardous material storage (copies of these historical records are included in Appendix B). Land-use observations of these historical records are summarized below.

4.1 City Telephone Directories

Historical City Telephone Directories from 1960 through 2017 were available from a combination historical directory listing services. Copies of the reviewed listings are provided in Appendix B, under 'EDR City Directory'. This records review identified the occupants of the subject Site as follows (land-uses of potential concern are highlighted in boldface):

Target Property Occupants/Businesses		
Site Address	***Year***	***Occupants***
113 Lincoln Street *(subject Site)*	2017	Toadal Fitness
	2014	Toadal Fitness
	2010	Toadal Fitness
	2005	Toadal Fitness
	2000	Toadal Fitness
	1995	START Clinic
	1992	START Clinic
	1987	START Clinic health organization
	1980	Vacant
	1975	Western Auto Associate Store
	1971	Western Auto Associate Store
	1964	Western Auto Supply
	1960	Western Auto Supply

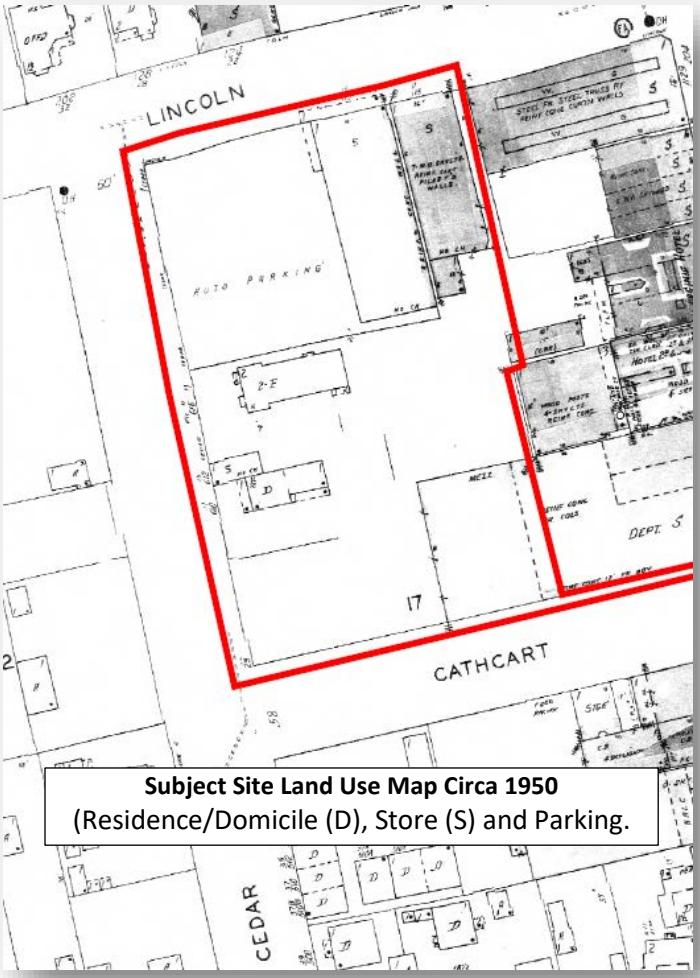
Vicinity Land-Uses: This record check listed the occupants of the adjoining/vicinity parcels as follows. Commercial/industrial land-uses that could be a potential source of concern are highlighted in **boldface**. Upgradient, side gradient and downgradient refer to the hydraulic position of the nearby property in relation to the subject Site.

Vicinity Property Occupants/Businesses		
Site Address	***Year***	***Occupants***
108 Lincoln Street *Up-gradient* (100 ft ENE)	2017 2014 2010 2005 2000 1995 1992 1987 1980 1975 1971 1964 1960	No Listing No Listing No Listing No Listing No Listing Listing Not Provided Listing Not Provided **Royal Cleaners** **Royal Cleaners** **Royal Cleaners** **Royal Cleaners** **Royal Cleaners** **Royal Dry Cleaners**
1128 Pacific Avenue *Up-gradient* (300 ft ENE)	2017 2014 2010 2005 2000 1995 1992 1987 1980 1975 1971 1964 1960	Bank of America ATM, World Market Bazaar Jade Jade No Listing Las Manos No Listing **Bank of America** **Bank of America** **Bank of America** Christian Science Reading Room Christian Science Reading Room Harnish Music Co. Graham Music Co.

In summary, reverse phone directories show *on-site* historical land-use has been predominantly commercial since at least 1960. A nearby property at 108 Lincoln Street was occupied by a dry cleaner from at least 1960 to 1987. Land use in the greater vicinity has been largely commercial with limited residential.

4.2 Sanborn Fire Insurance Maps

Sanborn fire insurance maps provide detailed snapshots of historical land-use within generally urban locations where an insurance company provided coverage. The Sanborn Map database was reviewed, and coverage was available for the following years: 1886, 1888, 1892, 1905, 1928, 1950, and 1988 (see Appendix B for copies of the Sanborn historical land use maps).



Subject Site Land Use Map Circa 1950
(Residence/Domicile (D), Store (S) and Parking.

Year	***On-Site*** **Sanborn map Observations**	***Off-Site*** **Sanborn Map Observations**
1886	Subject Site appears mostly developed with four residential dwellings along the northern portion on Lincoln Street and one dwelling and large shed on the southern half. Each dwelling has an associated outhouse.	The surrounding area to be mostly dwellings to the north, south, and west. Combination of commercial businesses and residential dwellings adjoin to the east.
1888	Site appears much the same as the previous image.	The surrounding area appears much the same as the previous image.
1892	The Site appears much unchanged from the previous images.	The surround area appears much the same, only business types appear to change.

Year	***On-Site*** **Sanborn map Observations**	***Off-Site*** **Sanborn Map Observations**
1905	Subject Site appears slightly changed, all five dwellings remain unchanged however a few stables/garages have been added.	The surrounding area remains mostly the same mix of residential and commercial. The residential dwellings adjoining to the east have been removed. Commercial business types continue to change.
1928	Subject Site appears to be mostly unchanged. The stables are now labeled as garage units.	The surrounding area continues to develop. Residential homes are slowly being converted to commercial land use. Adjoining operations to the east is completely developed with commercial stores and hotels. The church is no present to the west.
1950	Subject Site has undergone some significant change. The dwellings along the north have been replaced with two commercial stores adjoined by a parking lot. One dwelling/store combo unit along the west adjoined by a two-floor building. The southern portion of the Site only contains a portion of the eastern adjoining department store.	The surrounding area continues to develop, mostly along Pacific Avenue. Some dwellings still present to the northwest, west, and southwest. Adjoining land use to the east is made up completely of commercial store units.
1988	Subject Site has undergone further change. The Site currently only contains the 113 Lincoln Street building, large parking lot, and the tail end of the eastern adjoining department store.	The surrounding area continues to develop with residential units converting to commercial stores and offices.

4.3 Aerial Photographs

Twelve (12) historical aerial photographs ranging from 1931 through 2016 were obtained from EDR's collection. These aerial photographs provide snapshots of historical land-usage over the last 80 years. Copies of these same aerial photos are provided in Appendix B, which show more detail on the surrounding area than can be described in the summary descriptions below. The aerial photographs generally have approximate scales of 1 inch = 500 feet. The following table summarizes land-use observations from the available aerial photographs.

Year	***On-Site*** **Aerial Photo Observations**	***Off-Site*** **Aerial Photo Observations**
1931	The Site appears to be developed with residential dwellings, outhouses, and garage units resembling the 1928 Sanborn image. Also contains open natural areas with trees and other vegetation.	The vicinity area appears to be densely developed with commercial land use. Some residential units appear to be along the west.

Year	***On-Site*** **Aerial Photo Observations**	***Off-Site*** **Aerial Photo Observations**
1940	The Site appears mostly unchanged, however poor image quality makes it difficult to discern detail.	The surrounding area appears mostly unchanged, however poor image quality makes it difficult to discern detail.
1948	The Site appears as if it has undergone some significant change. Appears to resemble the 1950 Sanborn image. Two commercial structures and parking lot along the north. Parking lot, dwelling, two story building, and portion of eastern adjoining department store along the bottom half of the Site.	The surrounding area continues to develop with more commercial structures.
1956	The Site appears to be mostly unchanged from the previous image.	The surrounding area appears mostly unchanged.
1968	The Site has undergone some change, the last dwelling has been removed. The Site now only contains the two commercial structures along the north, and the portion of the eastern adjoining department store. The remainder of the Site appears to be a parking lot.	The surrounding area continues to develop with more residential units converting to commercial land use. The church and its large parking lot are now present across Cedar Street to the west.
1974	The Site has undergone minor change. Now only the 113 Lincoln Street building remains in the north, the remainder of the Site is a parking lot and still contains the tail end of the eastern adjoining department store along the south.	The surrounding area continues to develop with more commercial land use.
1982	The Site appears to be unchanged from the previous image.	The surrounding area continues to develop with less and less residential units visible.
1993	Site appears mostly unchanged, difficult to make out if the department store that extended on to the Site along the south is still there or demolished.	The surrounding area continues to develop.
2005 to 2016	Site appears as it does in its present-day state.	The surrounding area appears mostly the same.

Historical Sanborn maps and aerial photographs show that the Site had been developed since at least 1886 with residential dwellings, outhouses, and stable/garage units. Site remained mostly unchanged until sometime between 1940 and 1948 when the dwellings were mostly removed and replaced with two commercial structures and two parking lots. By 1968 the majority of the Site was made up of vehicle parking, and only two commercial structures were present along the north. By 1974 only one commercial structure remained along the north (113 Lincoln Street), with mostly the remainder of the Site made up as a vehicle parking lot.

Adjoining and vicinity land-use was predominantly residential with the exception of Pacific Avenue. Starting in the late 1940s residential land use was slowly replaced with commercial.

4.4 Topographic Maps

Historical topographic maps, which include the subject property and surrounding sites, were obtained, and reviewed (see Appendix B). There is no evidence from these topographic maps of significant geophysical or hydrogeological changes at the Site or surrounding area that would indicate the potential for negative impacts to Site soil or groundwater conditions.

4.5 Summary of Historical Review

Historical Sanborn maps and aerial photographs show that the Site had been developed since at least 1886 with residential dwellings, outhouses, and stable/garage units. Site remained mostly unchanged until sometime between 1940 and 1948 when the dwellings were mostly removed and replaced with two commercial structures and two parking lots. By 1968 the majority of the Site was made up of vehicle parking, and only two commercial structures were present along the north. By 1974 only one commercial structure remained along the north (113 Lincoln Street), with mostly the remainder of the Site made up as a vehicle parking lot.

Adjoining and vicinity land-use was predominantly residential with the exception of Pacific Avenue. Starting in the late 1940s residential land use was slowly replaced with commercial.

5.0 REGULATORY AGENCY INFORMATION

5.1 Database Search of Federal and State Environmental Records

Records of hazardous material, petroleum products and waste storage, as well as unauthorized releases of said materials into the environment, are required by law to be maintained by regulatory agencies overseeing these environmental conditions. An information research firm specializing in environmental data collection, *Environmental Data Resources (EDR)*, generated a Radius Map Report for the Site (included in Appendix C). The Radius Map Report identifies sites listed in the selected regulatory databases, presents location maps and details on identified sites, provides a description of the Federal and State agency data reviewed, and limitations to the search. The search specifically documents sites having registered underground fuel storage tanks (UST's), hazardous waste generation, hazardous waste treatment-storage-disposal, and subsurface contamination. Search distances are per ASTM's E-1527 13 standard (see Appendix C for a list of all sites and full descriptions of all regulatory databases). The database search identified the following information for the target property and surrounding sites.

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
STANDARD ENVIRONMENTAL RECORDS								
Lists of Federal NPL (Superfund) sites								
NPL	1.000		0	0	0	0	NR	0
Proposed NPL	1.000		0	0	0	0	NR	0
NPL LIENS	1.000		0	0	0	0	NR	0
Lists of Federal Delisted NPL sites								
Delisted NPL	1.000		0	0	0	0	NR	0
Lists of Federal sites subject to CERCLA removals and CERCLA orders								
FEDERAL FACILITY	0.500		0	0	0	NR	NR	0
SEMS	0.500		0	0	0	NR	NR	0
Lists of Federal CERCLA sites with NFRAP								
SEMS-ARCHIVE	0.500		0	0	1	NR	NR	1
Lists of Federal RCRA facilities undergoing Corrective Action								
CORRACTS	1.000		0	0	0	0	NR	0
Lists of Federal RCRA TSD facilities								
RCRA-TSDF	0.500		0	0	0	NR	NR	0
Lists of Federal RCRA generators								
RCRA-LQG	0.250		2	1	NR	NR	NR	3
RCRA-SQG	0.250		3	6	NR	NR	NR	9
RCRA-VSQG	0.250		0	0	NR	NR	NR	0
Federal institutional controls / engineering controls registries								
LUCIS	0.500		0	0	0	NR	NR	0
US ENG CONTROLS	0.500		0	0	0	NR	NR	0
US INST CONTROLS	0.500		0	0	0	NR	NR	0
Federal ERNS list								
ERNS	TP		NR	NR	NR	NR	NR	0
Lists of state- and tribal (Superfund) equivalent sites								
RESPONSE	1.000		1	0	2	0	NR	3
Lists of state- and tribal hazardous waste facilities								
ENVIROSTOR	1.000		1	1	6	6	NR	14
Lists of state and tribal landfills and solid waste disposal facilities								
SWF/LF	0.500		0	0	0	NR	NR	0

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
Lists of state and tribal leaking storage tanks								
LUST	0.500		5	9	23	NR	NR	37
INDIAN LUST	0.500		0	0	0	NR	NR	0
CPS-SLIC	0.500		3	6	4	NR	NR	13
Lists of state and tribal registered storage tanks								
FEMA UST	0.250		0	0	NR	NR	NR	0
UST	0.250		2	0	NR	NR	NR	2
AST	0.250		0	0	NR	NR	NR	0
INDIAN UST	0.250		0	0	NR	NR	NR	0
Lists of state and tribal voluntary cleanup sites								
INDIAN VCP	0.500		0	0	0	NR	NR	0
VCP	0.500		0	0	1	NR	NR	1
Lists of state and tribal brownfield sites								
BROWNFIELDS	0.500		0	0	0	NR	NR	0
ADDITIONAL ENVIRONMENTAL RECORDS								
Local Brownfield lists								
US BROWNFIELDS	0.500		0	0	0	NR	NR	0
Local Lists of Landfill / Solid Waste Disposal Sites								
WMUDS/SWAT	0.500		0	0	1	NR	NR	1
SWRCY	0.500		0	0	0	NR	NR	0
HAULERS	TP		NR	NR	NR	NR	NR	0
INDIAN ODI	0.500		0	0	0	NR	NR	0
ODI	0.500		0	0	0	NR	NR	0
DEBRIS REGION 9	0.500		0	0	0	NR	NR	0
IHS OPEN DUMPS	0.500		0	0	0	NR	NR	0
Local Lists of Hazardous waste / Contaminated Sites								
US HIST CDL	TP		NR	NR	NR	NR	NR	0
HIST Cal-Sites	1.000		0	0	2	0	NR	2
SCH	0.250		0	0	NR	NR	NR	0
CDL	TP		NR	NR	NR	NR	NR	0
Toxic Pits	1.000		0	0	0	0	NR	0
CERS HAZ WASTE	0.250		3	6	NR	NR	NR	9
US CDL	TP		NR	NR	NR	NR	NR	0
PFAS	0.500		0	0	0	NR	NR	0
AQUEOUS FOAM	TP		NR	NR	NR	NR	NR	0
Local Lists of Registered Storage Tanks								
SWEEPS UST	0.250		3	4	NR	NR	NR	7
HIST UST	0.250		1	3	NR	NR	NR	4
CERS TANKS	0.250		1	0	NR	NR	NR	1

NR = Not reviewed, as per the search distances established in ASTM 1527-15. This table was excerpted from the EDR Radius Report, provided in Appendix C. A full list of the databases reviewed is provided on page GR-1 of EDR's report. EDR updates many of these listings on a quarterly or semi-annual basis.

5.1.1 Subject Property

113 Lincoln Street ("*Target property" in EDR Radius Report*) ***was not listed*** in any of the regulatory databases.

5.1.2 Surrounding Sites

Our review of the EDR Radius Report revealed the following notable business operations / properties in the Site vicinity that have notable records of hazardous materials and/or petroleum hydrocarbon releases, waste generators and other notable regulated activities.

- Federal Chemical/Fuel Release Sites: The records search **did not identify any sites** located within a 1-mile radius from the subject Site that was listed on the USEPA National Priority List (NPL) or Superfund.
- State Chemical/Fuel Release Sites: The records search **identified seventeen (17) sites located within a ¼-mile radius** of the Site as having a record of a petroleum or other chemical impact to soil or groundwater [i.e., Leaking Underground Storage Tanks (LUST), Cortese, Spills Leaks Investigations and Cleanup (SLIC), Comprehensive Environmental Response, Compensation, and Liability

Information System (CERCLIS) and Voluntary Cleanup Priority Listing (VCP)]. **Six (6) of these sites are located within ⅛-mile radius** from the subject Site, while the remainder are situated between ⅛- and ¼-mile radius from the subject Site. See *Figure 5* for relative locations of these completed release investigations.

- One (1) release case has obtained case closure from the applicable regulatory agency and is upgradient of the Site.
- Three (3) of the release sites have obtained case closure from the applicable regulatory agency and are downgradient of the Site.
- Two (2) of the release cases are open and downgradient of the Site.

Brief descriptions of these cases are presented in the table below.

Facility / Location/ Database Source(s)	Details
Former Bank of America 1128 Pacific Avenue (202 ft ENE) **Down-gradient** Databases Listed: LUST, UST,CERS	**Leaking Underground Storage Tank (LUST): Closed** Bank of America identified soil and groundwater in northwest portion of the property was impacted by hydrocarbons. It was assumed that the former Richfield service station which occupied the property until 1962 was the source. TPH-Gas at 1,300 ppm, TPH-Diesel at 3,300 ppm, and oil and grease at 44,000 ppm were identified in SOIL. TPH impacted soil was excavated and removed. Four quarters of groundwater monitoring was conducted. Only two of the four wells ever contained any detectable concentrations of hydrocarbons, with the highest concentrations detected being TPH-H at 10 ppm and TPH-D at 3.2 ppm and TPH-Mo at 2.3 ppm. Waterboard provided closure in 1995. Link: GeoTracker (ca.gov)
Pacific Union Apartments 1018 Pacific Avenue (163 ft ESE) **Down-gradient** Databases Listed: LUST	**Leaking Underground Storage Tank (LUST): Closed** The site contained one oil (150 gallons) and one waste oil (150 gallons) tanks. Significant remedial work tasks were completed in 2002 and 2003 in conjunction with ongoing site development tasks including UST removal, injection of oxygen-enhancing compound, soil excavation, and extraction/disposal of contaminated groundwater. A groundwater monitoring program was implemented until the site achieved case closure in Fall 2012. Residual soil contamination still exists off-site near the sidewalk and near public utilities beneath Cathcart Street that could pose an unacceptable risk to utility workers in the area in the future. Link: GeoTracker (ca.gov)
Greyhound Station 425 Front Street (371-ft ESE) **Down-gradient** Databases Listed: CPS-SLIC, RCRA-LQG, DEED, ENVIROSTAR	**CPS-SLIC: CLEANUP PROGRAM SITE-: OPEN VERIFICATION MONITORING** Metals, petroleum hydrocarbons, and polycyclic aromatic hydrocarbons are present in soil at concentrations exceeding residential and commercial/industrial health-based screening criteria. The site is overseen by Department of Toxic Substances Control for ongoing activities, which include the maintenance of a surface cap which covers impacted soils. The site is currently paved with asphalt and is used as a parking lot for buses. Link: GeoTracker (ca.gov)

Facility / Location/ Database Source(s)	Details
Santa Cruz Metro Station 920 Pacific Avenue (410-ft SE) **Down-gradient** Databases Listed: CPS-SLIC, CERS, RCRA Nongen	**CPS-SLIC: CLEANUP PROGRAM SITE-: OPEN SITE ASSESSMENT** Total petroleum hydrocarbons as diesel and motor oil, polynuclear aromatic hydrocarbons, and metals in soil were all detected above regulatory screening concentrations. A Phase I/II ESA was completed at the METRO station to investigate the presence of contaminants in soil, soil vapor, and groundwater. The consultant recommended development of a delineation work plan, a human health risk assessment, and remediation strategies. A workplan for additional investigation is underway. Link: GeoTracker (ca.gov)
Front Street Garage 601 Front Street (531-ft NE) **Down-gradient** Databases Listed: LUST, CERS	**Leaking Underground Storage Tank (LUST): Closed** Site is currently a city parking structure. Subsurface petroleum contamination was discovered in 1997. Two USTs were provided closure in 1999. Extensive groundwater monitoring was conducted from 1999 to 2005 when it was provided closure. Groundwater contamination was comingled with the southern end of the San Lorenzo Park Plaza plume. Link: GeoTracker (ca.gov)
Pacific Bell 709 Center Street (588-ft NW) **Up-gradient** Databases Listed: LUST, RCRA-LQG, CERS, UST	**Leaking Underground Storage Tank (LUST): Closed** Former Pacific Bell building. During removal of 8,000-gallon single wall UST in June of 1992, TPH-Diesel at 40 ppm was detected near fil end of tank. During excavation a detection TPH-Diesel at 12,000 ppm was detected north of the tank. Approximately 240 cu yards of petroleum impacted soil was removed. Follow up groundwater monitoring was conducted, two rounds of sampling from four wells. Only one well contained TPH-D at max concentration of 310 ppb. No other constituents of concern were identified. DTW ranged from 8 to 9 ft bgs, and reportedly flowed in a southwest direction. Case received closure from county in 1993, and waterboard in 1995. Link: GeoTracker (ca.gov)

- Underground Storage Tanks (USTs): The database search of generally historical regulatory records **identified nineteen (19) sites** located within a ¼-mile radius having a current or historical record of permitted UST's (UST, HIST UST, SWEEPS UST, Cal FID UST and/or Indian UST). A lot of these records overlap the same site.
- Hazardous Waste: The records search **identified forty-four (44) sites** located within a ¼-mile radius as having records showing generation and proper disposal of hazardous waste, typically a waste oil or oily waste (RCRA-SQG, RCRA-LQG, RCRA-NonGen, FINDS, Notify 65, EDR Proprietary Records).
- Dry Cleaners: The records **identified (2) sites** operating as dry cleaners within ¼-mile radius. The identified two sites are:
    - **108 Lincoln Avenue (Royal Cleaners)** -city directory listings indicate this site was present since at least 1960 to 1987, which was peak period of drycleaners utilizing the chemical solvent, tetrachlorethylene (PCE), as a primary cleaning agent. No records were on file for review with SCC-EHS regarding this historical drycleaner.

- **511 Cedar Street (Pacific Dry Cleaners)** -A 1997 HMMP record on file with SCC-EHS documents the storage and use of tetrachloroethylene (PCE), with a maximum storage capacity of 100 gallons at any given time. Records suggested that operations remained unchanged until 2010 when ownership changed, and the use of PCE was replaced with a hydrocarbon-based chemical (Aliphatic Hydrocarbon – DF 2000). Inspection records available for review didn't show any violations of concern for this drycleaner site.

- Orphan Sites: The EDR report lists **three (3)** unmapped sites ("***orphans***") obtained from the list of databases, for which EDR was not able to determine an exact location. Upon further review, these listings do not pertain to conditions of concern on properties that are hydraulically upgradient or adjoining to the subject Site.

Combined *Regulated Hazardous Sites - ¼-Mile Radius Map* (Figure 8): A comprehensive radius map documenting nearby release sites, hazardous materials and waste management sites, UST/AST storage and other significant regulated environmental conditions, is presented on Figure 4.

5.2 Geotracker / EnviroStor File Review

Records of hazardous materials storage and releases can also be found in state regulatory agency databases, such as the California *State Water Resources Control Board* Geotracker® database and *Department of Toxic Substances Control* EnviroStor® database. A review was conducted for records on the subject Site, vicinity properties, and additional sites identified in the Federal and State environmental database review detailed in Section 5.1.

- Our review of the California State GeoTracker database, conducted in February 2022, did not reveal any additional sites within a ¼-mile radius of the subject Site as having a record of a release of contamination to soil or groundwater (see Figure 8 – 'Surrounding Site Regulatory Review').

5.3 Local Oversight Agency File Reviews

Subject Site Records: Records regarding the Site were searched via the Santa Cruz County Environmental Health online database.

113 Lincoln Ave (Site): Records on file for the 113 Lincoln Street property pertained to permits and inspection reports for the on Site "Spa". The Spa was removed in November 2010. No violations of concern were identified (see Appendix D for records).

511 Cedar Street (Pacific Dry Cleaners): Records on file for this dry-cleaning operation spanned from 1997 to 2017. Records pertained to both inspections and permitting for the bulk storage and use of dry-cleaning chemicals. Records indicated that the facility utilized Tetrachlorethylene (PCE) based solvent from at least 1997 to 2005, with a max daily amount of 100 gallons at any given time. Operations changed in approximately 2005 when the PCE based solvent was replaced by a hydrocarbon-based alternative (DF-2000 Fluid). Reviewed inspection records did not reveal any violation of concern.

5.4 Vapor Encroachment Conditions (VEC) Review

In accordance with current standards for assessing vapor encroachment (ASTM E2600-10), we evaluated the Site and its vicinity for vapor encroachment conditions, or conditions that may indicate that sources and pathways for hazardous volatized chemicals to enter current or future on-site buildings that are present at the Site and/or Site vicinity. ASTM E 2600-10 defines the following minimum search distances for the *Area of Concern* for vapor encroachment:

- **1/3-mile** for known or suspected volatile/semi-volatile chemical contaminated sites (e.g., a dry cleaners site with a PCE release)

  We reviewed the nearby *solvent / volatile organic compound (VOC) release sites* discussed in Section 5.1-5.3 and assessed them for vapor encroachment potential (copy included in Appendix C). We **identified five** (5) nearby solvent / volatile organic compound (solvent) release sites located within a 1/3-mile radius of the subject Site. Three of these cases are downgradient and do not have potential for encroachment. Two of these cases are upgradient of the Site, however after review of subsurface data collected from these properties, it does not appear they have potential to encroach beneath the Site. Here is a brief summary of these two upgradient solvent release properties:

  - 1010 Center Street (1,290 ft NNW) – Former Auto Repair & Paint Shop– This property operated as an automotive repair and body shop from at least 1950 to 1971 and was equipped with concrete sump. In 2011 the sump was closed in place and a single downgradient boring contained concentrations of TCE at 170 ug/L in groundwater**.** The property is currently an open case under oversight of CCRWQCB. A recent Phase II assessment was conducted by Partner in September 2021 documenting soil, soil vapor, and groundwater beneath the Site. Five borings were conducted within the building and both upgradient and downgradient locations. Groundwater results showed elevated concentrations of TCE in the two borings west of the former sump at 54 and 16 ug/L. Soil vapor results showed detections of PCE and TCE in all five vapor samples with the highest concentrations found west of the former sump location. Detected PCE concentrations ranged from 3.2 to 460 ug/m^3, and TCE concentrations ranged from 5.4 ug/m^3 to 560 ug/m^3 (see Appendix D for details). Results indicate that the release is limited to the extent of the building and potentially only nearby offsite locations along the west and south of the property. Based on the provided data, **it does not appear that this release has potential to impact the Subject Site**. Link: GeoTracker (ca.gov)

  - 600 Front Street (750 ft NE) – Former Kedrick's Laundry – This location is currently a CVS Pharmacy, however formerly contained a dry cleaner from 1928 to 1960 when all buildings were removed to develop the present-day River Walk Plaza. This property is approximately 200 ft west of the San Lorenzo River, which flows south towards the Monterey Bay. This property is currently an open case with both SCC-EHS and CCRWQCB, with plans for continual soil vapor monitoring. A few investigations have already been conducted on Site, documenting both hydrocarbon and solvent based chemicals (PCE) in soil, soil vapor, and groundwater. In 2017 a Site Conceptual Model was conducted by Schutze & Associates documenting previous findings, potential sources, and subsurface conditions (see Appendix

D for details). The extend of contamination in soil vapor and groundwater appear limited to the property bounds with some potential for encroaching towards the south, and southeast in the direction of the San Lorenzo River. **It does not appear that this release has the potential to impact the Subject Site**. Link: GeoTracker (ca.gov)

- 207 Church Street (700 ft NNW) – Former Santa Cruz Sentinel – This location underwent a number of investigations after discovering a solvent (TCE) based groundwater plume beneath the property during a property transaction screening in 2009. Annual groundwater monitoring conducted at the property documented concentrations of TCE as high as 24 ug/L. Groundwater data from 2009 to 2012 documents concentrations of TCE and its breakdown daughter products that exceeded drinking water thresholds spanned from Union Street to just north of Walnut Avenue. There is no data south of Walnut Avenue which is only one block north of the Subject Site. Concentrations in groundwater collected in 2010, on the north side of Walnut Avenue, contained elevated concentrations of cis-1,2-DCE at 38 ug/L and Vinyl Chloride 1.1 ug/L which exceeds drinking water thresholds. Ultimately, the case was closed in 2013 based on results of extensive sampling suggesting the source of the plume appeared to originate from an upgradient property, and soil vapor intrusion into on site buildings was not a threat. There is some limited potential of encroachment from this well documented, relatively low-level groundwater plume and is considered a **Controlled Recognized Condition (CREC).** Link: GeoTracker (ca.gov)

- **1/10-mile** for known or suspected petroleum hydrocarbon contaminated sites (e.g., a gasoline release from a fueling station)
  - We reviewed the nearby *petroleum hydrocarbon release sites* discussed in Section 5.1 for vapor encroachment potential. We **did not identify any** site within a 1/10-mile radius of the subject Site as having a documented VOC-containing plume with potential of encroachment.

We did not identify any sites within the applicable search distances as having the potential to pose the risk of vapor encroachment on the subject Site.

5.5 Summary of Regulatory Review

In summary, our review of regulatory databases and local/State agency record repositories revealed there are a few chemical release sites in the general vicinity of the Site; however we did not identify any documented sites with the potential to impact the Site. While no documented Sites were identified with potential of impacting the Site, there were at least two historical dry cleaner sites identified within close proximity of the Site.

6.0 USER QUESTIONNAIRE & INTERVIEWS

6.1 User Questionnaire

A *User Questionnaire* was completed by Brian Borguno, Development Manager with City of Santa Cruz – Economic Development Department (the User), signed on February 8, 2022.

User Questionnaire Summary	
Reason for Performing ESA?	Other: Parcels are identified for redevelopment project
Environmental Liens?	No.
Land-Use Limitations?	No.
Any Specialized Knowledge of the Subject Site or Adjoining Properties?	Current use of Site is City Parking Lot and Commercial building.
Discounted Price Relative to Fair Market Value?	No.
Current or Historical Chemical/Hazardous Materials Usage?	No
Environmental Clean Ups	No

The User indicated that the *Phase I ESA* is being completed as requirements for redevelopment project.

6.2 Additional User Provided Documentation

The User did not provide any additional information pertaining to hazardous materials and environmental conditions at the Site.

6.3 Summary of Questionnaire/Interview Review

The *User Questionnaire* and *interviews* are intended to identify previous or current land-uses that may indicate environmental impacts or provide further details regarding previously identified environmental impacts and regulatory release investigation cases. Our interview with Brian Borguno did not reveal any additional items of concern pertaining to the Subject Site. Copies of interviewing documentation are included in Appendix A.

7.0 SITE INSPECTION

7.1 Overview

A Site inspection was conducted on February 9, 2022, to note potential sources of contamination associated with on-site activities. A copy of the completed *Site Inspection Checklist*, which contains detailed documentation of the Site survey including a photographic record of the inspection, is presented in Appendix A.

Site Inspection Observations	
Subject Property Observations:	
Current Use of Property: Site is largely encapsulated by an asphalt parking lot and single commercial concrete building. The commercial building is occupied by a fitness gym company. The building contains a couple floor drains in the shower/locker room area for both the men and women. Majority of building space is occupied by fitness equipment. No bulk chemical storage. Site appeared to be relatively well maintained. The remainder of the Site is largely an asphalt parking lot used for city public parking. Limited landscaping areas. Some mild staining and patching was observed in areas across the parking lot.	
Potable Water Source	City of Santa Cruz
Interior Drains? Where to?	Locker room areas for men and women have a drain for both showers and bathroom area.
Sewage Disposal Source	City of Santa Cruz
Pools of Liquid / Odors?	No pools or odors were observed.
Hydraulic equipment?	None observed.
Storage tanks?	None observed.
Subject Property Exterior Observations:	
Pits, Ponds, Lagoons?	None observed.
Stained soil or pavement?	Mild staining observed across parking lot.
Storm water discharge?	Stormwater inlets along the street perimeter.
Wells or Water Towers?	None observed.
Sumps?	None observed.
Electrical Infrastructure?	Mostly buried utilities including electrical, in ground transformers.
Hazardous Materials or Petroleum Products?	None observed.
Neighborhood Observations:	
Topography of property and vicinity	Mostly flat.
Current uses of adjoining properties	**West:** Church / Parking Lot / Cedar Street **South:** Commercial / Cathcart Street **East:** Commercial **North:** Commercial / Parking Lot / Lincoln Street

7.2 Summary of Site Inspection

The Site inspection showed that the subject Site is mostly encapsulated by an asphalt city parking lot and concrete commercial structure (slab on grade). Commercial structure is occupied by a gym. No recognized environmental conditions were identified based on the inspection of the Site.

8.0 PHASE II SAMPLING INVESTIGATION

Weber, Hayes and Associates was retained to design and implement a Phase II assessment of soil, soil vapor, and groundwater to evaluate the subject property for *potential* contamination based on the identified Recognized Environmental Conditions (RECs) identified during the Phase I portion of this assessment. Phase I research identified two items of concern which included a documented upgradient VOC plume (containing TCE and associated daughter products) and an over 27 year history of two dry cleaner facilities operating in close proximity of the Site.

8.1 Fieldwork

On May 5 and 6, 2022 under the supervision of Weber, Hayes and Associates field personnel, Trinity Drilling (C-57 License #1010926) advanced nine (9) temporary shallow soil vapor wells (5 feet bgs), nine (9) shallow (i.e., 4 feet bgs) soil borings, and five (5) Hydropunch groundwater borings across the subject Site (see Figure 5). Drilling and sampling procedures followed our *Field Methodology for Direct Push Sampling*, which is included in Appendix E. Soil cores from direct push boring locations were logged by an experienced environmental geologist and examined for any evidence of contamination (i.e., odor, discoloration, or detections of VOCs via a hand-held photoionization meter).

Field observations, photo sheets, and field methodology for sample collection are documented in Appendix E.

8.2 Soil Sampling

Soil sampling was conducted by Weber, Hayes and Associates field staff in accordance with our *Field Methodology for Shallow Soil Sampling and Hydraulic Driven Probe Sampling* (see Appendix E).

Soil cores were obtained from eighteen (18), shallow soil borings for the initial laboratory analysis of eighteen (18) composite samples. Soil samples were collected from 0.5 ft, 1.5 ft, and 3 ft from each core and composited at the laboratory. The initial 0.5-ft and 1.5-ft samples were tested, with the deeper samples put on laboratory hold pending analysis of the shallow samples.

All soil samples were analyzed for the standard landfill acceptance suites of CAM-17 Metals, and Total Petroleum Hydrocarbons.

All boring locations were properly sealed with neat cement grout following sample collection in accordance with state and local standards. Soil cuttings were containerized in a 55-gallon drum. We are currently arranging the proper disposal of investigative waste generated during this drilling program.

Results of Soil Sampling (Table 1): State-certified laboratory results were compared with regulatory-established, *Environmental Screening Levels* (ESL's), which are designed to provide initial (Tier 1) evaluation on whether a detected contaminant concentration poses an unacceptable risk to human

health and safety, or the environment. Screening concentration limits for individual contaminant compound are established in look-up tables and are based on the potential land use (e.g., residential, commercial or construction worker) and receptor being protected (i.e., human heath, groundwater (leaching), ecological protection, and/or nuisance). All laboratory analytical results have been compared against screening limits established for: human health risk for both unrestricted residential and commercial land use.

See summary tables for individual agency limits and associated compound exceedances. The State-Certified laboratory reports are included as Appendix F and the results are described below. The State-Certified laboratory results revealed the following:

- **Total Petroleum Hydrocarbons** (0 to 0.5 ft): Trace to low level detections of TPH as gasoline and diesel were detected across the Site all below unrestricted residential and commercial screening thresholds. A few locations contained a bit higher concentrations of TPH as motor oil ranging from 21 to 1,445 mg/kg, however all detections were below both unrestricted residential and commercial screening thresholds.

- **Shallow Arsenic** (0 to 0.5 ft): All detected Arsenic concentrations which exceeded 9 mg/kg were flagged as 'elevated' (above the established naturally occurring background concentration for Santa Cruz). Elevated Arsenic concentrations were detected in six (6) of the nine (9) composite sample locations at 0.5 feet bgs (SS-1, SS-2, SS-4, SS-5, SS-6, and SS-9). Elevated concentrations were relatively high and ranged from 27.9 to 282 mg/kg. Subsequent discrete analysis of each of the six (6) two-point composite samples at 0.5 ft which contained elevated concentrations of Arsenic also contained elevated concentrations of Arsenic in both discrete sample components (i.e., SS-1A and SS-1B).

- **Deeper Arsenic** (1.5 to 3 ft): Three (3) composite sample locations (SS-4, SS-5 and SS-9) contained elevated detections of Arsenic at 1.5 feet bgs. Of those three (3) only one (1) composite sample (SS-5) contained elevated Arsenic at 3 feet bgs.

- **Shallow Lead** (0 to 0.5 ft)**:** Two (2) composite sample locations (SS-2 and SS-3) contained elevated concentrations of Lead at 0.5 feet bgs. Specifically**, SS-2 at 0.5 ft** contained a concentration of Lead at **117 mg/kg** which is above the unrestricted residential land use threshold established at **80 mg/kg**, and **SS-3 at 0.5 ft** contained a concentration of Lead at **568 mg/kg** which is above the commercial screening threshold established at **320 mg/kg**.

  Discrete samples (SS-2A/SS-2B and SS-3A/SS-3B at 0.5 ft), analyzed for Lead, showed elevated detections in three of the four discrete samples (see Table 1 for details).

- **Deeper Lead** (1.5 to 3 ft)**:** Five (5) of the nine (9) composite sample locations contained elevated Lead concentrations at 1.5 ft bgs, with only one location (SS-5) containing elevated Lead at 3 ft bgs. Specifically, **SS-2** thru **SS-6** at **1.5 ft bgs** all contained elevated concentration of Lead ranging from **80.3** to **226 mg/kg**, all of which exceed the unrestricted residential screening threshold (80 mg/kg), but below the commercial screening threshold (320 mg/kg).

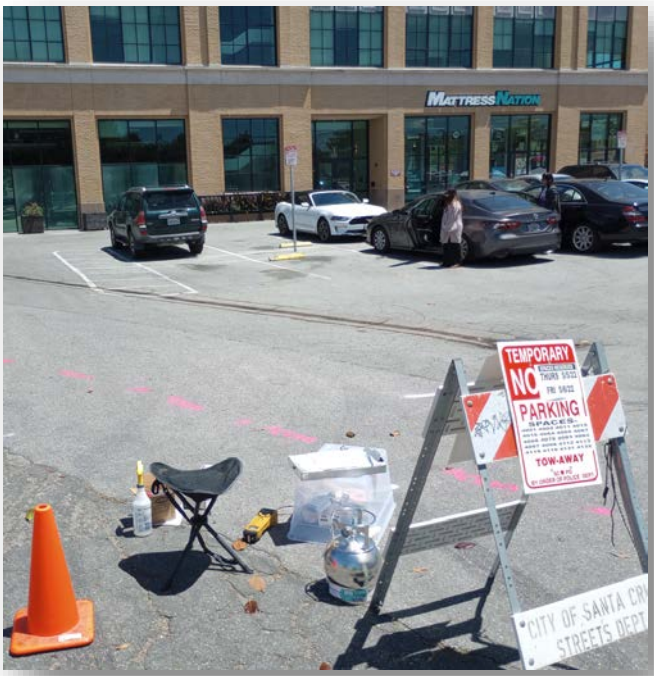
  Discrete samples from each composite samples (SS-2 thru SS-6 at 1.5 ft), analyzed for Lead, showed elevated concentrations at seven of the ten discrete samples (see Table 1 for details).

- **Barium:** One location (SS-2) contained elevated levels of barium at 0.5 ft bgs above the established construction worker health and safety threshold, however below both unrestricted residential and commercial screening thresholds.

- **All Other Metals:** There were no unrestricted residential or commercial ESL exceedances detected.

8.3 Soil Vapor Sampling

Nine (9) shallow temporary soil vapor probes were installed on May 5, 2022, and subsequently sampled by Weber, Hayes and Associates field staff in accordance with our *Field Methodology for Active Soil Gas Sampling* (see Appendix A). All soil vapor probes were installed at 5 feet bgs, and at least 2 hours of sample point equilibration time was allowed following probe construction, prior to sample collection (see geologic logs and construction diagrams in Appendix E). Soil vapor probes were properly destroyed following sampling by completely removing the sample tubing from the subsurface and sealing the surface.



Analysis of the soil vapor samples was conducted for Volatile Organic Compounds (VOCs) by EPA Method TO-15. The State-certified laboratory reports are included as Appendix F.

Field documentation, photo sheets, geologic logs, and field methodology for sample collection are documented in Appendix E. See Figure 5 for sample locations.

- **Results of Shallow Soil Vapor Sampling** (Table 2): State-Certified laboratory results for *shallow* soil vapor testing collected at 5 ft bgs detected concentrations of both fuel and chlorinated solvent-based constituent compounds. All detections were below established commercial screening thresholds. Three (3) of the nine (9) samples contained concentrations which exceeded residential screening thresholds. Specifically,

    - **Benzene:** Both **SV-1** & **SV-9** contained benzene concentrations at **4.1 µg/m^3** and **4.8 µg/m^3** respectively, which slightly exceeds the agency threshold established at **3.2 µg/m^3** *(unrestricted residential land use).*

    - **Tetrachloroethene (PCE):** Eight of the nine samples contained low level detections of PCE. Only one sample, **SV-7,** contained a PCE concentration at **29 µg/m^3**, which exceeds the agency thresholds established at **15 µg/m^3** *(unrestricted residential land use)*. All other detections were well below both established unrestricted residential and commercial land use screening thresholds.

    - **Trichloroethene (TCE):** Six of the nine samples contained low level detections of TCE. Only one sample, **SV-9,** contained a TCE concentration at **30 µg/m^3**, which exceeds the agency thresholds established at **16 µg/m^3** *(unrestricted residential land use)*. All other detections were well below both established unrestricted residential and commercial land use screening thresholds

Other VOCs: All other detected VOCs were well below both established unrestricted residential and commercial land use screening thresholds.

8.4 Groundwater Sampling

Five (5) temporary soil borings were installed on May 5, 2022, for obtaining grab groundwater samples. First groundwater was encountered at 9 to 11 ft. bgs. Field documentation, photo sheets, geologic logs, and field methodology for sample collection are documented in Appendix E. See Figure 5 for sample locations.

Groundwater Results (Table 3): The State-Certified laboratory results for groundwater testing showed that only trace to low level detections of TPH-Gas, cis-1,2-Dichloroethene, and trans-1,2-Dichloroethene were detected in groundwater samples, all detections were well below established water quality and environmental screening thresholds. All other VOCs constituents were not detected in all samples.

9.0 DATA GAPS

We discovered no data gaps during this investigation.

10.0 FINDINGS & OPINIONS

10.1 Subject Site

Physical Setting: The subject Site is a flat-lying, approximately 1.53-acre combined two parcel, property located in a predominantly commercial area of downtown Santa Cruz (see Section 3.0 for full details). The Site contains one wood framed concrete, slab on grade, commercial structure (5,406 square foot [ft^2]) and large city parking lot (59,764 ft^2) with limited landscaping (see photos in Appendix A).

Land use maps and aerial photographs show the Site had been developed with multiple residential homes since at least 1886 and appears to have mostly remained unchanged until approximately 1940 when the Site was redeveloped with a few commercial structures and parking lots. The Site has remained mostly as a city parking lot since at least 1968 (copies of the historical aerials are included in Appendix B). The Site is bound on three sides by streets and commercial buildings to the east (see the *Aerial Vicinity Map*, Figure 2). The flat-lying subject property is situated at an elevation of approximately 14 feet above mean sea level. First encountered groundwater beneath the Site flows in a southeasterly direction and is known to fluctuate seasonally at depths of between 9-to-12 feet below ground surface (bgs).

Phase I Historical Document Review (details in Section 4.0): Historical Sanborn maps and aerial photographs showed that the Site had been developed since at least 1886 with residential dwellings, outhouses, and stable/garage units. Site remained mostly unchanged until sometime between 1940 and 1948 when the dwellings were mostly removed and replaced with two commercial structures and parking lots. By 1968 the majority of the Site was made up of vehicle parking with only two commercial structures present. By 1974 only one commercial structure remained along the north (113 Lincoln Street), with mostly the remainder of the Site made up as a vehicle parking lot.

Until approximately 1940, adjoining and vicinity land-use was predominantly residential with the exception of Pacific Avenue. Beginning in the late 1940s residential land was slowly replaced with commercial land use in the immediate vicinity (copies of historical aerials included in Appendix B).

Phase I Review of Agency Records and User Questionnaire (details in Sections 5.0 & 6.0): There were no environmental conditions of concern that were revealed from the review of agency records for the subject Site and vicinity or from the User Questionnaire.

Phase I Site Inspection (details in Section 7.0): The *Phase I ESA* included an inspection of current environmental conditions at the Site. The inspection showed the subject property is largely encapsulated by a public city parking lot and concrete commercial structure (113 Lincoln Street). The commercial building is occupied by a gym and contains shower/locker rooms and fitness equipment. Floor drains are present in each shower area. There is no bulk chemical storage or use conducted on Site. The building appeared to be in relatively good condition, and well maintained. The majority of the Site is comprised as an asphalt parking lot. There was some mild to moderate staining observed in areas across the lot, however, none of the staining was significant. No recognized environmental conditions were identified based on current Site conditions observed during the inspection (see Photos in Appendix A)

- **Phase I Conclusions of <u>On-Site</u> Conditions:** There were no on-site *recognized environmental conditions* (REC's) identified, based on the review of available historical and agency documents, interviews, and a subject Site inspection.

10.2 Adjoining & Vicinity Findings

A number of commercial properties in the vicinity of the subject Site are documented as having had chemical releases (details presented in Section 5 and Appendix D). Despite regulatory oversight and closure for most of these documented chemical release cases, there remains a well-documented, low-level solvent plume (TCE, cis-1,2-DCE, & Vinyl Chloride) present in shallow groundwater upgradient of the Site. This dilute plume has some potential to encroach (flow) beneath the subject Site, based on the southwesterly groundwater flow direction in the area (additional details in Section 5.4). This relatively low-concentration contaminant groundwater plume, which remains an open agency case, has some limited potential for encroaching beneath the subject Site and is considered a **Controlled Recognized Condition (CREC)**.

In addition to documenting the location of known groundwater plumes, we also evaluated the potential for pollutant plume off-gassing in accordance with current standards for assessing vapor encroachment (i.e., ASTM E2600-10, which has established search distances for volatile chemical release sites for conservatively evaluating the <u>*potential*</u> for vapor (soil gas) encroachment). The documented upgradient, relatively low-concentration solvent plume appears to be the only <u>*documented*</u> release with the potential for vapor encroachment.

The historical records also document the long term presence of a dry cleaner to the north (upgradient) and one to the southwest (side/downgradient) of the Site. Dry cleaners are known to use relatively large quantities of chemicals, discharge dry cleaning solvent wastewater to drainage lines, and generate chemical wastes:

3. <u>108 Lincoln Street - Royal Dry Cleaners</u> (1960 – 1987): This dry cleaner may have closed operations before permitting and inspections were required by the local overseeing agency (Santa Cruz County Environmental Health Services, SCC-EHS).
4. <u>511 Cedar Street - Pacific Dry Cleaners</u> (at least 1997 – present): Operations/chemical use records on file with SCC-EHS documented the use of chlorinated solvents (i.e., Tetrachloroethylene, aka: PCE) from at least 1997 to approximately 2005, after which dry cleaner wash solvent transitioned to a hydrocarbon-based alternative. A review of agency inspection records did not reveal any operational violations of concern for this business.

Neither of these two cleaner businesses have any agency-documented chemical releases (details described in Section 5). However, dry cleaning businesses in general have a record of solvent-laden wash water releases to drainage sumps and drainage piping so there exists some elevated *potential* risk of <u>undocumented</u> chemical releases that could encroach beneath the subject Site**.**

Phase I Conclusions of Off-Site (Adjoining & Vicinity) Conditions:

1. There is one (1) open agency-regulated chemical release case having some limited potential to impact (encroach upon) the subject Site. This upgradient, low-concentration, dilute

groundwater plume is considered a ***Controlled Recognized Environmental Condition*** **(CREC)**, since the contaminant source is from an off-site responsible party and the overseeing agency has no characterization or cleanup requirements for the subject Site.

2. A nearby, upgradient property located across Lincoln Street operated as a dry cleaner for 27+ years (108 Lincoln Street, details described in Section 5). Commercial dry cleaner businesses are considered "red flag" sites because many of these businesses are documented to inadvertently have released chemicals to the subsurface via operations (i.e., disposal of solvent laden wash water to sumps and drain lines), daily handling of chemicals, and the generation/disposal of chemical wastes. Therefore because of long term dry cleaning operations immediately upgradient of the subject Site, there exists a risk of an *undocumented* chemical release(s) from this business a potential to encroach beneath the Subject Site. This is considered a ***Recognized Environmental Condition*** **(REC).** The primary concern is the *potential* for vapor encroachment into a building.
3. To a lesser extent, a second, long term dry cleaner (26+ years of operation, and currently operating ~100-ft to the southwest of the subject Site (511 Cedar Street). This active dry cleaner has no history of a documented chemical release, but as noted above is considered a "red flag" site because of its proximity and likely operational history that included the standard-of-care disposal of solvent laden wash water to sumps and drain lines. This nearby property is considered a ***Recognized Environmental Condition***.

10.3 Summary of Phase II Soil Vapor and Groundwater Sampling Program

Based on the Phase I findings, a Phase II sampling and testing program was implemented to evaluate subsurface Site conditions for *potential* contamination. The program included the following collection and State-certified-laboratory analysis of on-site shallow soils, groundwater, and soil vapor samples:

- A total of eighteen (18) **soil cores** (**SS-1A/B through SS-9A/B)** were obtained to depths of 4.0 feet bgs. Soil samples were retained from depths of 0.5, 1.5, and 3.0 feet bgs. The two shallow samples were tested at a State-certified laboratory analysis (2-point composites). The deeper samples were put-on hold for as-needed analysis. Samples were tested for landfill profiling and to evaluate for common urban contaminants of concern (fuel, oils and metals)

The laboratory results have been tabulated along with agency, risk-based threshold limits for comparison of detected concentrations (see Tables 1, 2 and 3). Results are summarized below:

10.3.1 Groundwater Sample Results (Table 3)

Five (5) **groundwater samples (GW-1 through GW-5)** were collected from depths of between 9.0 and 11.0 feet bgs and analyzed for the full suite of *Volatile Organic Compounds* (VOCs) and fuel (gasoline). Representative samples of first encountered groundwater beneath the subject Site contained *only trace to low level detections* of two common urban contaminants: 1) gasoline range total petroleum hydrocarbons (TPH), and 2) the solvent compound 1,2-Dichloroethene (both cis-, and trans). All concentrations were detected well below established water quality and environmental screening thresholds.

No other *Volatile Organic Compounds* (VOCs) were detected in any of the groundwater samples.

10.3.2 Shallow Soil Vapor Sample Results (Table 2)

Nine (9) shallow, **soil vapor samples (SV-1 through SV-9)** were collected from a depth of 5 feet bgs from across the entirety of the Site and analyzed for the full suite of volatile contaminant compounds at a State-certified laboratory. Aside from an apparent anomalous bias detection that the laboratory identified to originate from natural oil/extract compounds[2], all remaining soil vapor sample results contained relatively low-concentrations volatile concentrations.

- Fuel-Based Volatile Detections: There were widespread, low-level concentrations of volatile, fuel-based constituent contaminants detected across the Site (i.e., **TPH-Gasoline & Benzene**). However, there were only two (2) sample locations (***SV-1 & SV-9***) having concentrations that exceeded the land use threshold for the common urban contaminant, Benzene. Specifically, low concentration benzene was detected between **4.1 µg/m^3** to **4.8 µg/m^3**, which slightly exceeds the residential (unrestricted) land use threshold of **3.2 µg/m^3**.
- Solvent-Based Volatile Detections: Similarly, there were also widespread, low-concentrations of solvent-based volatile contaminants detected across the Site (i.e., **PCE & TCE**, two common degreaser compounds used in historic dry cleaning and automotive repair operations). However, only two (2) sample locations (***SV-7 & SV-9***) had concentrations that exceeded residential (unrestricted) land use thresholds. Specifically:
  - A relatively low concentration of PCE (**29 µg/m^3**) was detected **at SV-7**, which exceeds the residential (unrestricted) land use threshold of **15 µg/m^3**. And,
  - A relatively low concentration of TCE (**30 µg/m^3**) was detected **at SV-9**, which exceeds the residential (unrestricted) land use threshold of **16 µg/m^3**.
- Note: *None of the detected volatile soil gas concentrations exceeded commercial land use screening thresholds* (see Table 2 for additional details).

10.3.3 Soil Sample Results (Table 1)

Phase II shallow soil samples were primarily tested to evaluate potential reuse of on-site soils during redevelopment earthworks as well as for landfill disposal profiling of surplus soils. The laboratory results showed that the bulk of the shallow soils collected from across the Site were impacted with elevated concentrations of Lead and Arsenic. Typical urban sources for these metal contaminants originate from Lead-based paint and weed and rodent control (i.e., arsenates).

Most of the elevated metal concentrations are characterized as "*non-hazardous*" and can be disposed of at a local, municipal landfill. However, much of the shallow soils across the Site exceeded residential (unrestricted) or commercial land use screening threshold limits and will need to be graded off and

---

[2]: See footnote 1 on page 6. A copy of the testing laboratory's *Tentatively Identified Compound (TIC)* report is included at the back of Appendix F (lab reports).

disposed of. Figure 5 (and the clip to the right) presents a plan view of the Site showing color-coded depths of soil that would need to be removed to achieve residential (unrestricted) land use thresholds (i.e., impacted soils by depth).

See Figure 5 for Enlarged Copy

Preliminary Lateral/Vertical Soil Delineation: Shallow soil samples (0.5-ft, and 1.5 ft) collected from nine (9) quadrants were initially collected and tested as 2-point composites (see attached Figure). Following receipt of the 2-point composite lab results (which indicated relatively widespread shallow contamination, primarily as Arsenic and Lead) the following additional analysis was completed:

3) The nine (9), 2-point composite soil samples were broken up and individually analyzed for Lead and and/or Arsenic to evaluate whether one or both of the soil samples that made up the composite were impacted. The goal behind this additional "discrete" sample analysis was to delineate and/or eliminate sub-quadrants as areas of potential concern. And;

4) The deeper, 3-ft samples on hold at the laboratory were lab-analyzed as composite samples. The goal behind the additional "deeper" sample analysis was to further delineate the vertical extent of contamination.

   - Note that only one (1) of the nine (9) deeper soil samples (SS-5) contained elevated contaminant concentrations, *which indicates that the vertical extent of contamination appears to be limited to less that 3-ft bgs*.

Additional Phase II testing details are provided in Section 8 of this report.

Landfill Disposal: As noted above, most of the contaminant metal concentrations detected in shallow soil are characterized as "non-hazardous" and can be disposed of at a local, municipal landfill. However, two samples (SS-2 at 1.5-ft and SS-3 at 0.5-ft bgs) contained hazardous waste concentrations of soluble

Lead and will be required to be disposed of at a Class 1 landfill (see brick -shaded quadrants on the attached Figure 5). In summary, this Phase II screening of shallow, on-site soils provides a preliminary overview of soil conditions. Additional horizontal/vertical delineation will be needed to provide accepting landfills with enough data to take these soils.

11.0 CONCLUSIONS & RECOMMENDATIONS

We have performed a standard of care, *Phase I/II Environmental Site Assessment* in conformance with protocols established in ASTM Practice E1527-15 and there were no data gaps encountered while completing this research.

Phase I - On-site Conclusions: There were no on-site *recognized environmental conditions* (REC's) identified, based on the review of available historical and agency documents, interviews, and a site inspection. research.

Phase I - Off-site/Vicinity Conclusions:

1. There is one (1), open (active), agency-regulated chemical release case having some limited potential to impact (encroach upon) the subject Site. This upgradient, low-concentration groundwater plume is considered a ***Controlled Recognized Environmental Condition*** **(CREC)**, since the contaminant source is from an off-site responsible party and the overseeing agency has no characterization or cleanup requirements for the subject Site.
2. Two long-term dry cleaners operated nearby including an upgradient property located across Lincoln Street operated as a dry cleaner for 27+ years (108 Lincoln Street) and to a lesser extent, a second, long term dry cleaner (26+ years of operation, and currently operating) located ~100-ft to the southwest of the subject Site (511 Cedar Street). These long-term dry cleaning businesses are considered a "red flag" operations because of their proximity and likely operational history that included the standard-of-care disposal of solvent laden wash water to sumps and drain lines. As a result, there exists an encroachment risk resulting from *undocumented* chemical release(s). These two cleaner sites are considered a ***Recognized Environmental Condition*** **(REC).** The primary concern is the *potential* for vapor encroachment into a building.

Phase II Sampling and Testing Program Conclusions: A Phase II sampling and testing program was implemented to evaluate subsurface Site conditions for *potential* contamination. The program included sample collection and State-certified-laboratory analysis of groundwater, soil vapor, and shallow soil samples:

1. Groundwater Results: Representative samples of first encountered groundwater beneath the subject Site contained only trace to low level detections of two common urban contaminants: 1) gasoline range total petroleum hydrocarbons and 2) the solvent compound 1,2-Dichloroethene (both cis-, and trans). All concentrations were detected well below established water quality and environmental screening thresholds. **These groundwater results indicate there has been no significant release of mobile contaminants to the subsurface from on-site or upgradient sources (i.e., fuels, solvents).**
2. Soil Vapor Results: Aside from an apparent anomalous bias detection that the laboratory identified as a natural oil/extract compound (described above in Section 1.3.2), all soil vapor sample results were shown to contain relatively low-concentrations volatile concentrations. Specifically:
    - Fuel-Based Volatile Detections: Low level concentrations of the volatile fuel constituent benzene were detected in two of the nine soil vapor samples (SV-1 and SV-9), above

unrestricted residential screening thresholds. It is notable that low level/trace concentrations of benzene and gasoline-range-TPH were detected across the Site. This, coupled with lack of fuel-based contaminant detections in groundwater, indicate that these very low vapor detections suggest that the contaminant source is insignificant and likely originates from near surface leaks from vehicles parked at this lot.

- Solvent-Based Volatile Detections: Similarly, there were also widespread, low-level soil vapor concentrations of solvent-based volatile contaminants detected across the Site but not in groundwater. These low-level, soil gas concentrations indicate there has not been a significant chemical release at the subject Site.

  Only two (2) of the nine (9) sample locations (SV-7 & SV-9) had concentrations exceeding residential (unrestricted) land use thresholds, but neither exceeded commercial land use screening thresholds). SV-7 & SV-9 are property line sample locations and the source of their relatively low-concentration solvent detections may originate as encroached soil gas from an unidentified off-site source, potentially the nearby drycleaner facility at 511 Cedar Street.

3. Soil Results: Phase II shallow soil samples were primarily tested to evaluate potential reuse of on-site soils during redevelopment earthworks as well as for landfill disposal profiling of surplus soils. The laboratory results showed that the bulk of the shallow soils collected from across the Site were impacted with elevated concentrations of Lead and Arsenic. Typical urban sources for these metal contaminants originate from Lead-based paint and weed and rodent control (i.e., arsenates).

   The majority of the elevated metal concentrations in soil are characterized as "non-hazardous" and can be disposed of at a local, municipal landfill. However, much of the shallow soils across the Site exceeded residential (unrestricted) or commercial land use screening threshold limits and will need to be graded off and disposed of during development activities. Figure 5 presents a plan view of the Site showing color-coded depths of soil that would need to be removed to achieve residential (unrestricted) land use thresholds (i.e., impacted soils by depth).

A copy of this report should be submitted to the overseeing agency, the Santa Cruz County Environmental Health Services (SCC-EHS), for their review and comment. Future earthworks and soil handling will need to be managed under an agency-approved *Soil Management Plan* and SCC-EHS will likely require some additional soil vapor evaluation to confirm vapor intrusion is not a concern. Supplemental soil delineation testing will likely be needed to further define the limits of shallow soil contamination and to provide accepting landfills with required acceptance data.

12.0 LIMITATIONS AND EXCEPTIONS OF ASSESSMENT

This report and the associated work have been provided in accordance with the principles and practices generally employed by the local environmental consulting profession. This is in lieu of all other warranties, expressed or implied. This report has been prepared solely for our client. The assessment is provided so the client may make a more informed decision as to Site conditions. This report shall not be relied upon by or transferred to any other party or used for any other purpose. *Weber, Hayes and*

Associates will not distribute this report to any regulatory agency without the consent by the User, unless required by law or court order.

This ESA is not a regulatory compliance audit or an evaluation of the efficiency of the use of any hazardous materials at the Site. Unless otherwise stated, no evaluation for the presence of asbestos-containing building materials, Lead-based paint, urea-formaldehyde foam insulation, or other potentially hazardous building materials; methane; radon gas; Lead in drinking water; or wetlands, is included in our assessment.

Our findings and opinions are based on information collected from regulatory agency files and lists, interviews, and Site conditions at the time of our Site reconnaissance. Note that our findings and opinions are based on information that we obtained on specific dates through records review, Site reconnaissance, and related activities. It is possible that other information exists or subsequently has become known, just as it is possible for conditions, we observed to have changed after our observations.

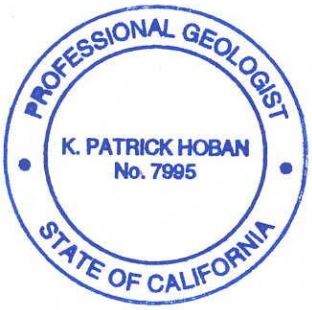
The accuracy and thoroughness of any environmental assessment depend on a variety of factors and optimally will include soil and groundwater sampling. Weber, Hayes and Associates cannot and will not provide guarantees, certifications or warranties that the investigated property is or is not free of environmental impairment. Any person who is aware of any *recognized environmental conditions* of the Site or surrounding areas that are different from those described in the report should report them immediately to this office for evaluation as part of an additional scope of work.

Thank you for this opportunity to be of service. Should you have any questions or comments regarding this project, please contact us at our offices.

Respectfully submitted,

WEBER, HAYES AND ASSOCIATES

A California Corporation



By: _____
Pat Hoban, PG
Principal Geologist

And: _____
Shaun Ersoy
Staff Scientist

13.0 QUALIFICATION OF ENVIRONMENTAL PROFESSIONAL

I declare that, to the best of my professional knowledge and belief, I meet the definition of Environmental Professional as defined in §312.10[3] of this part.

I have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the subject property. I have developed and performed all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312.

By _____

Pat Hoban
Principal Geologist

[3] ASTM Standard E 1527-15, X2.1.1 and Federal Register 40 CFR Part 312, §312.10:

Environmental Professional means:

(1) A person who possesses sufficient specific education, training, and experience necessary to exercise professional judgment to develop opinions and conclusions regarding conditions indicative of releases or threatened releases…on, at, in, or to a property, sufficient to meet the objectives and performance factors...

(2) Such a person must:

(i) Hold a current Professional Engineer's or Professional Geologist's license or registration from a state, tribe, or U.S. territory (or the Commonwealth of Puerto Rico) and have the equivalent of three (3) years of full-time relevant experience; or

(ii) Be licensed or certified by the federal government, a state, tribe, or U.S. territory (or the Commonwealth of Puerto Rico) to perform environmental inquiries … and have the equivalent of three (3) years of full-time relevant experience; or

(iii) Have a Baccalaureate or higher degree from an accredited institution of higher education in a discipline of engineering or science and the equivalent of five (5) years of full-time relevant experience; or

(iv) Have the equivalent of ten (10) years of full-time relevant experience...

14.0 REFERENCES

Environmental Assessment Standards and State/Local Information Systems

ASTM E1527-15, *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process*, 2015

ASTM E2600-10, *Standard Guide for Vapor Encroachment Screening on Property Involved in Real Estate Transactions*, 2010.

State Water Resources Control Board *Online "GeoTracker" Database*, www.geotracker.swrcb.ca.gov.

California State Department of Toxic Substances Control *Online "EnviroStor" Database*, www.envirostor.dtsc.ca.gov/public/http://www.geotracker.swrcb.ca.gov/.

Santa Cruz County *Geographic Information Systems (GIS) website*, https://gis.santacruzcounty.us/gisweb/

Regional Maps and Geologic References

The National Geologic Map Database, http://ngmdb.usgs.gov/ngmdb/ngmdb_home.html, 2015.

Geologic Map of Santa Cruz County, California, Wagner, 2002.

Nearby Property Records and Reports

207 Church Street – Church Street LLC
https://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T10000001572

600 Front Street – Former Kedrick's Laundry
https://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T10000002689

1010 Center Street– Former Auto Repair & Paint Shop
https://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T10000013953

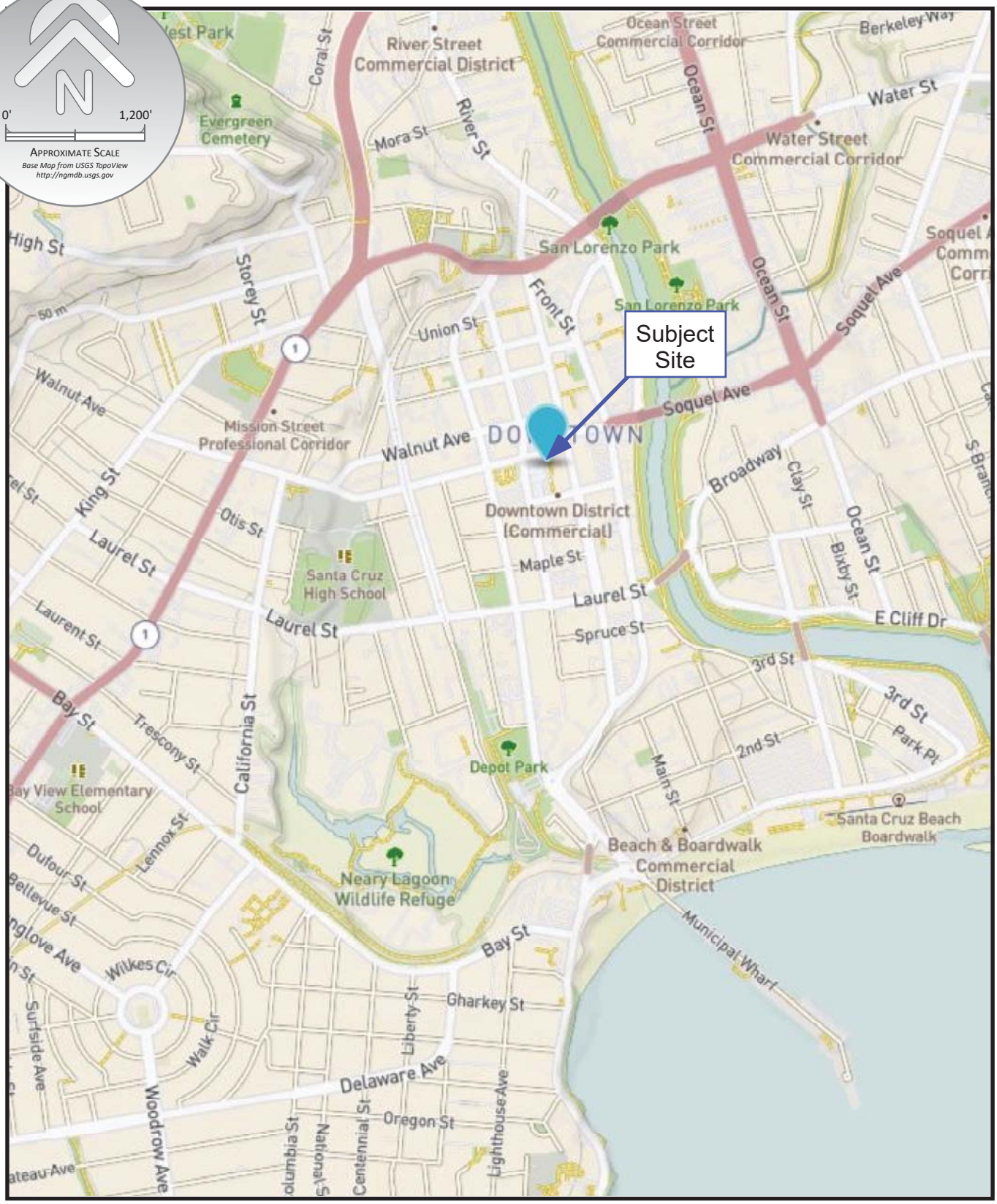
1128 Pacific Avenue – Former Bank of America
https://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0608700061

1018 Pacific Avenue – Pacific Union Apartments
https://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0608716522

425 Front Street – Greyhound Station
https://geotracker.waterboards.ca.gov/profile_report.asp?global_id=SL0608724434

920 Pacific Avenue – Santa Cruz Metro Station
https://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T10000006376

Figures



Weber, Hayes & Associates
Hydrogeology and Environmental Engineering
120 Westgate Drive, Watsonville, CA
831.722.3580 / www.weber-hayes.com

Location Map

Phase I/II Environmental Site Assessment

Site: Santa Cruz Library ESA
Address: 113 Lincoln Street, Santa Cruz, CA 95060

Date: July 2022

Revisions/Notes:

Figure 1
Project 2t158

N

0' 150'

Approximate Scale

Base Map from USGS TopoView http://ngmdb.usgs.gov

APPROXIMATE SHALLOW GROUNDWATER FLOW DIRECTION

(Based on multiple nearby monitoring well networks and regional surface water)

709 Center Street
Pacific Bell

Former Kerricks Laundry
600 Front Street

Former Front St. Garage
601 Front Street

Soquel Avenue

Commercial

Jack's Hamburgers
Free Delivery
On 1st Order

Commercial Businesses
1115-1133 Pacific Ave

Lincoln Street

Subject Site

532 Center Street
Church

Pacific Avenue

Front Street

San Lorenzo River

Center Street

Cedar Street

Commercial Building
1101 Pacific Ave

Cathcart Street

Pacific Union Apartments
1018 Pacific Ave

Commercial

Greyhound Station
425 Front Street

Pacific Station
920 Pacific Ave

Elm Street

Washington Street

Front Street Redevelopment
325 Front Street

Figure 2

Project 2T158

Vicinity Map
Phase I/II Environmental Site Assessment

Site: Santa Cruz Library ESA
Address: 113 Lincoln Street, Santa Cruz, CA 95060

Revisions/Notes:

Date: July 2022

Weber, Hayes & Associates
Hydrogeology and Environmental Engineering
120 Westgate Drive, Watsonville, CA
831.722.3580 / www.weber-hayes.com

SITE MAP
PHASE I/II ENVIRONMENTAL SITE ASSESSMENT

SITE: Santa Cruz County Library ESA
ADDRESS: 113 Lincoln Street, Santa Cruz

REVISIONS/NOTES:

DATE: JULY 2022

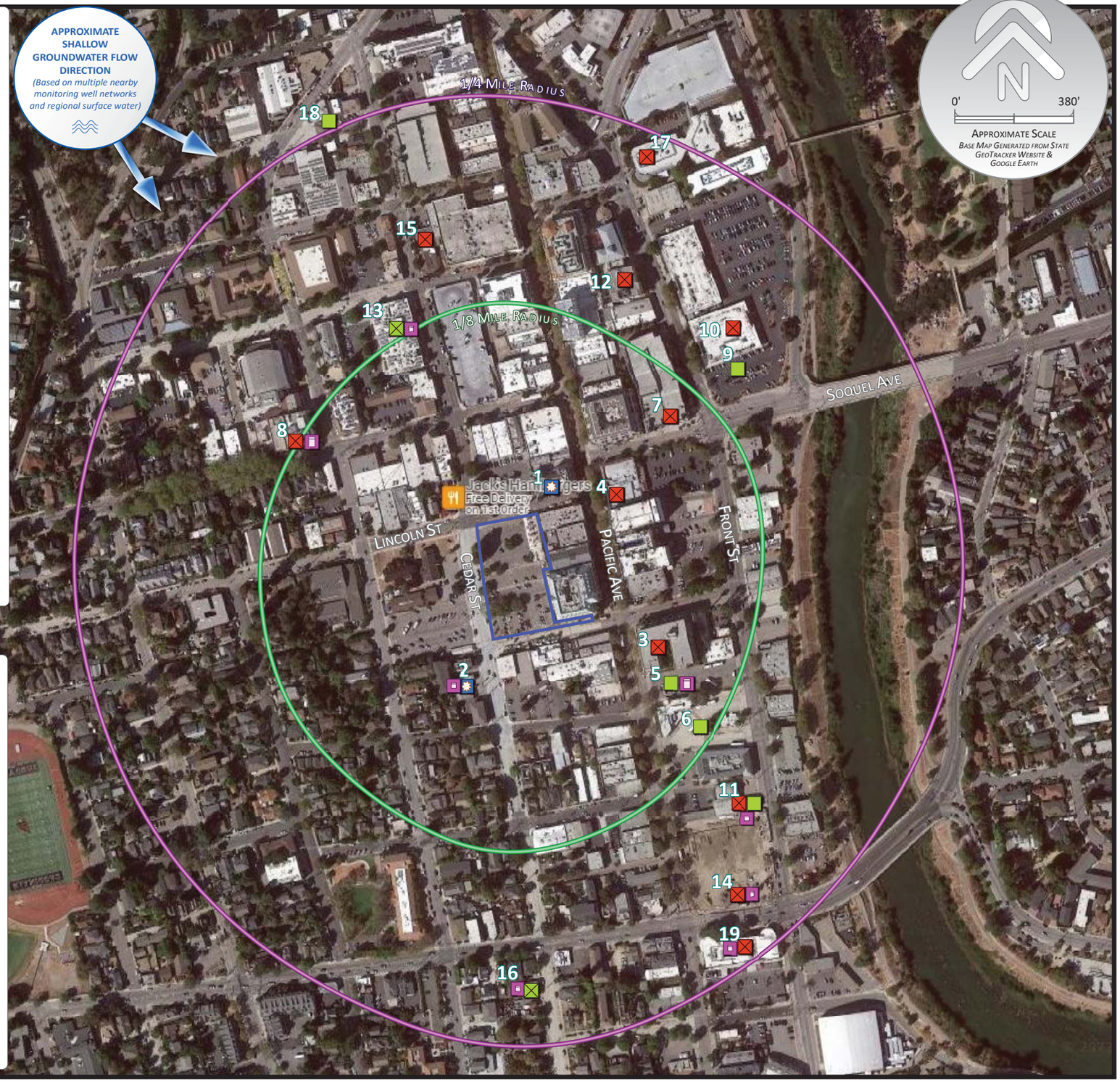
WEBER, HAYES & ASSOCIATES
Hydrogeology and Environmental Engineering
120 Westgate Drive, Watsonville, CA
831.722.3580 / www.weber-hayes.com

FIGURE 3
Project 2T158

Surrounding Sites

1. 108 Lincoln Ave - Royal Cleaners - EDR Hist. Cleaners
2. 511 Cedar Street - Pacific Dry Cleaners - EDR Hist. Cleaners
3. 1018 Pacific Ave - Pacific Union Apartments - LUST Closed
4. 1128 Pacific Ave - Former Bank of America - LUST Cloased
5. 425 Front Street - Greyhound Station - CPS-SLIC Open Monitoring
6. 920 Pacific Ave - SC Metro Station - CPS-SLIC Open Site Assessment
7. 601 Front Street - Front St Garage - LUST Closed
8. 709 Center Street - Pacific Bell - LUST Closed, RCRA-LQG
9. 600 Front Street - Former Kerricks Laundry - CPS-SLIC Site Assessment
10. 600-720 Front Street - San Lorenzo Park - LUST Closed
11. 325 Front Street - Putney Perry - LUST Closed, CPS-SLIC Assessment
12. 705 Front Street - McPherson Art & History - LUST Closed
13. 207 Church Street - SC Sentinel - CPS-SLIC Closed
14. 100 Laurel Street - Shell Station - LUST Closed
15. 912 Cedar Street - Sentinel Printers - LUST Closed
16. 211 Cedar Street - Former Eurotech - CPS-SLIC Closed
17. 740 Front Street - Former French Laundry - LUST Closed
18. 1010 Center Street - Ronald Perrigo - CPS-SLIC Site Assessment
19. 201 Front Street - Toyota of SC - LUST Closed

These are primarily historical and ongoing fuel and chemical release and/or hazardous waste generator sites within a 1/4-mile radius around the subject Site. See Section 5 of the report and Appendix C for further details. Please note that we have reviewed the placement of these regulated sites and adjusted some that were shown inaccurately on the State GeoTracker website.



Explanation of Symbols

- Ongoing *Leaking Underground Storage Tank (LUST)* Case
  - Regulatory Closure
  - Ongoing Remedial Action
- Ongoing *SLIC or ENVIROSTOR Cleanup* site
  - Regulatory Closure
  - Ongoing Remedial Action
- Open *National Priorities List* or *CERCLIS (Superfund)* site
  - Delisted or NFRAP site
  - Proposed NPL site
- *RCRA* Generators & Corrective Action *(Resource Conservation & Recovery Act)* site
  - RCRA CORRACTS
  - RCRA-LQG (large qty generator)
  - RCRA-SQG (small qty generator)
- Underground Storage Tank (UST)
- Aboveground Storage Tank (AST)
- DTSC Voluntary Cleanup site
- Historical Dry Cleaners
- CUPA Hazardous Materials site: these are adjoining sites that have a *Hazardous Materials Management Plan* on file with the county.

Figure 4
Project 2T158

Regulated Hazardous Sites - ¼ Mile Radius
Phase I/II Environmental Site Assessment

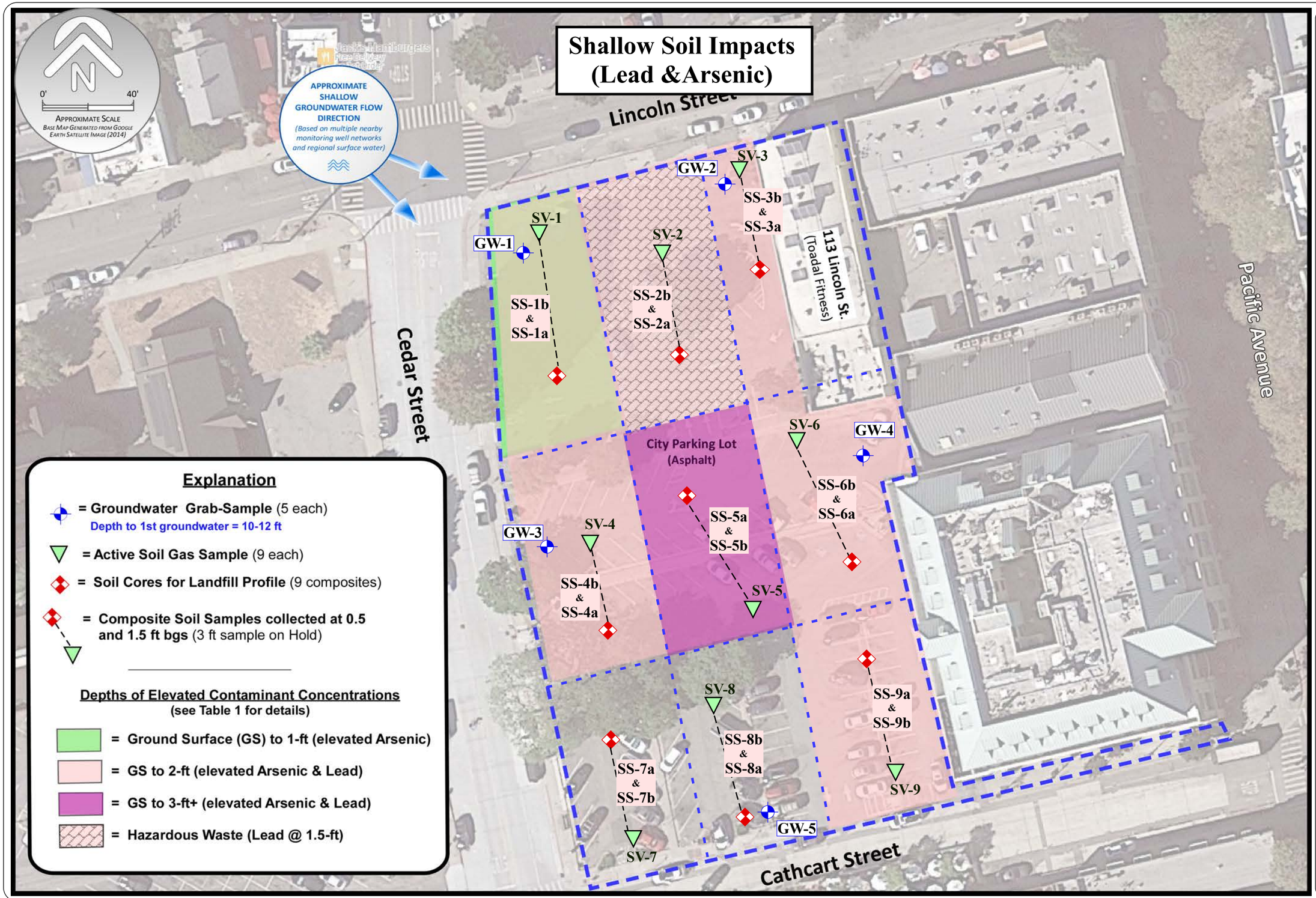
Site: Santa Cruz Library ESA
Address: 113 Lincoln Street, Santa Cruz

Revisions/Notes: :

Date: July 2022

Weber, Hayes & Associates
Hydrogeology and Environmental Engineering
120 Westgate Drive, Watsonville, CA
831.722.3580 / www.weber-hayes.com

Shallow Soil Impacts (Lead &Arsenic)



Explanation

- = **Groundwater Grab-Sample** (5 each)
  Depth to 1st groundwater = 10-12 ft
- = **Active Soil Gas Sample** (9 each)
- = **Soil Cores for Landfill Profile** (9 composites)
- = **Composite Soil Samples collected at 0.5 and 1.5 ft bgs** (3 ft sample on Hold)

Depths of Elevated Contaminant Concentrations
(see Table 1 for details)

- = Ground Surface (GS) to 1-ft (elevated Arsenic)
- = GS to 2-ft (elevated Arsenic & Lead)
- = GS to 3-ft+ (elevated Arsenic & Lead)
- = Hazardous Waste (Lead @ 1.5-ft)

Figure 5

Project 2T158

Phase II Sample Location Map
Environmental Site Assessment

Site: Santa Cruz Library ESA
Address: 113 Lincoln Street, Santa Cruz

Date: June 2022

Revisions/Notes:

Weber, Hayes & Associates
Hydrogeology and Environmental Engineering
120 Westgate Drive, Watsonville, CA
831.722.3580 / www.weber-hayes.com

Tables

(Summary of Laboratory Results)

Table 1
Summary of Soil Analytical Results
CAM 17 Metals & Total Petroleum Hydrocarbons (TPH)
113 Lincoln Street, Santa Cruz

All soil results are in milligrams per Kilogram (mg/Kg) unless noted

Sample Information				Total Petroleum Hydrocarbons (TPH) EPA Method 8260B/8015M			CAM-17 Metals by EPA Method 6010B																		
Sample ID	**Sample Date**	**Depth (ft)**	**Sample Type** (Composite/ Discrete)	TPH as **GASOLINE (C5-12)**	TPH as **DIESEL (C12-C22)**	TPH as **MOTOR OIL (C22-C40)****	**Antimony**	**Arsenic** (Bkg)	Soluble **ARSENIC** STLC/TCLP (mg/L)	**Barium**	Soluble **BARIUM** STLC/TCLP (mg/L)	**Beryllium**	**Cadmium**	**Chromium**	**Cobalt**	**Copper**	**Lead**	Soluble **LEAD** STLC/TCLP (mg/L)	**Mercury**	**Molybdenum**	**Nickel**	**Selenium**	**Silver**	**Thallium**	**Vanadium***	**Zinc**
SS-1	5/5/2022	0.5	Composite	**1.75 B J**	**76.5 J**	**1,445**	**4.17**	**203**	**0.916** / < 0.10	**289**	--	**0.213 J**	**0.510 J**	**7.05**	**5.14**	**24.8**	**77.3**	**2.32** / --	**0.191**	**1.1**	**12.2**	<2.17	<1.09	<2.17	**16.9**	**54.2**
			Discrete (**SS-1A**)	--	--	--	--	**250**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
			Discrete (**SS-1B**)	--	--	--	--	**35.2**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		1.5	Composite	**9.11 B**	**2.57 J**	**13.13**	<2.34	**4.77**	--	**92.2**	--	**0.274**	**0.349 J**	**19.2**	**3.92**	**22.9**	**16.6**	--	**0.197**	**0.821**	**8.61**	<2.34	<1.17	<2.34	**17.1**	**50.7**
		3	Composite	**4.08 B**	**8.97**	**28.49**	<2.29	**6.54**	--	**69.3**	--	**0.200 J**	**0.58**	**8.16**	**4.15**	**10.1**	**6.39**	--	**0.0381 J**	**0.877**	**11.4**	<2.29	<1.15	<2.29	**17.7**	**44.5**
SS-2	5/5/2022	0.5	Composite	**2.45 B J**	**28.7 J**	**524**	**10.6**	**282**	**1.47** / < 0.10	**3,020**	**11.9** / **5.8**	**0.394**	**0.808**	**35.1**	**7.53**	**30.8**	**117**	**0.145** / < 0.10	**0.181**	**3.75**	**22.8**	<2.14	**0.834 J**	<2.14	**55.4**	**128**
			Discrete (**SS-2A**)	--	--	--	--	**110**	--	**1,200**	--	--	--	--	--	--	**46.6**	--	--	--	--	--	--	--	--	--
			Discrete (**SS-2B**)	--	--	--	--	**277**	--	**5,790**	--	--	--	--	--	--	**149**	--	--	--	--	--	--	--	--	--
		1.5	Composite	**1.61 B J**	**3.72 J**	**31.8**	<2.25	**6.15**	--	**159**	--	**0.429**	**0.396 J**	**16.5**	**3.75**	**14.1**	**80.3**	**5.26** / --	**0.31**	**0.697**	**10.1**	<2.25	<1.12	<2.25	**27.2**	**75.5**
			Discrete (**SS-2A**)	--	--	--	--	--	--	--	--	--	--	--	--	--	**404**	--	--	--	--	--	--	--	--	--
			Discrete (**SS-2B**)	--	--	--	--	--	--	--	--	--	--	--	--	--	**28.2**	--	--	--	--	--	--	--	--	--
		3	Composite	**1.45 B J**	**0.982 J**	**3.95**	<2.27	**3.46**	--	**131**	--	**0.451**	**0.435 J**	**16.2**	**3.77**	**11.4**	**58.2**	--	**0.259**	**0.787**	**11**	**0.975 J**	<1.14	<2.27	**29**	**56.4**
SS-3	5/5/2022	0.5	Composite	**1.16 B J**	**1.63 J**	**21.24**	<2.23	**2.89**	--	**199**	--	**0.45**	**0.513 J**	**17.5**	**3.79**	**18.4**	**568**	**29.5** / **2.14**	**0.37**	**0.875**	**10.4**	<2.23	<1.11	<2.23	**29.1**	**181**
			Discrete (**SS-3A**)	--	--	--	--	--	--	--	--	--	--	--	--	--	**237**	--	--	--	--	--	--	--	--	--
			Discrete (**SS-3B**)	--	--	--	--	--	--	--	--	--	--	--	--	--	**677**	--	--	--	--	--	--	--	--	--
		1.5	Composite	**1.26 B J**	**1.63 J**	**12.99**	<2.29	**1.85 J**	--	**106**	--	**0.491**	**0.405 J**	**17.9**	**3.92**	**11.3**	**96.1**	**3.48** / --	**0.569**	**0.757**	**10.8**	<2.29	<1.14	<2.29	**30.6**	**60**
			Discrete (**SS-3A**)	--	--	--	--	--	--	--	--	--	--	--	--	--	**124**	--	--	--	--	--	--	--	--	--
			Discrete (**SS-3B**)	--	--	--	--	--	--	--	--	--	--	--	--	--	**39.4**	--	--	--	--	--	--	--	--	--
		3	Composite	**4.52 B**	<4.64	**1.82**	<2.32	**2.6**	--	**103**	--	**0.57**	**0.423 J**	**20**	**4.39**	**11.3**	**16.4**	--	<0.0464	**0.984**	**12.4**	**0.950 J**	<1.16	<2.32	**35.1**	**55.6**
DTSC-Modified Screening Levels (1) (for human health risk pathway) For Residential or Commercial Land Use				Not Established			31 / 470 (EPA)	0.11 / 0.36	5 mg/L	15,000 / 220,000 (EPA)	100 mg/L	16 / 230	71 / 780	120,000 / 1,800,000 (EPA) (Cr-total)	23 / 350 (EPA)	3,100 / 47,000 (EPA)	80 / 320	5 mg/L	1.0 / 4.4	390 / 5,800 (EPA)	820 / 11,000	390 / 5,800 (EPA)	390 / 5,800 (EPA)	0.78 / 12 (EPA)	390 / 5,800 (EPA)	23,000 / 350,000 (EPA)
Environmental Screening Levels (ESLs) (2) (for human health risk pathway) For Residential or Commercial Land Use (& for a construction worker)				430 / 2,000 / (1,800)	260 / 1,200 / (1,100)	12,000 / 180,000 / (54,000)	11 / 160 (50)	11.0 /11.0 (Bkg) 0.067 / 0.31 (2.0)	5 mg/L	15,000 / 220,000 (3,000)	100 mg/L	16 / 230 (27)	78 / 1,100 (51)	120,000 / 180,000 (Cr-total) (53,000)	23 / 350 (28)	3,100 / 47,000 (14,000)	80 / 320 (160)	5 mg/L	13 / 190 (44)	390 / 5,800 (1,800)	820 / 11,000 (86)	390 / 5,800 (1,700)	390 / 5,800 (1,800)	0.78 / 12 (3.5)	390 / 5,800 (470)	23,000 / 350,000 (110,000)
"Tier 1 ESL" (2) Lowest ESL(and basis) for All Possible Pathways & Land Uses (includes residential)				**100** (O)	**260** (NC)	**5,100** (GC)	**11** (HH, resid)	**0.067** (HH, resid)		**3,000** (HH, const)		**16** (HH, resid)	**78** (HH, resid)	**120,000**(Cr-total) (HH, resid)	**23** (HH, resid)	**3,100** (HH, resid)	**80** (HH, resid)		**13** (HH, resid)	**390** (HH, resid)	**86** (HH, const)	**390** (HH, resid)	**390** (HH, resid)	**0.78** (HH, resid)	**390** (HH, resid)	**23,000** (HH, resid)

Table 1
Summary of Soil Analytical Results
CAM 17 Metals & Total Petroleum Hydrocarbons (TPH)
113 Lincoln Street, Santa Cruz

All soil results are in milligrams per Kilogram (mg/Kg) unless noted

Sample Information				Total Petroleum Hydrocarbons (TPH) EPA Method 8260B/8015M			CAM-17 Metals by EPA Method 6010B																		
Sample ID	Sample Date	Depth (ft)	Sample Type (Composite/ Discrete)	TPH as GASOLINE (C5-12)	TPH as DIESEL (C12-C22)	TPH as MOTOR OIL (C22-C40)**	Antimony	Arsenic (Bkg)	Soluble ARSENIC STLC/TCLP (mg/L)	Barium	Soluble BARIUM STLC/TCLP (mg/L)	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Soluble LEAD STLC/TCLP (mg/L)	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium*	Zinc
SS-4	5/5/2022	0.5	Composite	3.13 B	2.34 J	40.7	<2.15	206	2.28 / < 0.10	6.17	--	0.515	<0.538	3.78	1.37	2.25	5.19	--	0.0632	1.13	0.770 J	<2.15	<1.08	<2.15	6.9	27
			Discrete (SS-4A)	--	--	--	--	413	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
			Discrete (SS-4B)	--	--	--	--	226	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		1.5	Composite	4.69 B	<5.00	6.51	<2.50	14.7	--	181	--	0.478	0.732	17.7	4.18	17.6	216	-- / 0.188	0.166	0.67	11.2	<2.50	<1.25	<2.50	29	211
			Discrete (SS-4A)	--	--	--	--	76.3	--	--	--	--	--	--	--	--	193	--	--	--	--	--	--	--	--	--
			Discrete (SS-4B)	--	--	--	--	5.78	--	--	--	--	--	--	--	--	243	--	--	--	--	--	--	--	--	--
		3	Composite	2.91 B J	2.20 J	22.06	<2.48	3.46	--	129	--	0.673	0.644	24.5	5.46	14.6	19.9	--	0.0451 J	1.32	17.5	<2.48	<1.24	<2.48	41.1	70.8
SS-5	5/5/2022	0.5	Composite	2.82 B J	5.11	75.5	<2.32	202	-- / < 0.10	5.12	--	0.422	<0.581	3.98	0.656 J	2.22 J	3.8	--	0.0815	1.02	1.00 J	<2.32	<1.16	<2.32	6.99	24.3
			Discrete (SS-5A)	--	--	--	--	285	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
			Discrete (SS-5B)	--	--	--	--	178	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		1.5	Composite	3.40 B J	<4.97	5.53	<2.48	11.9	--	130	--	0.502	0.772	17.8	5.38	16.8	175	-- / < 0.10	0.207	0.826	12.9	<2.48	<1.24	<2.48	28.9	99.7
			Discrete (SS-5A)	--	--	--	--	31.8	--	--	--	--	--	--	--	--	331	--	--	--	--	--	--	--	--	--
			Discrete (SS-5B)	--	--	--	--	3.34	--	--	--	--	--	--	--	--	65.9	--	--	--	--	--	--	--	--	--
		3	Composite	2.83 B J	<4.90	7.79	<2.45	45.8	--	171	--	0.461	0.480 J	14.5	3.78	15.8	204	--	0.162	0.995	8.93	<2.45	<1.22	<2.45	27.3	131
			Discrete (SS-5A)	--	--	--	--	6.37	--	--	--	--	--	--	--	--	248	--	--	--	--	--	--	--	--	--
			Discrete (SS-5B)	--	--	--	--	37.5	--	--	--	--	--	--	--	--	386	--	--	--	--	--	--	--	--	--
SS-6	5/5/2022	0.5	Composite	3.32 B	3.60 J	51.2	<2.19	366	-- / < 0.10	11	--	0.593	<0.546	6.86	1.61	2.8	5.73	--	0.0838	1.36	1.47 J	0.963 J	<1.09	<2.19	9.22	36.1
			Discrete (SS-6A)	--	--	--	--	309	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
			Discrete (SS-6B)	--	--	--	--	212	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		1.5	Composite	3.05 B J	1.75 J	13.79	<2.40	8.99	--	182	--	0.495	0.784	20.1	4.29	19.6	226	-- / 0.197	0.224	0.763	12.1	<2.40	<1.20	<2.40	31.5	147
			Discrete (SS-6A)	--	--	--	--	--	--	--	--	--	--	--	--	--	340	--	--	--	--	--	--	--	--	--
			Discrete (SS-6B)	--	--	--	--	--	--	--	--	--	--	--	--	--	686	--	--	--	--	--	--	--	--	--
		3	Composite	3.45 B J	0.924 J	3.04	<2.38	1.73 J	--	90.4	--	0.524	0.526 J	19.1	4.72	11.8	13.2	--	0.0290 J	0.864	12.6	<2.38	<1.19	<2.38	32.8	54.6
DTSC-Modified Screening Levels [1] (for human health risk pathway) For Residential or Commercial Land Use				Not Established			31 / 470 (EPA)	0.11 / 0.36	5 mg/L	15,000 / 220,000 (EPA)	100 mg/L	16 / 230	71 / 780	120,000 / 1,800,000 (EPA) (Cr-total)	23 / 350 (EPA)	3,100 / 47,000 (EPA)	80 / 320	5 mg/L	1.0 / 4.4	390 / 5,800 (EPA)	820 / 11,000	390 / 5,800 (EPA)	390 / 5,800 (EPA)	0.78 / 12 (EPA)	390 / 5,800 (EPA)	23,000 / 350,000 (EPA)
Environmental Screening Levels (ESLs) [2] (for human health risk pathway) For Residential or Commercial Land Use (& for a construction worker)				430 / 2,000 / (1,800)	260 / 1,200 / (1,100)	12,000 / 180,000 / (54,000)	11 / 160 (50)	11.0 /11.0 (Bkg) 0.067 / 0.31 (2.0)	5 mg/L	15,000 / 220,000 (3,000)	100 mg/L	16 / 230 (27)	78 / 1,100 (51)	120,000 / 180,000 (Cr-total) (53,000)	23 / 350 (28)	3,100 / 47,000 (14,000)	80 / 320 (160)	5 mg/L	13 / 190 (44)	390 / 5,800 (1,800)	820 / 11,000 (86)	390 / 5,800 (1,700)	390 / 5,800 (1,800)	0.78 / 12 (3.5)	390 / 5,800 (470)	23,000 / 350,000 (110,000)
"Tier 1 ESL" [2] Lowest ESL(and basis) for All Possible Pathways & Land Uses (includes residential)				100 (O)	260 (NC)	5,100 (GC)	11 (HH, resid)	0.067 (HH, resid)		3,000 (HH, const)		16 (HH, resid)	78 (HH, resid)	120,000 (Cr-total) (HH, resid)	23 (HH, resid)	3,100 (HH, resid)	80 (HH, resid)		13 (HH, resid)	390 (HH, resid)	86 (HH, const)	390 (HH, resid)	390 (HH, resid)	0.78 (HH, resid)	390 (HH, resid)	23,000 (HH, resid)

Table 1
Summary of Soil Analytical Results
CAM 17 Metals & Total Petroleum Hydrocarbons (TPH)
113 Lincoln Street, Santa Cruz

All soil results are in milligrams per Kilogram (mg/Kg) unless noted

Sample Information				Total Petroleum Hydrocarbons (TPH) EPA Method 8260B/8015M			CAM-17 Metals by EPA Method 6010B																	
Sample ID	**Sample Date**	**Depth (ft)**	**Sample Type** (Composite/ Discrete)	TPH as **GASOLINE (C5-12)**	TPH as **DIESEL (C12-C22)**	TPH as **MOTOR OIL (C22-C40)****	**Antimony**	**Arsenic** [Bkg]	Soluble **ARSENIC** STLC/TCLP (mg/L)	**Barium**	Soluble **BARIUM** STLC/TCLP (mg/L)	**Beryllium**	**Cadmium**	**Chromium**	**Cobalt**	**Copper**	**Lead**	Soluble **LEAD** STLC/TCLP (mg/L)	**Mercury**	**Molybdenum**	**Nickel**	**Selenium**	**Silver**	**Thallium**	**Vanadium***	**Zinc**
SS-7	5/5/2022	0.5	Composite	**4.22 B**	**40.4**	**605**	<2.29	<2.29	--	**84.2**	--	**0.271**	**0.0661 J**	**15.2**	**4.7**	**23.1**	**3.38**	--	**0.0347 J**	**0.431 J**	**9.98**	<2.29	<1.15	<2.29	**45.6**	**38.7**
		1.5	Composite	**4.30 B**	**2.45 J**	**33.7**	<2.15	<2.15	--	**95.4**	--	**0.618**	<0.537	**5.67**	**1.87**	**5.3**	**8.81**	--	<0.0430	**0.928**	**1.75 J**	<2.15	<1.07	<2.15	**30**	**65.1**
		3	Composite	**4.25 B**	**0.996 J**	<4.98	<2.49	**2.21 J**	--	**127**	--	**0.653**	**0.566 J**	**22**	**5.16**	**14.6**	**25.5**	--	**0.0887**	**1.1**	**14.9**	<2.49	<1.24	<2.49	**39.4**	**68.2**
SS-8	5/5/2022	0.5	Composite	**3.30 B**	**3.26 J**	**27.98**	<2.20	<2.20	--	**91.2**	--	**0.656**	--	**5.76**	**3.33**	**12.4**	**4.06**	--	<0.0439	**1.14**	**2.08 J**	<2.20	<1.10	<2.20	**35.4**	**51.7**
		1.5	Composite	**3.11 B J**	**1.00 J**	**6.13**	<2.25	<2.25	--	**92.1**	--	**0.609**	<0.563	**5.55**	**1.91**	**5.63**	**21.2**	--	**0.0623**	**1.04**	**2.62**	<2.25	<1.13	<2.25	**24.9**	**59.2**
		3	Composite	**4.03 B**	**1.04 J**	**3.45**	<2.42	**3.15**	--	**102**	--	**0.346**	**0.574 J**	**10.1**	**4.67**	**16.4**	**40.8**	--	**0.107**	**1.08**	**12.1**	<2.42	<1.21	<2.42	**21.9**	**71.2**
SS-9	5/5/2022	0.5	Composite	**2.72 B J**	**67.7 J**	**1,226**	<2.18	**27.9**	--	**85.6**	--	**0.103 J**	**0.175 J**	**7.82**	**3.39**	**9.52**	**5.56**	--	**0.0340 J**	**0.822**	**7.03**	<2.18	<1.09	<2.18	**27.8**	**31.9**
		0.5	Discrete (**SS-9A**)	--	--	--	--	**17.7**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		0.5	Discrete (**SS-9B**)	--	--	--	--	**72.6**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		1.5	Composite	**3.29 B**	**0.884 J**	**2.89**	**1.32 J**	**10.3**	--	**187**	--	**0.178 J**	**0.157 J**	**17.2**	**10.8**	**11.9**	**13**	--	**0.171**	**0.291 J**	**11.9**	<2.30	<1.15	<2.30	**46**	**29.2**
		1.5	Discrete (**SS-9A**)	--	--	--	--	**2.13**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		1.5	Discrete (**SS-9B**)	--	--	--	--	**54.5**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		3	Composite	**2.89 B J**	<4.57	**1.7**	<2.28	**2.08 J**	--	**96.2**	--	**0.27**	**0.414 J**	**7.5**	**4.2**	**9.28**	**42.5**	--	**0.0485**	**0.843**	**9.05**	<2.28	<1.14	<2.28	**17.1**	**44.5**
DTSC-Modified Screening Levels [1] (for human health risk pathway) For Residential or Commercial Land Use				Not Established			31 / 470 (EPA)	0.11 / 0.36	5 mg/L	15,000 / 220,000 (EPA)	100 mg/L	16 / 230	71 / 780	120,000 / 1,800,000 (EPA) (Cr-total)	23 / 350 (EPA)	3,100 / 47,000 (EPA)	80 / 320	5 mg/L	1.0 / 4.4	390 / 5,800 (EPA)	820 / 11,000	390 / 5,800 (EPA)	390 / 5,800 (EPA)	0.78 / 12 (EPA)	390 / 5,800 (EPA)	23,000 / 350,000 (EPA)
Environmental Screening Levels (ESLs) [2] (for human health risk pathway) For Residential or Commercial Land Use (& for a construction worker)				430 / 2,000 / (1,800)	260 / 1,200 / (1,100)	12,000 / 180,000 / (54,000)	11 / 160 (50)	11.0 /11.0 (Bkg) 0.067 / 0.31 (2.0)	5 mg/L	15,000 / 220,000 (3,000)	100 mg/L	16 / 230 (27)	78 / 1,100 (51)	120,000 / 180,000 (Cr-total) (53,000)	23 / 350 (28)	3,100 / 47,000 (14,000)	80 / 320 (160)	5 mg/L	13 / 190 (44)	390 / 5,800 (1,800)	820 / 11,000 (86)	390 / 5,800 (1,700)	390 / 5,800 (1,800)	0.78 / 12 (3.5)	390 / 5,800 (470)	23,000 / 350,000 (110,000)
"Tier 1 ESL" [2] Lowest ESL(and basis) for All Possible Pathways & Land Uses (includes residential)				**100** (O)	**260** (NC)	**5,100** (GC)	11 (HH, resid)	0.067 (HH, resid)		3,000 (HH, const)		16 (HH, resid)	78 (HH, resid)	120,000[Cr-total] (HH, resid)	23 (HH, resid)	3,100 (HH, resid)	80 (HH, resid)		13 (HH, resid)	390 (HH, resid)	86 (HH, const)	390 (HH, resid)	390 (HH, resid)	0.78 (HH, resid)	390 (HH, resid)	23,000 (HH, resid)

Notes

Cell Shading	= Indicative of an agency exceedance for a particurlar land use.
BOLD =	A bolden result indicates the metal was detected by the lab (i.e., detected above the *Reported Detection Limit* (RDL)).
BOLD =	Green shaded cell indicates the lab detciton was **above** the ESL or DTSC **Residential Land Use Threshol**d.
BOLD =	Red shaded cell indicates the lab detciton was **above** the ESL or DTSC **Commercial Land Use Threshol**d.
BOLD =	Yellow-shaded cell indicates the lab detciton was **above** the **Commercial Land Use** ESL, but below the ***Naturally Occuring (background)***
BOLD =	Brown-shaded cell indicates the lab detciton was **above** the ESL **Construction Worker Threshold**
BOLD =	ADDITIONAL TEST for Landfill acceptance: Blue shaded cell incidcates the Soluble (STLC or TCLP) value exceeds Hazardous Waste Screening Threshold

1 = **CA DTSC Soil Screening Levels:** From the California Department of Toxic Substances Control (DTSC), Office of Human and Ecological Risk (HERO), Human Health Risk Assessment (HHRA) Note Number 3, Table 1, June 2020 <https://dtsc.ca.gov/wp-content/uploads/sites/31/2019/04/HHRA-Note-3-June-2020-A.pdf >. **If no DTSC screening level is established then the corrisponding US EPA RSL is provided** (see below)**.**

EPA = **US EPA Region 9 Soil Regional Screening Levels (RSLs):** From *US EPA Regional Screening Levels for Soil* < https://www.epa.gov/risk/regional-screening-levels-rsls-generic-tables) , last updated May 2021 using the Summary Table [based on Carcinogenic Target Risk (TR) =1E-6, Noncancer Hazard Index (HI) =1.0].

2 = **Environmental Screening Levels (ESLs):** Regional Water Quality Control Board (San Francisco Bay Region) guideline document: *Screening for Environmental Concerns at Sites With Contaminated Soil and Groundwater* (Final version, 2019). The ESLs are intended to provide quantitative risk-based guidance on whether further assessment or remediation of contamination is warranted <https://www.waterboards.ca.gov/sanfranciscobay/water_issues/programs/ESL/new/ESL_Summary_Tables_24Jan19_Rev1.pdf >

The " **Tier 1 ESL**" =The most conservative *Environmental Screening Level* (ESL) across all potential pathways including leaching (L), human health (HH, typically for a residential land use) & odor/nuisance (O)). Note: ecolologic ("Terrestrial Habitat") is not included.

RDL = **Reported Detection Limit** = is the laboratory-determined value that is 2 to 5 times above the Method Detection Limit (MDL) that can be reproduced in a manner that results in a 99% confidence level and is both accurate and precise.

Bkg= **The background (bkg)** concentration of naturally-occurring Arsenic for the greater Bay Area is established as 11 mg/kg based on a 2011 study. The study determined background concentrations (99th percentile) of arsenic in the San Francisco Bay Region, including Santa Clara.
- Additional information at (http://www.waterboards.ca.gov/sanfranciscobay/water_issues/programs/ESL/2011_Arsenic_Background_Duverge.pdf)
- See charts/calculation sheets for UCL-95 concentration of site specific arsenic concentrations.

Cr-total= Chromium's risk-based thresholds are based on Chromium III as there is no established threshold for Total Chromium. Total Chromium = Cr-III + Cr VI.

= (C22-C32) + (C32-C40) = the hydrocarbon motor oil value

ND = Non Detection
NE = Not Established
'-- = Not Analyzed

RDL = **Reported Detection Limit** = is the laboratory-determined value that is 2 to 5 times above the Method Detection Limit (MDL) that can be reproduced in a manner that results in a 99% confidence level and is both accurate and precise.

< = A "less than" symbol indicates no detectable concentrations (i.e., the laboratory did not detect the contaminant at the concentration shown).
B= The same analyte is found in the associated blank
I = Laboratory reports that the detection value is between MDL and RDL, and should be considered an estimate.
L = Indicates the lowest ESL is based on a **potential Leaching pathway** (for groundwater protection).
HH, resid = Indicates the lowest ESL is based on a **potential Human Health & Safety Pathway** for Residential Land Use (i.e, ingestion, inhalation, dermal).
O = Indicates the lowest ESL is based on a **potential "odor nuisance"** (i.e. 100 mg/kg for gasoline).

Table 2

Summary of Active Soil Vapor Analytical Results

Volatile Organic Compounds

113 Lincoln Street, Santa Cruz

All vapor sample results are in micrograms per meter cubed (ug/m^3)

Sample Information			Volatile Chemicals of Potential Concern (COPCs) (Volatile Organic Compounds by EPA Method TO-15)								Other Volatile Compounds (Common Urban Compounds)	Field Leak Check Monitoring (Isopropyl Alcohol)		
			Chlorinated Solvent Compounds			Volatile Petroleum Hydrocabons (gasoline) & Volatile Constituent Compounds						Field Shroud Concentration (avg., in ppm)	Laboratory Results (in ug/m3)	Calculated Leakage (percent, %)
Sample Date	Sample Depth (ft, bgs)	Sample ID#	PCE (Tetrachloroethene)	TCE (Trichloroethene)	cis-1,2-DCE	TPH-Gasoline	Benzene	Ethylbenzene	Toluene	Xylenes				
Phase II Property Screening Investigation 5/6/2022	5-ft	SV-1	5.6	< 3.3	< 3.3	650	4.1	11	9.7	45	Cyclohexane = 51 1,2-Dibromoethane = 60 Dichlorodifluoromethane = 2.2 1,2-Dichloroethane = 15 Ethanol = 18 Methyl ethyl ketone = 9.5 Trichlorofluoromethane = 1.3	124.1	5.7	0.04
		SV-2	< 160*	< 170*	< 100	100,000,000[A]	< 66*	< 100*	160 J	< 290*	Cyclohexance = 350 J Propylene = 110 J	108.8	< 630	0.04
		SV-3	9.8	0.86	< 3.2	980	0.86	< 8.0	3	3.8	Cyclohexane = 53 Dichlorodifluoromethane = 2.6 Hexane = 0.82 Methyl ethyl ketone = 3.7 Trichlorofluoromethane = 1.4	244.3	13	0.04
		SV-4	4.6	2.2	< 3.3	3,700	2.2	0.95	3.4	5.5	Cyclohexane = 98 Dichlorodifluoromethane = 2.5 Hexane = 1.7 Methyl ethyl ketone = 6.7 Propylene = 11 Trichlorofluoromethane = 1.4	173.3	10	0.04
		SV-5	2.9	9.6	< 4.0	1,100	3	< 10	3.8	1.8	Cyclohexane = 290 Dichlorodifluormethane = 2.4 Hexane = 3.7 Methyl ethyl ketone = 4.9 Propylene = 4.4 Trichlorofluoromethane = 1.5	205.2	2.3	0.00
		SV-6	8.4	< 4.2	< 4.2	190	0.71	< 10	1.3	< 21	Cyclohexane = 11 Dichloofluoromethane = 2.6 Mehtyl ethyl ketone = 3.4 Propylene = 4.2 Trichlorofluoromethane = 1.4	166.3	2.5	0.00
		SV-7	29	6	< 3.2	900	1.4	< 8.0	3.1	< 16	Cyclohexane = 360 Dichlorodifluoromethane = 2.5 Hexane = 3.9 Methyl ethyl ketone = 1.2 Propylene = 8.9 Trichlorofluoromethane = 3.9	267.1	2.9	0.04
		SV-8	2.1 J	5	< 3.3	1,100	0.86 J	< 8.2	2.5	3.8	Cyclohexane = 55 Dichlorodifluoromethane = 2.2 J Hexane = 0.61 J Methyl ethyl ketone = 1.3 J Trichlorofluoromethane = 1.3 J	267.2	53	0.040689
		SV-9	2.3 J	30	< 3.0	3,200	4.8	1.0	10	4.6	Cyclohexane = 420 Difluoromethane = 2.2 J Ethanol = 10 Hexane = 5.6 J Methyl ethyl ketone = 2.1 J Propylene = 1.1 J Trichlorofluoromethane = 2.7 J	188	2,100	0.04
DTSC-Modified Soil Gas Screening Levels (SLs) [1] Residential / Commercial Land Use			15 / 67	16 / 100	280 / 1200	20,000 / 83,000	3.2 / 14	37 / 160	10,000 / 44,000	3,500 / 15,000	Varies (no exceedances)			
RWQCB (Water Board) Environmental Screening Levels (ESLs) [2] Residential / Commercial Land Use														

See Notes on following Page

Table 2

Summary of Active Soil Vapor Analytical Results

Volatile Organic Compounds

113 Lincoln Street, Santa Cruz

All vapor sample results are in micrograms per meter cubed (ug/m^3)

Sample Information			Volatile Chemicals of Potential Concern (COPCs) (Volatile Organic Compounds by EPA Method TO-15)								Other Volatile Compounds (Common Urban Compounds)	Field Leak Check Monitoring (Isopropyl Alcohol)		
			Chlorinated Solvent Compounds			Volatile Petroleum Hydrocabons (gasoline) & Volatile Constituent Compounds						Field Shroud Concentration (avg., in ppm)	Laboratory Results (in ug/m3)	Calculated Leakage (percent, %)
Sample Date	Sample Depth (ft, bgs)	Sample ID#	PCE (Tetrachloroethene)	TCE (Trichloroethene)	cis-1,2-DCE	TPH-Gasoline	Benzene	Ethylbenzene	Toluene	Xylenes				

Notes

1 = ***California DTSC Soil Vapor Screening Levels (SL)*** **:** < https://dtsc.ca.gov/wp-content/uploads/sites/31/2022/02/HHRA-Note-3-June2020-Revised-May2022A.pdf >.
These human health-based cleanup goals are established by the California Department of Toxic Substances Control (DTSC), Office of Human and Ecological Risk (HERO) in their guideline and summary lookup tables (*Human Health Risk Assessment (HHRA) Note Number 3,* Table 1, **June 2020 revised May 2022**). The soil vapor thresholds ar based on a Vapor Attenuation Factor of 0.03.

2 = ***Environmental Screening Levels*** **(ESLs):** < https://www.waterboards.ca.gov/sanfranciscobay/water_issues/programs/esl.html>
- Note: the most current ESLs soil gas thresholds for subslab and soil vapor sampling are identical to the DTSC *Soil Vapor Screening Levels* (SLs) described above, and were therefore not replicated as a separate line.
Source: The Regional Water Quality Control Board (San Francisco Bay Region) guideline document: *Screening for Environmental Concerns at Sites With Contaminated Soil and Groundwater* (**Final version, 2019**).

BOLD =	A bolden concentration indicates the laboratory detected the contaminant at the concentration shown.
BOLD =	Green-shaded cell indicates the lab result concentration exceeds the residential screening threshold limit (US EPA RSL, Califorinia DTSC or RWQCB ESL threshold.)
BOLD =	Red-shaded cell indicates the lab result concentration exceeds the commercial screening threshold limit (US EPA RSL, Califorinia DTSC or RWQCB ESL threshold.)

*= Method Detection Limit (MDL) used due to elevated PQL and MDL limits from dilution of sample.

PCE = Tetrachloroethene **cis-1,2-DCE =** cis-1,2-Dichloroethene

TCE = Trichloroethene

RL = Reporting Limit (RL) (aka: the Pr*actical Quantitation Limit, PQL).* The laboratory generally sets the RL/PQL limits at 2 to 5 times greater than the MDL. Anything that the lab reports above this level *is defensible as 99.5% actual concentration found for that sample analyzed* .

MDL = Method Detection Limit (MDL) (aka: the Detection Limit, DL): The MDL is a statistically derived value which represents the lowest concentration that can be *detected by a laboratory within a 99% confidence level of presence* . This level is considered to be an estimated value so if detected above the MDL (but below the RL), then it is flagged with a "J-flag" to indicate an estimated value. Non-detects are reported down to the MDL's (i.e., < 8.5).

J = This **"J-Flag"** is a lab-reported value that is detected at a concentration that is below the laboratory's RDL but above the MDL - the detection is considered an accurate detectionof the compound, but it is an estimated value.

< X = Constituent not detected above laboratory's Method Detection Limit (MDL), X.

A = Laboratory confirmed that this elevated detection of TPH-Gas is due to high concentrations of Pinene, and some Camphor, and D-limonene found in the sample as they fall into the "gasoline" range. These chemicals are commonly associated with natural oil/extracts from natural plants and trees. This property has historically been utilized for the weekly farmers market for a very long time, and its likely that a concentrated bottle of natural extracts was spilled at this location producing this false TPH-Gas detection.

Table 3

Groundwater Results: Summary of Analytical Lab Data

Total Petroleum Hydrocarbons - Volatile Organic Compounds

113 Lincoln Street, Santa Cruz

All groundwater results are in micrograms per liter (ug/L)

Sample Information			Total Petroleum Hydrocarbons (TPH) by EPA Method 8015	Volatile Organic Compounds by EPA Method 8260B								
				Volatile Fuel Constituent Compounds					Solvent Compounds			
Sample ID	Sample Date	Depth To Water (feet bgs)	TPH GASOLINE (C5 - C12)	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	PCE	TCE	cis-1,2-DCE	Other VOC's
GW-1	May 5, 2022	10.3	**50.7 B J**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	All Other VOCs = ND
GW-2		11.1	**52.3 B J**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	All Other VOCs = ND
GW-3		9.4	**59.6 B J**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**0.176 J**	All Other VOCs = ND
GW-4		10.1	**59.4 B J**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**0.952 J**	trans-1,2-dichloroethene = 0.183 J All Other VOCs = ND
GW-5		9.1	**56.1 B J**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**0.320 J**	All Other VOCs = ND
Water Quality Goals (WQG) [1] *(*= Human Health ESL if no MCL established)*			760* (human health)	1	150	300	1,750	13	5	5	6	Varies
Environmental Screening Levels (ESLs) [2] **Tier 1 (worst case) concentration (& ESL pathway)**			100* (odor nuisance)	0.42 (vapor intrusion)	40 (odor nuisance)	3.5 (vapor intrusion)	20 (odor nuisance)	5 (odor nuisance)	0.64 (vapor intrusion)	1.2 (vapor intrusion)	6 (MCL)	Varies

(see next page for table notes)

Notes:

1 = ***Water Quality Goals*** **(WQGs):** The listed ***Water Quality Goals*** listed are based of ***Maximum Contaminant Levels (MCLs)*** - see note below. However, if a MCL does not exist for a constituent, the listed WQG is based on ***Environmental Screening Levels (ESLs)*** - constituents with a WQB based on an ESLs are identified with an asterisk ("(*)", see note below.

Maximum Contaminant Levels (MCLs): < https://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/Chemicalcontaminants.html >. **MCL's** are drinking water standards established in Title 22 of the California Code of Regulations for safe water coming from a tap or a drinking water aquifer. If no MCL is available the corresponding ***Environmental Screening Level (ESL, below)*** **health based pathway** will be used in its place.

2 = ***Environmental Screening Levels*** **(ESLs):** < https://www.waterboards.ca.gov/sanfranciscobay/water_issues/programs/esl.html> The ESLs are agency-stablished threshold concentrations intended to provide quantitative risk-based guidance on whether further assessment or remediation of contamination is warranted based on risk pathways (protection of human heath, groundwater and/or ecological). Source: The Regional Water Quality Control Board (San Francisco Bay Region) guideline document: Screening for Environmental Concerns at Sites With Contaminated Soil and Groundwater (Final version, 2016).

100 **= Laboratory detected concentration is equal to or greater than the Water Quality Goal.**

**** =** C22-C32 is the carbon chain range established for Motor Oil-range petroleum hydrocarbons. The C32-C40 range is for residual oils (asphalt

< X = Constituent *not detected* above the laboratory-*Reported Detection Limit (RDL* , X). Refer to laboratory reports for

RDL = Reported Detection Limit = is the laboratory-determined value that is 2 to 5 times above the Method Detection Limit (MDL) that can be reproduced in a manner that results in a 99% confidence level and is both accurate and precise (based on Laboratory's Blank (QA/QC).

MDL = Method Detection Limit - The minimum concentration of a substance that can be measured and reported with a 99% confidence that the analyte concentration is greater than zero.

J = This **"J-Flag"** is a lab-reported value that is detected at a concentration that is below the laboratory's RDL but above the MDL - the detection is considered an accurate detection of the compound, but it is an estimated value.

B = The same analyte is found in the associated blank

ug/L = micrograms per liter - parts per billion.

bgs= **b**elow **g**round **s**urface.

TCE = Tri-chloroethene

PCE = Tetra-chloroethene

cis-1,2 DCE = cis-1,2 Dichloroethene

APPENDIX A

COLLECTED PHASE I ESA INFORMATION

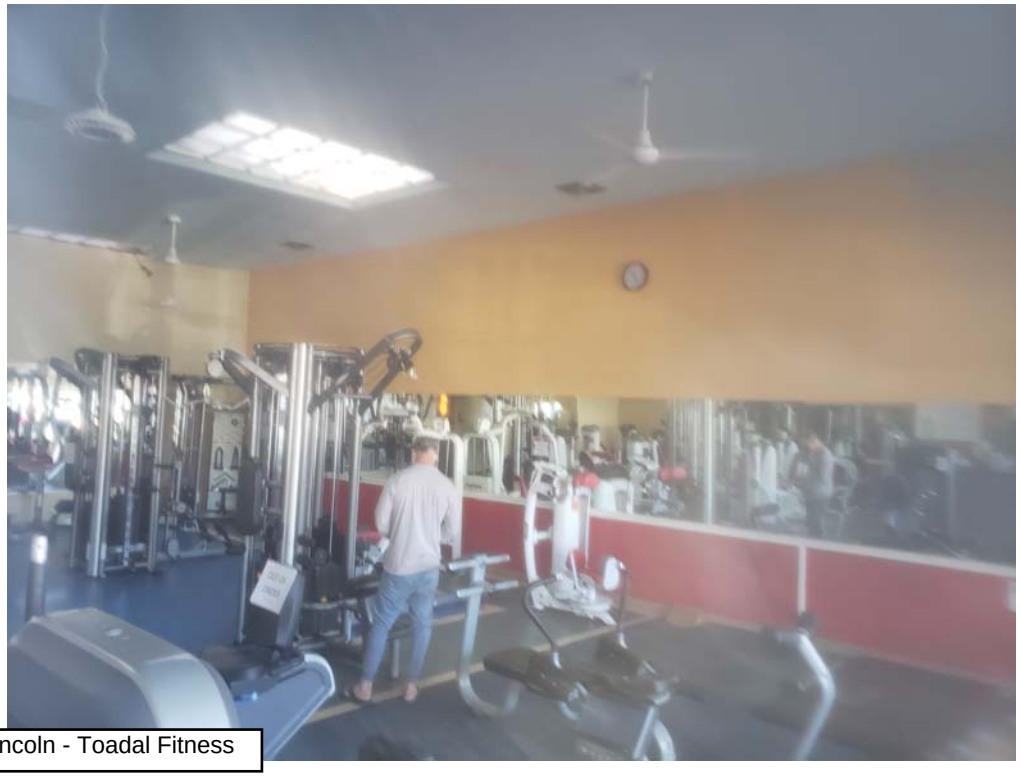
Site Inspection Checklist with Photo Sheets

Land Use Questionnaire

Interviewing Documentation

Lincoln Street - Commercial building across street from Site. Former location of 108 Lincoln Street (Royal Dry Cleaners 1960 - 1987)

113 Lincoln Street - Subject Site - only building on Site, operating as fitness gym.

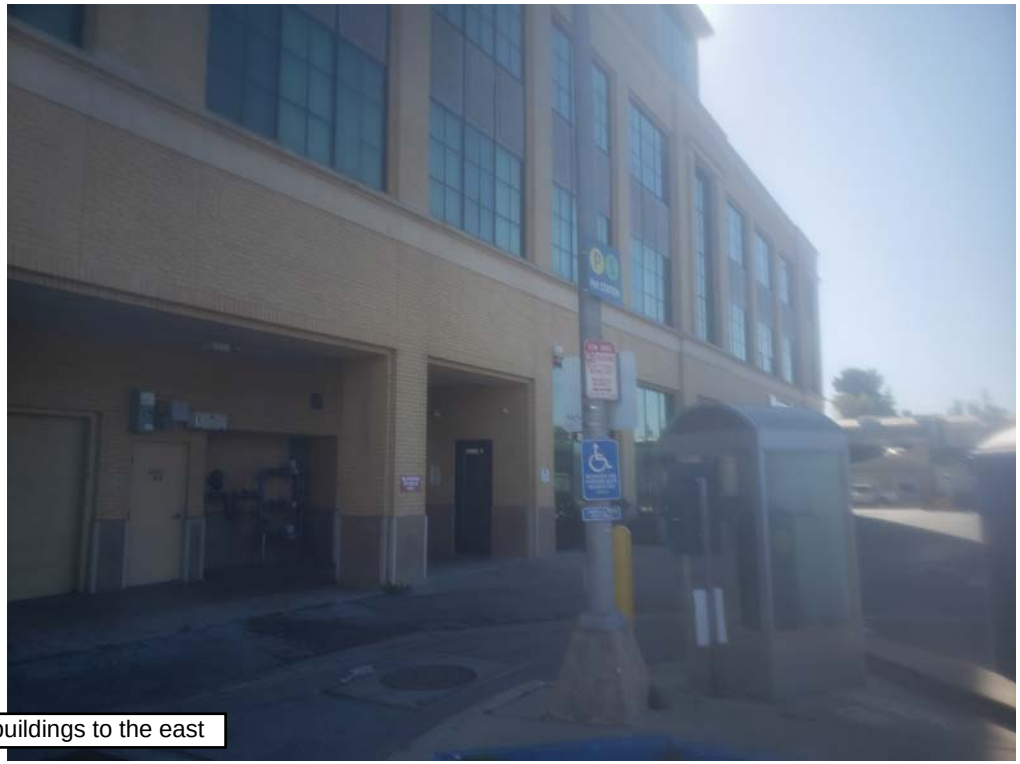


Interior views of 113 Lincoln - Toadal Fitness

Men/Women locker rooms

Shower drains - only floor drains observed

Remainder of Site is parking lot



Adjoining commercial buildings to the east

Church across Cedar Street on West

Aerial views of Site

Weber, Hayes & Associates
Hydrogeology and Environmental Engineering
120 Westgate Drive, Watsonville, CA 95076
(831) 722-3580 // www.weber-hayes.com

Phase I Environmental Site Assessment

Site Inspection Checklist

Objective: To visually evaluate and document the extent of the target property(ies) for the likely presence of *recognized environmental conditions*. Photodocumentation gathered during the site inspection are appended at the end of this form.

Site/Facility Name: _____

Site Address: 113 Lincoln Street & City Parking Lot

Site Contact: _____

1. **Current Uses of the Property:** *To include (1) general description of the facility & commercial or industrial processes therein, (2) topography, (3) site improvements [# of buildings, size/age/condition], (4) occupants/vacancies and the nature of business operations, and (5) any indications of past site use.*

Site is largely flat downtown property with City Parking Lot and small concrete on slab commercial building. Building is occupied by a fitness/gym business (Toadal Fitness). Site is largely encapsulated by the asphalt parking lot and single commercial building. Toadal Fitness building is comprised of locker/shower rooms for both men and women and open space for gym equipment. No bulk chemical storage and no indication of any significant spills or staining observed. The city parking lot is mostly asphalt with some limited landscaping areas. Some mild staining was observed across the parking lot, but appeared in relatively good condition. Locker room/shower room contains two floor drains each (men/women).

Project #: _____2-9-22_____

Date: _____

Inspector: _____

2. Site Infrastructure:

	Yes	No	Notes:
▪ Any wells, water tanks or water towers?	☐	X	
▪ Boiler rooms?	☐	X	
▪ Electrical transformers?	☐	☐	
▪ Septic System?	☐	X	
▪ Drainage wells or dry wells?	☐	X	

Note observations and data for heating sources, water supply source(s), solid waste disposal and electrical systems.

Site is located downtown Santa Cruz, and most utilities are buried underground. Site is serviced by City of Santa Cruz for water and sewer, and PG&E for electrical. No overhead lines observed.

3. Evidence of Hazardous Materials Storage & Use *(check appropriate):*

	Yes	No
▪ Haz-mat storage area(s)? Location?	☐	X
▪ Abandoned drums or containers?	☐	X
▪ Aboveground Storage Tanks?	☐	X
▪ Underground Storage Tanks?	☐	X
▪ Fuel or Chemical Dispensing Equipment or vent piping?	☐	X
▪ Pools of liquid? Characteristics?	☐	X
▪ Sumps, oil/water separators and collection pits?	☐	X
▪ Unusual Odors, staining or distressed vegetation?	☐	X
	☐	☐
	☐	

No bulk chemical storage or use observed or reported on Site. Only small household sized chemicals for general cleaning and laundry.

4. Exterior Observations:

	Yes	No
▪ Exterior surface coverings? *(describe condition, type, % native soils)*	☐	☐
▪ Paving patches/staining?	X	☐
▪ Manholes/utility covers?	☐	☐
▪ Any stacks or HVAC units visible on roof?	X	☐
▪ Mounds or depressions?	☐	X
▪ Do surface water catch basins drain?	X	☐
▪ Any ditches or drainages? *(If flow is present, identify the source)*	☐	X

Site parking lot contains stormwater system along the street. Some patching and staining observed across the parking lot. HVAC units observed on the commercial building.

5. Interior Observations:

	Yes	No
▪ Maintenance Areas?	☐	X
▪ Hydraulic equipment?	☐	X
▪ Interior floor staining, cracking or patching?	☐	X
▪ Interior floor drains? Outlet Sump?	X	☐
▪ Interior floor integrity (good, satisfactory or poor)?	X	☐

Two floor drains in each men/womens shower/locker room. Interior appeared to be in relatively good condition. Floor appeared in good condition.

6. Describe Adjoining Site Land Uses and Note Any Areas of Concern:

North -parking lot/commercial – Lincoln Street

East – Commercial Buildings

South – Commercial – Cathcart Street

West – Church – Cedar Street

7. Any inaccessible Areas of the Property:

No

ADDITIONAL INFORMATION OBTAINED & UTILIZED DURING SITE INSPECTION

	Yes	No
Photo Sheets	☐	☐
Hazardous Materials Management Plans (HMMP)	☐	☐
Permits	☐	☐
Previous Reports/Inspections	☐	☐
Other	☐	☐
	☐	☐

Weber, Hayes & Associates
Hydrogeology and Environmental Engineering
120 Westgate Drive, Watsonville, CA 95076
(831) 722-3580 // www.weber-hayes.com

Phase I Environmental Site Assessment
User/Client Questionnaire

Overview: *Phase I Environmental Site Assessment (ESA)* standards[1] require that the party requesting this ESA (i.e., the **"user",** or **client**), make a good faith effort to provide and/or obtain the following disclosure items, which are generally available during the property transaction escrow process:

- Reason for contracting this Phase I ESA
- Knowledge of any environmental leans or agency restrictions on the property
- Specialized knowledge of the property
- Any discounts to the property fair-market value associated with chemical spills or releases
- Commonly known ("reasonably ascertainable") information regarding chemical storage/use
- Available environmental reports

Please provide the following information to the best of your ability.

Site/Facility Name: **113 Lincoln Street & City Parking Lot** (2 parcels- 1.53 acres combined)

Site Address: [Santa Cruz County APNs 005-141-21, -11]

Name/Title: _____

[1]: ASTM Standard E 1527-05 and EPA All Appropriate Inquiries (AAI) guidelines,

1. Reason for Performing this ESA *(check appropriate):*

☐ Lender: Property sale requirement for lender

☐ Buyer: Due diligence property screening by buyer.

☐ General Liability: "Landowner Liability Protections" (LLPs) as per Federal environmental laws

☐ Personal Comfort Level: Better understanding of land uses & potential environmental liabilities

☒ Other: Parcels are identified for a Redevelopment Project

2. Environmental Cleanup Liens *(check appropriate):*

Yes ☐ **No** ☒ Are you aware of any ***environmental liens*** placed on the property by a regulatory agency (Federal, State or Local)?

If yes, please provide details:

3. Land-Use Limitations (check appropriate):

Yes ☐ **No** ☒ Are you aware of any ***"Activity Land-Use Limitations"*** *(AULs)* placed upon the Site by Federal, State or Local regulatory agencies such as engineering or institutional controls?

If yes, please provide details:

4. Specialized Knowledge of the User/Client (check appropriate):

As the person or entity requesting this *Phase I ESA* ("user"), do you have any specialized knowledge or experience pertaining to the subject Site or nearby/adjoining property that would give you distinct knowledge of chemical usage and/or industrial processes at the subject Site?

Yes ☐ **No** ☒ Are you a current or former occupant of the Site? Current

Yes ☐ **No** ☒ Are you involved in the same type of business/industry, and are familiar with commercial/industrial processes or chemical storage

If yes, please provide details:

5. Comparison of Purchase Price to Fair Market Value (check appropriate):

To the extent of your knowledge, does the requested purchase price of the subject Site reflect the fair market value of the property? If a discrepancy is present, have you considered whether the lower purchase price is due to environmental contamination believed to be or known to be present at the Site?

Yes ☐ **No** ☒ Does the property purchase price reflect a discounted value relative to fair market value?

Yes ☐ **No** ☒ If the property is being sold below fair market value, is the reason attributed to a known/perceived chemical release (i.e., contamination)

If yes, please provide details:

6. "Reasonably Ascertainable Information" (brief description):

Are you aware of any ***commonly known*** or ***reasonably ascertainable information*** pertaining chemical storage/usage on the subject Site? Specifically:

a) Prior Land Use(s): Do you know previous land use(s) at the subject Site (land uses/businesses)?

Current use of City Public Parking Lot and Commercial Building.

b) Chemical Use or Storage: Do you know of any current or historical use/storage/generation of chemicals, fuels, or hazardous waste at the subject Site?

No known

c) Chemical Releases: Are you aware of any reported or unreported chemical spills or releases that occurred at the subject Site? *[Current or Historical]*

No known

d) **Environmental Clean-ups**: Are you aware of any reported or unreported environmental cleanups that have occurred at the subject Site? *[Current or Historical]*

No known

7. Degree of Obviousness of Contamination:

Based on your knowledge of the property, are you aware of any obvious indicators that would suggest the presence (or likely presence) of contamination at the subject Site?

No known

8. Helpful Documents: Are you aware of existing reports (listed below) for the subject Site?

Yes	No	
☐	☒	Previous Phase I or Phase II ESAs
☐	☒	*Hazardous Materials Management Plans* (HMMPs) or Chemical Storage Inventories
☐	☒	Industrial Stormwater Monitoring Plans/Reports (SWPPPs or compliance reports)
☐	☒	Permitting or Documentation re: Aboveground or Underground Storage Tanks
☐	☒	Hazardous Waste Generator notices, disposal manifests, or compliance reports
☐	☒	Regulatory directives or *No Further Action (NFA) l*etters.

If yes to any of the above, please provide details (year, author/consultant if possible):

Additional comments to elaborate on answers (if needed):

No known past uses or current uses that would indicate contamination on either site.

To the best of my knowledge I attest that the above information is true:

Signature: _____ Date: 2/8/2022

Printed Name: Brian Borguno

Title: Development Manager - City of Santa Cruz Economic Development Dept.

Reference: Information & Definitions

As per **ASTM *Standard E 1527-05* and EPA *All Appropriate Inquiries* (AAI)**

"USER": The ***user*** (i.e. the party requesting this Phase I ESA), is required to provide a short list of items that are more readily available to the parties involved with the property transaction. This information is used to support the case for the *user* of the ESA to qualify for one of the *landowner liability protections* (LLPs) defenses under Federal environmental law.

APPENDIX B

HISTORICAL RESEARCH REPORTS (EDR)

City Directory Listings

Aerial Maps

Sanborn Maps

Historical Topo Maps

APPENDIX C

EDR RADIUS REPORT
(Database Report of Regulated Sites)

APPENDIX D

Related Reports

Closure Letters & Regulatory Correspondence

APPENDIX E

Phase II Field Notes,
Photo Sheets, and
Field Methodology

APPENDIX F

State-Certified Analytical Laboratory Results

June 5, 2022

Soil, Soil Vapor, & Groundwater Analytical Results

(Pace Analytical Laboratories)