IV.H  HAZARDS AND HAZARDOUS MATERIALS

1. INTRODUCTION


2. ENVIRONMENTAL SETTING

Historical Setting

The Project Site was used for the treatment of oil field production water and other fluids recovered from oil production activities from 1926 to 1988. The water treatment process initially took place in settling basins designed to remove oil and sediment from the produced water and discharge the treated water to the sewer system. Crude oil recovered from this process was recycled. In 1959, a wastewater treatment plant was constructed on the Project Site that consisted of five circular concrete-walled skimming basins and associated pumps, above ground storage tanks (ASTs), pipelines and related small buildings and facilities. As illustrated by Figure IV.H.1: Former Water Treatment Facilities Diagram, the facility was located north of the two rectangular-shaped, clay-lined settling basins that are still present in the southern portion of the site, south of Baker Street. A settling pond was also located north of Baker Street. Wastewater treatment operations ceased in 1998. Buildings, ASTs, and related aboveground structures (except for the concrete-walled skimming basins and small concrete-lined vaults with control valves) were cleaned, demolished, and removed from the Site in 2000 and 2001. The two large settling basins were later reconfigured for use as bioremediation basins to treat oily residual soil.
Note: All locations and dimensions of the former facilities in the diagram are approximate and for analysis purposes only.
**Existing Conditions**

Currently, the Project Site is vacant and fenced with a mix of chain link fences, wooden fences, and hedges. Access to the Project Site is secured by gates adjacent to Wardlow Road and Golden Avenue. The vacant site contains some remnants of the water treatment facilities removed in 2000 and 2001, such as building foundations, roads, and underground pipes.

The Project Site contains two bioremediation basins, which are large flat areas. Elevations on the property range from 20 to 40 feet.

The primary chemicals of concern (COCs) present on the Project Site associated with past operations include hydrocarbons (e.g. diesel and oil), as well as elevated concentrations of lead and arsenic, as described further below.

**Remediation Activities**

In October 2000, the City of Long Beach Fire Department (LBFD) directed that wastewater and sludge be removed from the Site and that soil and groundwater impacted by contaminants be remediated under a Site Remediation Permit overseen by the City’s Fire Department and Department of Health and Human Services (LBDHHS). A 2002 Consent Decree between the City and Oil Operators formalized the remediation requirements and a Corrective Action Plan to implement bioremediation of oil-impacted soil was approved by the City in 2003. Bioremediation of oily soil has been ongoing in the large rectangular basins since that time. The lead oversight agency for the soil remediation is LBDHHS. The Los Angeles Regional Water Quality Control Board (LARWQCB) is the oversight agency for groundwater monitoring.

The process of bioremediation employs the use of living organisms such as microbes and bacteria to naturally break down and detoxify contaminants in soil without removing the soil from the ground. Regular tilling of the top foot of soil introduces oxygen and moisture to enhance the effectiveness of the bioremediation. At the Project Site, the bioremediation process will reduce the amount of oily soil and return the soil to a state that is not hazardous or harmful to human beings. Soil that cannot feasibly be addressed through bioremediation will be excavated for removal to an off-site disposal facility. In short, the remediation activities will result in a site that eliminates human health risks associated with the former oil activities on site.

Removing contaminants from the soil also removes the source of contaminants that can affect the groundwater through infiltration. Oil Operators maintains a number of groundwater monitoring wells on

the Project Site and samples the wells periodically to monitor the level of chemicals present in the groundwater. The levels of contaminants in groundwater are expected to decrease over time as the contaminants in the overlying soil are remediated. Contaminants in groundwater also decrease through degradation by natural processes. To date, no remediation of the groundwater has been required of Oil Operators.

Three subsurface pipelines that historically contained petroleum products, including crude oil and gasoline, are present beneath Golden Avenue to the east of the Project Site. These pipelines are owned and operated by independent oil companies including Tesoro Logistic Operations, successor to BP Pipelines, the previous pipeline operator.

Benzene and other volatile organic compounds (VOCs) found in gasoline were detected in soil vapor samples collected near the eastern edge of the Project Site. Benzene is a known carcinogen. Soil vapor (also called soil gas) refers to the air below ground that surrounds soil particles. The source of the benzene is believed to be a leak from one or more of the pipelines beneath Golden Avenue adjacent to the Project Site. A soil vapor extraction system (SVE) that pumps air out of the ground and conveys it to a treatment system was installed in 2012 and initially operated by Oil Operators. Cleanup orders were issued by the LARWQCB to multiple oil companies, including BP Pipelines in 2012 and Tesoro Logistic Operations LLC (successor to BP Pipelines) assumed responsibility for the vapor extraction and related remedial work required under the order. This led to the development, approval, and the implementation of the Tesoro Expanded Remedial Action Plan for additional SVE wells in 2017 and the plan was further amended in 2018. The Plan involves the installation of twelve horizontal SVE wells and four angled SVE wells to extend beneath Golden Avenue from the east side of the Project Site and five vertical SVE wells beneath the Project Site.2

Methane has also been detected in soil gas at the Project Site in levels exceeding regulatory thresholds. Methane is a combustible gas that is a byproduct of the bioremediation or natural degradation of petroleum-impacted soil. Methane is commonly found in oil-producing regions. Methane at the Project Site will be addressed through a vapor mitigation system incorporated into the building foundation plans for the Project.

Remedial Action Plan

In August 2021, a Remedial Action Plan (RAP) was prepared by California Environmental for the Project Site and submitted to the LARWQCB for review and approval (see Appendix IV.H.4). The RAP identifies

additional actions to address the remaining soil and groundwater contamination present on the Project Site and to achieve risk-based cleanup goals approved by LARWQCB that will assure the site is safe for residential land use. Implementation of the RAP will lead to the issuance of a No Further Action determination by the LARWQCB, the lead enforcement agency. The RAP includes a plan of implementation and specific standards to determine the effectiveness of the remediation program.

The RAP was developed using the data collected from the extensive soil, soil vapor, and groundwater assessment investigations conducted by the OOI site from 1984 through 2018. The type and extent of the soil and groundwater contamination on the property was characterized and delineated. The RAP includes the following proposed remedial activities:

(1) **South of Baker**: This area of the Project Site is proposed for residences and the remedial approach will attain the risk-based concentrations established as cleanup levels (RBCs) for residential use developed in the Mearns HHRA. Soil impacted with petroleum hydrocarbons (e.g. diesel, oil, gasoline) will be bioremediated to achieve the cleanup levels. Soil that cannot feasibly be bioremediated within the timeframe of the Project will be excavated and transported to a disposal or recycling facility licensed to accept the soil. Soil containing lead and arsenic in levels that exceed the RBCs will be excavated and transported to a disposal or recycling facility licensed to accept the soil. To address VOCs in soil vapor, engineered vapor mitigation systems approved by LARWQCB will be installed as an element of the foundation systems beneath homes or other occupied structures.

(2) **North of Baker**: This area is proposed for open space, so the remedial approach is consistent with that future use. Soil in the top ten feet containing COCs that exceed the RBCs will be bioremediated or excavated and transported to a disposal or recycling facility licensed to accept the soil. Containment of remaining contaminants will be achieved with an engineered cap. Bioventing wells will be installed to address deeper soil impacted by petroleum hydrocarbon contamination.

The remedial measures proposed in the RAP are presented in Table IV.H-1: Proposed COC Mitigation Measures.
### Table IV.H-1

**Proposed COC Mitigation Measures**

<table>
<thead>
<tr>
<th>COC</th>
<th>Location</th>
<th>Proposed Mitigation Measure</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Vapor Phase</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Methane</td>
<td>NoB</td>
<td>Engineered Cap</td>
</tr>
<tr>
<td></td>
<td>SoB</td>
<td>Engineering control – vapor intrusion membrane – residential/ VES implemented by Tesoro</td>
</tr>
<tr>
<td>TPH-g/VOCs</td>
<td>NoB</td>
<td>None (no structures)</td>
</tr>
<tr>
<td></td>
<td>SoB</td>
<td>Engineering control - passive, membrane – residential/ VES implemented by Tesoro</td>
</tr>
<tr>
<td><strong>Soil</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TPH</td>
<td>NoB</td>
<td>Engineered Cap</td>
</tr>
<tr>
<td>Lead</td>
<td></td>
<td>Engineered Cap</td>
</tr>
<tr>
<td>Arsenic</td>
<td>NoB</td>
<td>Engineered Cap</td>
</tr>
<tr>
<td>TPH</td>
<td>SoB</td>
<td>Bioremediated to RBCs or dispose off site</td>
</tr>
<tr>
<td>Lead</td>
<td>SoB</td>
<td>Remove and dispose &gt; RBC within the REI</td>
</tr>
<tr>
<td>Arsenic</td>
<td>SoB</td>
<td>Remove and dispose &gt; RBC within the REI</td>
</tr>
<tr>
<td><strong>Groundwater</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TPH-g/VOCs</td>
<td>NoB &amp; SoB</td>
<td>RP for pipeline release to implement clean-up as required by LARWQCB</td>
</tr>
<tr>
<td>Arsenic</td>
<td>SoB</td>
<td>Remediation not required - Monitor</td>
</tr>
</tbody>
</table>


*Note: NoB= North of Baker Street, SoB= South of Baker Street, RBC= Risk-Based Concentrations*

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**Interim Remedial Action Plan**

Teso has conducted interim remedial action in the form of soil vapor extraction (SVE) system since 2015, in accordance with the approved September 30, 2014 IRAP. An Expanded IRAP was required by the directive from the LARWQCB dated April 8, 2016, and a Revised Expanded IRAP was required in a follow up letter dated February 7, 2018. A Revised Expanded IRAP was prepared and submitted to LARWQCB on October 31, 2018 and conditionally approved in a letter dated December 27, 2018. The date for submittal of the IRAP documenting the installation and startup of the expanded SVE system was extended in letters from the LARWQCB dated August 2, 2019 and January 24, 2020.

Per the LARWQCB December 27, 2018 approval letter, the IRAP was required to include, at a minimum, the following:

1. Scaled maps showing the locations of the soil borings, vapor extraction wells, treatment compound, and remediation piping;
2. Data tables showing any collected analytical test results;
3. Laboratory reports, chain-of-custody documentation, and QA/QC data;
4. Soil boring logs;
5. Vapor extraction well construction details;
6. Copies of all necessary permits from appropriate agencies; and
7. Conclusions and recommendations

On March 31, 2020, an expanded IRAP prepared by AECOM was submitted to LARWQCB by Tesoro to further remediate the area contaminated from off-site sources near the Project Site. Specifically, this is the area identified as “the SVE Area” in Figure IV.H.2: SVE Area, where OOI, and later Tesoro, operated a SVE system. The objective of the expanded interim remedial action is to mitigate impacts in the vadose zone, particularly where concentrations of benzene in soil and soil vapor are the highest. This expanded IRAP fulfills the LARWQCB outlined requirements in the approval letter dated December 27, 2018.

A human health risk assessment conducted in 2016 at the Project Site identified no vapor intrusion health risks from subsurface impacts at the Project Site, including in the SVE Area (See Appendix IV.H.1). Soil vapor from each extraction well will be monitored to evaluate and optimize system performance in accordance with the Revised Expanded IRAP. Monitoring Reports will be submitted to the LARWQCB on a quarterly basis in accordance with requirements defined by the LARWQCB for submittal on July 31, October 31, January 31, and April 30.

**Soils and Soil Vapor**

Soil vapor investigations conducted at the Project Site from 2012 to 2015 were summarized in quarterly monitoring reports and documented the presence of methane, volatile organic compounds and total petroleum hydrocarbons in the gasoline and light hydrocarbon range (TPH-g). The on-site VOCs in the soil vapor are related to the Tesoro pipeline leaks.

The presence of methane on the Project Site is a result of the active TPH bioremediation cells on-site along with the biologic breakdown of the TPH in the upper portions of the soil. Elevated concentrations of methane exist in the eastern, central and southern portions of the Project Site. The highest methane concentrations were detected beneath Basins 1 and 2 on the Project Site. These locations are within the active bioremediation zone where pockets of elevated methane are expected as a byproduct of the bioremediation process. Methane gas concentrations have typically been lower outside of the bioremediation areas. The highest TPH concentrations exist adjacent to historical pipeline leaks.

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3 Vadose zone refers to the unsaturated zone. The vadose zone extends from the top of the ground surface to the water table.
The RAP identified the Soil Clean-Up Goals listed below (see Appendix IV.H.1) as being levels that present no significant risk to human health. Thus, achieving these maximum contaminant levels, as required by the LARWQCB, assures that the Project Site is safe for future residents. TPH in soil based upon carbon range (upper 0-10 ft):

- C4-C12 < 100 mg/Kg
- C13-C22 < 260 mg/Kg upper 5 ft; 1,000 mg/Kg 5-10 ft
- C23-C32 < 5,000 mg/Kg
- C32-C40 < 6,500 mg/Kg
- Lead in soil ≤ 80 mg/Kg (upper 10 ft)

**Arsenic in soil ≤ 10 mg/Kg (upper 5 ft; 12 mg/Kg 5-10 ft) Groundwater**

Groundwater beneath the eastern portion of the Project Site is impacted with TPH-g and VOCs that migrated onto the Site from off-site pipeline releases as illustrated in Figure IV.H-5: TPH in Groundwater and Figure IV.H-6: Benzene in Groundwater below. Accumulations of gasoline products from Tesoro were found in groundwater on the Project Site during monitoring from 2013 to 2019. Arsenic is present in groundwater at concentrations up to 0.711 mg/L, which is more than the maximum contaminant level (MCL) of 0.01 mg/L. The MCL is the drinking water standard. Figure IV.H-7: Arsenic in Groundwater shows the concentration contour of arsenic within the groundwater on-site. The concentrations of arsenic found in groundwater on the Project Site are correlated with the presence of TPH in the groundwater. No COCs were identified in the groundwater in the most recent quarterly groundwater monitoring; as such, this indicates that that the existing COCs on the Project Site, such as TPH and lead, are not impacting the groundwater quality beneath the Site.
FIGURE IV.H-4

EXPLANATION

AREA OF PROPOSED SURFACE CUP

SOURCE: California Environmental - 2019 276-001-20

FIGURE IV.H-4

Lead and Arsenic in Soil

SOURCE: California Environmental - 2019

276-001-20

Meridian Consultant
3. REGULATORY SETTING

There are several federal, State, regional, and local regulations that govern the generation, handling, use, storage, and disposal of hazards and hazardous materials. These regulations are complex and have varying degrees of overlap. They address a myriad of aspects associated with hazards and hazardous waste, including: (1) the use, storage, and management of hazardous materials; (2) the generation, handling, and disposal of hazardous waste; (3) underground storage tanks; (4) aboveground storage tanks; (5) asbestos; (6) lead-based paint; (7) polychlorinated biphenyls; (8) oil wells; and (9) oil field-related activities and methane gas. Each of these categories and relevant regulations governing them are discussed below.

Hazardous Materials Use, Storage, and Management

Emergency Response and Community Right-to-Know Act

In 1986, Congress adopted the Emergency Planning and Community Right-to-Know Act (42 U.S. Code Sections 11001–11050) as Title III of the federal Superfund Amendments and Reauthorization Act. This Act establishes reporting and planning requirements for businesses that handle or store specified hazardous materials. These reports and plans provide federal, State, and local emergency planning and response agencies with information about the amounts of potentially hazardous materials that businesses use, release, and/or spill. They also provide the public with information about potential hazards in their communities. In California, many of the requirements of the Emergency Planning and Community Right-to-Know Act overlap with regulations adopted under the State’s Waters Bill and La Follette Bill, both of which are discussed below. The Emergency Planning and Community Right-to-Know Act consists of four separate programs that include requirements for planning for emergency response; requirements for reporting leaks and spills; requirements for reporting hazardous materials inventories; and annual reporting of total releases of specified “toxic chemicals.”

Waters Bill

Businesses in California that handle hazardous materials are required to comply with California’s Hazardous Materials Release Response Plans and Inventory Law (Assembly Bill [AB] 2185; Health and Safety Code Section 25500 et seq.), also known as the Waters Bill. Basic requirements of hazardous materials planning under this legislation include the development of detailed inventories of the hazardous materials used and stored on-site, a program of employee training for hazardous materials release response, and the identification of emergency contacts and response procedures. Any facility that meets minimum thresholds for established categories of waste must comply with the reporting requirements and file a business emergency plan with the local administering agency. The local administering agency within the Project area is the LBFD. The LBFD refers to the required business emergency plan as a Hazardous Materials Business Emergency Plan. The Hazardous Materials Business Emergency Plan must
include a complete inventory of all hazardous materials used and stored at a site in quantities above the associated thresholds and a program of employee training for hazardous materials releases.

**Unified Hazardous Waste and Hazardous Materials Management Regulatory Program**

In 1994, Senate Bill (SB) 1082 established the Unified Hazardous Waste and Hazardous Materials Management Regulatory Program. The Long Beach Certified Unified Program Agency (CUPA) is designed to consolidate and administer hazardous material permits, inspections, and enforcement activities throughout the City's jurisdiction. Oversight of the Long Beach CUPA is shared by the LBFD and the Long Beach Health Department.4

The Unified Hazardous Waste and Hazardous Materials Management Regulatory Program consolidates and coordinates the six State programs that regulate business and industry use, storage, handling, and disposal of hazardous materials and hazardous wastes. The CUPA requirements include submittal of the following: Business Information Form; Hazardous Materials System BP-8 Computer Listing of Inventory Submitted; Annual Inventory Update Form; and Regulated Substance Registration Form.

**La Follette Bill**

The La Follette Bill (AB 3777; Health and Safety Code Sections 25531 et seq.) requires risk planning and accident prevention provisions for facilities that use or store Acutely Hazardous Materials. Acutely Hazardous Materials (known as Extremely Hazardous Substances under the Emergency Planning and Community Right-to-Know Act) are defined as any chemical designated as an extremely hazardous substance in the Code of Federal Regulations, Title 40, Part 355 (40 Code of Federal Regulations 355), Appendix A. Under the La Follette Bill, facilities that store or utilize certain types and quantities of hazardous materials at or above the thresholds defined by the bill may be required to develop Risk Management Plans. Risk Management Plans require management, engineering, and safety studies, as well as the construction of physical improvements, if warranted, designed to minimize the potential for hazardous materials accidents and, if an accident does occur, to minimize the impacts of such an event. Risk Management Plans are process-specific rather than project-specific. As such, they focus on the use of hazardous materials in various operations. Quantity thresholds as defined under the bill vary for different hazardous constituents. The La Follette Bill requires that Risk Management Plans be updated every three years for continuing operations or whenever the process changes to the extent that the current Risk Management Plan does not reflect the revised process.

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The State Office of Emergency Services has delegated authority to local agencies to administer the Waters and La Follette Bills. In the City of Long Beach (City), the LBFD issues permits for hazardous materials handling (in accordance with the La Follette Bill), enforces AB 2185 (per the Waters Bill), and administers the applicable sections of the Long Beach Fire Code, including Chapter 8.86 (Hazardous Materials Release Response Plans and Inventory). As the administering agency, the City of Long Beach requires that Risk Management Plans be filed with the Long Beach Division of Environmental Health and with the LBFD. The LBFD administers the requirements of these bills through a combination of Fire Department inspections, plan checks, disclosure requirements associated with Hazardous Materials Business Plans, and requirements for the preparation and filing of Risk Management Plans. Any business handling hazardous materials (as defined in Section 25500 of California Health and Safety Code, Division 20, Chapter 6.95) is required to obtain a local fire department permit and register the business as a hazardous materials handler.

**Federal and California Occupational Safety and Health Acts**

The federal Occupational Safety and Health Act of 1970, as amended, which is implemented by the Occupational Safety and Health Administration (OSHA) (29 United States Code, Sections 651–678) also contains provisions with respect to hazardous materials management. Federal Occupational Safety and Health Act requirements, set forth in 29 Code of Federal Regulations Section 1910 et seq., are designed to promote worker safety, worker training, and worker right-to-know policies. A major component of the federal regulations is the requirement that employers implement the Occupational Safety and Health Act Hazard Communication Standard to provide information to employees about the existence and potential risks of exposures to hazardous substances in the workplace. As part of the Hazard Communication Standard, employers must obtain material safety data sheets from chemical manufacturers that identify the types and handling requirements used in given areas and make this data available to their employees; label chemical containers in the workplace; develop and maintain a written hazard communication program; and develop and implement programs to train employees about hazardous materials. Employers are also required to train a team of employees to appropriate federal Occupational Safety and Health Act-defined levels, to respond to accidental releases of hazardous materials, and, as appropriate, to retain on-call contractors to perform hazardous materials accidental release responses (per 29 Code of Federal Regulations 1910.120, Hazardous Waste Operations and Emergency Response Standards).

Since the State of California has a State plan with provisions at least as stringent as those required by the federal OSHA, the United States Department of Labor has delegated the authority to administer the Occupational Safety and Health Act regulations to the State. The California Occupational Safety and Health Act program (codified in California Code of Regulations, Title 8, and in the Labor Code Sections 6300–6719)
is administered and enforced by the Division of Occupational Safety and Health (DOSH, but better known as Cal/OSHA), a unit of California’s Department of Industrial Relations.

The State Act is similar to the federal program, but in addition to the provisions identified above, it requires employers to implement a comprehensive, written Injury and Illness Prevention Program. This employee safety program covers the full range of potential workplace hazards, including those associated with hazardous materials.

**Uniform Fire Code**

The Uniform Fire Code regulates the types, configuration, and quantities of hazardous materials that can be stored within structures. The Uniform Fire Code also regulates the storage of hazardous materials (e.g., storage tanks) in outdoor areas. These regulations are implemented by the LBFD through regular inspections of on-site operations and through issuance of notices of violation in cases where storage facilities do not meet code requirements. In addition to regulations governing hazardous materials handling, there are reporting requirements associated with a hazardous materials release. These reporting provisions require, in some instances, notification of the local CUPA, the State Office of Emergency Services, and National Response Center, if warranted.

**City of Long Beach Municipal Code**

Title 8, Health and Safety, of the Long Beach Municipal Code (LBMC) addresses codes and measures regarding hazardous materials. Chapter 8.85 (Underground and Aboveground Storage Tanks) designates the City to prevent injury or damage to businesses or property due to air pollution. Chapter 8.86 (Hazardous Materials Release Responses Plans and Inventory) designates the Long Beach CUPA as the local authority for underground and aboveground storage tank compliance. Chapter 8.87 (Hazardous Waste Control) designates the Long Beach CUPA as the local authority to enforce California Health and Safety Code Division 20, Chapter 6.5. Chapter 8.88 (Hazardous Materials Clean-Up) requires site characterization, site remediation, and initial and final reports for contaminated sites in accordance with State and local laws and regulations.

**City of Long Beach General Plan Public Safety Element**

The City’s General Plan Public Safety Element was adopted in May 1975 and includes policy guidelines related to the City’s safety goals, fire protection, geologic hazards, crime prevention, utilities, industrial/transportation, disaster operations, and risk management, and also includes program and ordinance recommendations. The fire protection section of the Public Safety Element presents established fire demand zones determined on the basis of hazards, station locations, manpower, and equipment. Specific fire hazardous land uses are delineated, and fire protection measures are recommended. Through
the City’s Department of Emergency Preparedness, elaborate provisions for disaster operations have been established where manpower, communications, evacuation, community resources, and safety for citizens are discussed and reviewed. The Risk Management section of the Public Safety Element discusses factors related to risk management and the process of establishing levels of acceptable risk regarding a variety of potential hazards, including oil storage tanks and tank rupture. The Public Safety Element is a planning document that primarily addresses hazards that could affect large segments of the population and does not include specific regulatory requirements.

Hazardous Waste Generation, Handling, and Disposal

Federal Resource Conservation and Recovery Act and California Hazardous Waste Control Law

The federal Resource Conservation and Recovery Act (RCRA) (42 United States Code Sections 6901–6992k) regulates the generation, transportation, treatment, storage, and disposal of hazardous waste. Under RCRA regulations, hazardous wastes must be tracked from the time of generation to the point of disposal. The RCRA program also establishes standards for hazardous waste treatment, storage, and disposal units, which are intended to manage hazardous wastes in a manner that minimizes present and future threats to the environment and human health. At a minimum, each generator of hazardous waste must register and obtain a hazardous waste activity identification number. If hazardous wastes are stored for more than 90 days or treated or disposed of at a facility, any treatment, storage, or disposal unit must be permitted under RCRA.

RCRA classifies users that generate greater than 1,000 kilograms (approximately 2,205 pounds) per month of non-acutely hazardous waste as “large quantity generators.” Large quantity generators are subject to the life cycle hazardous waste management requirements of RCRA. RCRA requires large quantity generators to maintain inspection logs of hazardous storage locations, records of the quantity of hazardous waste being generated and stored on-site, manifests of pick-ups of these wastes from the Site by licensed hazardous waste transporters, and records from the licensed treatment/storage/disposal facilities which receive and ultimately treat or dispose of the waste.

RCRA allows individual states to develop their own programs for the regulation of hazardous waste as long as they are at least as stringent as the federal act. The State of California has developed the California Hazardous Waste Control Law (Health and Safety Code Section 25100 et seq.; 22 California Code of Regulations Section 66260.1 et seq.), which is modeled closely after RCRA. However, unlike RCRA, the Hazardous Waste Control Law does not recognize a threshold below which generators are exempt from some or all of the Hazardous Waste Control Law requirements.
The United States Environmental Protection Agency (USEPA) has delegated Statewide RCRA enforcement to the State of California. Primary authority for the Statewide administration and enforcement of Hazardous Waste Control Law rests with the California Environmental Protection Agency’s (CalEPA) Department of Toxic Substances Control (DTSC). The DTSC has delegated to local agencies the authority to inspect and regulate hazardous waste generators. As previously indicated, the LBFD is a CUPA under the Unified Program, as described above.

Both RCRA and the Hazardous Waste Control Law require businesses to prepare biennial hazardous waste reports that identify the nature and quantity of each type of hazardous waste generated and the treatment, disposal method, and facilities used for each waste (40 Code of Federal Regulations 262.41(a) and 22 California Code of Regulations 66262.41). These reports must be submitted to the DTSC.

**Federal and California Occupational Safety and Health Acts**

The federal OSHA and Cal/OSHA regulations also contain worker safety provisions with respect to routine hazardous waste management operations and emergency responses involving hazardous wastes. The provisions are included in the Hazardous Waste Operations and Emergency Response Standard (29 United States Code 651 et seq.; 29 Code of Federal Regulations 1910.120; 40 Code of Federal Regulations 311), which requires a written health and safety program, worker training, emergency response training, medical surveillance, and measures to reduce worker exposure to hazardous waste.

**Hazardous Materials Transportation Act**

The Hazardous Materials Transportation Act regulates transport of hazardous materials on water, rail, highways, airplanes, and pipelines. The U.S. Department of Transportation (DOT) administers the Act. Title 49 of the CFR specifies additional requirements and regulations with respect to the transport of hazardous materials. Title 49 of the CFR requires that every employee who transports hazardous materials receive training to recognize and identify hazardous materials and become familiar with hazardous materials requirements. Drivers are also required to be trained in function and commodity specific requirements. In addition, vehicles transporting certain types or quantities of hazardous materials must display placards (warning) signs. Transporters of hazardous wastes must be permitted and have an identification number.

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5 49 USC Section 1801 et seq., (1975).
6 49 CFR Section 100 et seq., (2016).
Uniform Fire Code

The Uniform Fire Code regulates hazardous waste storage facilities through regular site inspections by the LBFD and through the issuance of notices of violations and subsequent code enforcement in cases where storage facilities do not meet code requirements.

Underground Storage Tanks

Resource Conservation and Recovery Act, Subtitle I

In 1984, Congress adopted a national underground storage tank (UST) regulatory program (42 United States Code 6991 et seq.), commonly referred to as RCRA Subtitle I. Regulations implementing this program are found at 40 Code of Federal Regulations 280. Subtitle I authorized the USEPA to issue regulations establishing minimum standards for new and existing (those installed after December 22, 1988) USTs. The program outlines strict standards for upgrading existing USTs and associated piping; installing new USTs; corrosion protection for USTs and associated piping; spill and overfill protection; leak detection, reporting of releases, and corrective actions; on-site practices and record keeping; UST closure standards; and financial responsibility requirements for owner and operators of USTs. After 1998, all nonconforming tanks were required to be upgraded or closed.

California Code of Regulations and California Health and Safety Code

Prior to the adoption of the federal UST regulatory program, in 1983 the State of California initiated its own regulation of USTs storing hazardous substances. California Health and Safety Code, Division 20, Chapter 6.7, governs the UST program, and the California Code of Regulations Title 23, Division 3, Chapter 16 and Chapter 18 regulates the program. The State’s UST program regulates various elements including registration of USTs; permitting of USTs; establishment of UST construction and operational standards; installation of leak detection systems and/or monitoring of USTs for leakage; establishment of UST closure requirements; licensing of UST contractors; establishment of financial responsibility requirements; release reporting and corrective action; and enforcement.

The State’s UST program has been amended frequently to incorporate the federal requirements. As with the federal standards, the State’s UST program required that all tanks have leak detection, corrosion protection, and spill and overflow devices by December 1998. USTs that did not meet the 1998 requirements were required to be immediately retrofitted or removed.

The State Water Resources Control Board (SWRCB) oversees the Statewide UST program (23 California Code of Regulations Section 2610 et seq.). The administration of the UST regulatory and permit program is performed by local agencies. In the City of Long Beach, the administration of the UST program is under the jurisdiction of the LBFD. The responsibility for oversight of leaking USTs (LUSTs) typically lies with the
LARWQCB if the release poses a threat to groundwater. The City’s UST regulations are contained in LBMC Chapter 18.48, also known as the Long Beach Fire Code.

**Aboveground Storage Tanks**

In 1989, California established the Aboveground Petroleum Storage Act instituting a regulatory program covering ASTs containing specified petroleum products (Health and Safety Code Sections 25270–25270.13). The Aboveground Petroleum Storage Act applies to facilities that have a storage capacity of 10,000 gallons or more or are subject to oil pollution prevention and response requirements under 40 Code of Federal Regulations Part 112 of the Clean Water Act. Oil pollution prevention requirements must be met if the facility has a cumulative aboveground oil storage capacity of 1,320 gallons or more and may reasonably be expected to discharge oil in harmful quantities into navigable waters. DTSC regulations may apply if ASTs contain hazardous waste and are stored longer than 90, 180, or 270 days (depending on other criteria).

Under the Aboveground Petroleum Storage Act, each owner or operator of a regulated AST facility must file biennially a storage statement with the SWRCB disclosing the name and address of the AST facility; the contact person for the facility; and the location, size, age, and contents of each AST that exceeds 10,000 gallons in capacity and that holds materials that are at least five percent petroleum. In addition, each owner or operator of a regulated AST must prepare a Spill Prevention Control and Countermeasure Plan in accordance with federal and State requirements (40 Code of Federal Regulations 112 and Health and Safety Code Section 25270.5[c]). The intent of this plan is to minimize the potential for accidental release of oil or petroleum products into or upon the navigable waters of the United States or adjoining shoreline. Compliance is required for facilities that have a total aboveground oil storage capacity in excess of 1,320 gallons or a total UST oil storage capacity in excess of 42,000 gallons (unless the USTs are subject to all the technical requirements of 40 Code of Federal Regulations 280 or a State program approved under requirements of 40 Code of Federal Regulations 281).

Groundwater monitoring also may be required if the tank exterior surface, connecting piping, and the floor directly beneath the tank cannot all be monitored by direct viewing. Notification to the State Office of Emergency Services is required immediately upon discovery of any spill or release of 42 gallons or more of petroleum (per Health and Safety Code Section 25270.8). Currently, the responsibility for inspecting ASTs and ensuring that Spill Prevention Control and Countermeasure Plans have been prepared lies with the local agency authorized by CalEPA as the Certified Unified Program Agency (CUPA), which in this case is the Long Beach Fire Department and Department of Health and Human Services.
Asbestos

Toxic Substances Control Act

In 1976, the federal Toxic Substances Control Act (TSCA) (15 United States Code Sections 2601–2671) established as evaluation system to identify chemicals that may pose hazards. TSCA also established a process by which public exposure to hazards may be reduced through manufacturing, distribution, use, and disposal restrictions or labeling of products. Under TSCA, the USEPA has enacted strict requirements on the use, handling, and disposal of asbestos-containing materials (ACMs). These regulations include the phasing out of friable asbestos and ACMs in new construction materials beginning in 1979 (per 40 Code of Federal Regulations 763). In addition, due to potential adverse health effects in exposed persons, in 1989 the USEPA banned most uses of asbestos in the country. Although most of the ban was overturned in 1991, the current banned product categories include corrugated paper, roll board, commercial paper, specialty paper, flooring felt, and any new uses. TSCA is enforced by the USEPA through inspections of places in which ACMs are manufactured, processed, and stored and through the assessment of administrative and civil penalties and fines, as well as injunctions against violators.

Federal Resource Conservation and Recovery Act and State Hazardous Waste Control Law

Under the federal RCRA, asbestos is not regulated as hazardous waste, but under the State Hazardous Waste Control Law, it is considered a “non-Resource Conservation and Recovery Act” or “California-only” hazardous waste. The DTSC classifies ACMs as hazardous waste if they are friable and contain 1 percent or more asbestos (California Code of Regulations, Title 22, Section 66261.24). Nonfriable bulk asbestos-containing waste is considered by the DTSC as nonhazardous regardless of its asbestos content, so it is not subject to regulation under California Code of Regulations, Title 22, Division 4.5. The DTSC regulates the packaging, on-site accumulation, transportation (through standards applicable to transporters of hazardous waste), and disposal of asbestos when it is considered a hazardous waste.

Federal and California Occupational Safety and Health Acts

The federal and State OSHA regulate asbestos as it relates to employee safety through a set of general notification requirements and corrective actions to reduce potential exposure levels. The federal OSHA Worker Exposure Rule for Asbestos (29 Code of Federal Regulations 1910.1001 and 1926.1101) requires certain actions on the part of any employer whose employees are potentially exposed to asbestos fiber levels above the permissible exposure limit (0.2 fiber per cubic centimeter of air, averaged over an 8-hour day). These actions include corrective measures to reduce exposure levels; notification of employees

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7 Friable asbestos is asbestos that when dry can be crumbled, pulverized, or reduced to powder by hand pressure.
(including warning signs and labels); controlled access; use of protective equipment; implementation of engineering and housekeeping controls; and employee training programs.

OSHA has established an action level for workplace exposure as well. If an employee could be exposed above the action level, employers must begin compliance activities such as notification, employee training, air monitoring and, in some cases, medical surveillance. In buildings that contain ACMs at levels below OSHA exposure standards, the USEPA still recommends that building owners inform building occupants of the presence and location of ACMs. In addition to these regulations, contractors involved in asbestos surveys and removal are required to be certified by OSHA.

**Connelly Act**

The Connelly Act (AB 3713; Health and Safety Code Section 25915 et seq.) establishes notification requirements for all owners and employees working within any pre-1979 building known to contain ACMs. The notification requirements of the Connelly Act are enforced by Cal/OSHA. There are no buildings on the Project Site.

**National Emission Standards for Hazardous Air Pollutants**

The USEPA has established National Emission Standards for Hazardous Air Pollutants (NESHAP) (40 Code of Federal Regulations 61 Part M) that govern the use, removal, and disposal of ACMs as a hazardous air pollutant. NESHAP regulations concern the manufacture, spraying, and fabricating of ACMs, as well as its application, removal, and disposal. NESHAP regulations mandate the removal of friable ACMs before a building is demolished and include notification requirements prior to demolition. The regulations also mandate removal techniques, limit visible emissions of dust to the outside air during removal or renovation, specify disposal procedures, and include provisions governing the packaging and labeling of asbestos wastes. NESHAP regulations are promulgated and enforced by the USEPA. Responsibility for implementing these requirements has been delegated to the State of California, which in turn has delegated the responsibility to the South Coast Air Quality Management District (SCAQMD). The SCAQMD implements NESHAP through its Rule 1403, discussed below.

**South Coast Air Quality Management District Rule 1403**

SCAQMD Rule 1403, Asbestos Emissions from Renovation/Demolition Activities, regulates asbestos as a toxic material and controls the emissions of asbestos from demolition and renovation activities by specifying agency notifications, appropriate removal procedures, and handling and clean up procedures. Rule 1403 applies to owners and operators involved in the demolition or renovation of structures with ACMs, asbestos storage facilities, and waste disposal sites. Pursuant to Rule 1403, owners and operators are required to survey structures for ACMs; notify the appropriate agencies of the intent to remove asbestos; follow applicable removal procedures and time schedules; adhere to handling, clean-up, storage, and disposal requirements; and maintain proper records regarding the removal of asbestos. There are no
buildings on the Project Site, but there are underground pipes that may contain asbestos, as described later in this chapter.

**Polychlorinated Biphenyls**

Polychlorinated biphenyls (PCBs) can be found in older transformers and other electrical equipment. Due to their hazardous properties, all aspects of PCBs are strictly regulated by the USEPA under TSCA. These regulations ban the manufacture of PCBs, although the continued use of existing PCB-containing equipment is allowed. Transformer oil containing PCBs at a concentration exceeding five parts per million is the California-regulated concentration for hazardous waste, though PCBs in transformer oil at a concentration up to 50 parts per million are currently allowed in transformers in California. TSCA contains provisions controlling the continued use and disposal of existing PCB-containing equipment, as well as the disposal of hazardous waste building materials, and includes life cycle provisions similar to those in RCRA. In addition to TSCA, provisions relating to PCBs are contained in the California Hazardous Waste Control Law, which lists PCBs as hazardous waste. There are no known PCBs on the Project Site.

**Oil Wells and Methane Gas**

In compliance with California Public Resources Code Section 3229, Division 3, before commencing any work to abandon any well, the owner or operator shall file with the California State Division of Oil, Gas and Geothermal Resources (DOGGR) a written notice of intention to abandon the well (DOGGR Form OG108). There are no known oil wells on the Project Site.

4. **ENVIRONMENTAL IMPACTS**

**Thresholds of Significance**

In order to assist in determining whether a project would have a significant effect on the environment, the City finds a project may be deemed to have a significant impact to hazards and hazardous materials, if it would:

- **Threshold IV. HAZ-1:** Create a significant hazard to the public or the environment through the routine transport, storage, production, use, or disposal of hazardous materials?

- **Threshold IV. HAZ-2:** Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials or waste into the environment?

- **Threshold IV. HAZ-3:** Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code § 65962.5 and, as a result, would it create a significant hazard to the public or the environment?
As discussed in the IS (Appendix I.1), criteria (9-c), (9-e), (9-f) and (9-g), would result in no impact or a less than significant impact and therefore are not included in the analysis below.

5. METHODOLOGY

Analysis in this section is focused on the use or management of hazardous or potentially hazardous materials resulting from the construction and occupancy and use of the proposed residential units. The severity of potential hazards to people, property, and the environment associated with the heightened interaction with hazardous materials associated with implementation of the proposed Project is also analyzed. This analysis is based on review of information from the Expanded IRAP (see Appendix IV.H.1), the RAP Review (see Appendix IV.H.2), a Hazards Document Review (see Appendix IV.H.3) and the RAP (see Appendix IV.H.4) for the Project Site to assess the potential presence of hazardous materials and contamination sources.

Additionally, this section addresses short-term construction impacts resulting from work in the vicinity of pipelines, work in areas with previously documented soil contamination, and other subsurface construction activities, as well as potential impacts associated with the type of uses proposed. In determining the level of significance, the analysis recognizes that all components of the proposed Project would be required to comply with relevant federal and State laws and regulations that are designed to ensure the safety of routine transport, use, management, or disposal of hazardous materials.

6. PROJECT IMPACTS

Threshold IV. HAZ-1: Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.

The proposed Project would involve site clearing; bioremediation of soils and subsurface materials; demolition of previous facility remnants; construction of new residential buildings; and the installation of open space, utilities, and landscapes. These activities may require the transport of contaminated soil and the use of hazardous substances during construction.

Construction

Construction activities are anticipated to involve the use of typical materials that are potentially hazardous, including vehicle fuels, paints, mastics, solvents, and other acidic or alkaline solutions that would require special handling, transport, and disposal. Additionally, the demolition and removal of facility remnants such as foundations, roads and underground pipes within the Project Site could potentially result in the exposure of hazardous materials such as ACMs and other potentially hazardous materials.
The Phase I Environmental Site Assessment identified the presence of underground piping that may contain asbestos. No other potentially hazardous building materials were identified in remnants of concrete and roads. The pipe will be sampled prior to earthwork activities by a licensed asbestos consultant in accordance with applicable regulations. If any asbestos is confirmed to be present in the piping, the piping will be transported by a licensed hauler in compliance with applicable regulations to a facility licensed to accept asbestos-containing waste material. Any other debris encountered or generated during removal of concrete, roads or other remnants that is suspected to contain hazardous material would be evaluated by a qualified environmental consultant and, if confirmed to contain hazardous material, would be transported in accordance with applicable local, State, and federal regulations to a facility licensed to accept the waste. These measures ensure that no hazardous materials in debris remain on the Project Site after the earthwork activities are completed. Through compliance with applicable local, State and federal regulations, the proposed Project impacts related to the routine transport, use, or disposal of hazardous materials during building demolition would be less than significant.

All materials used during construction would be used and stored in compliance with applicable federal, State, and local regulations. As the use and transport of regulated materials would be limited, in terms of volume and duration, these materials are not considered a significant hazard to the public or environment. The quantity of potential hazardous substances used during construction is very limited and require no special permitting. Additionally, the LBFD would have the authority to perform inspections and enforce federal and State laws governing the storage, use, transport, and disposal of any regulated materials and wastes.

Furthermore, any unexpected spills or leakages (for example, fuel from a vehicle) that occurs during construction would be required to be remediated in accordance with the State and local regulations for hazardous waste cleanup. Specifically, the construction site would be subject to the regulations in Title 8 of the California Code of Regulations (T8 CCR) that governs workplace safety and which address the handling of hazardous materials in a workplace environment. Additionally, the potential for construction materials to cause contamination off site during storm events would be reduced through the implementation of a stormwater pollution prevention plan (SWPPP), in accordance with NPDES (refer to Section IV.J: Hydrology and Water Quality).

Bioremediation and other remedial actions described in the RAP approved by the LARWQCB would be completed prior to construction activities. Contaminated soil will either be addressed by bioremediation to levels approved for residential use (RBCs) or off-site disposal of soil exceeding RBCs that cannot be feasibly bioremediated. The parcel north of Baker that is proposed as open space, not residential use, will be addressed through the removal of soil exceeding RBCs in the top ten feet, emplacement of an engineered cap over the area, and bioventing wells to address deeper contamination.
Soil impacted with TPH and metals may be treated on site, before being hauled off-site for disposal to a licensed landfill upon completion of a waste profile and acceptance by the receiving facility, such as Chiquita Canyon landfill in Castaic. The potential for health risk associated with diesel emissions of haul trucks, and other construction equipment, is discussed in Section IV.B: Air Quality. On site treatment would be conducted by mean of a transportable treatment unit (TTU), which is a state of the art computerized, fully automated system consisting of a high-speed screening plant, automated continuous mixing plant with a fully enclosed twin shaft mixing chamber, self-erecting reagent silo, secondary upright reagent silo, office control module, and all required conveyor systems. The TTU would be operated under the oversight of a licensed environmental geologist or engineer. The TTU is permitted by the state’s Department of Toxic Substance Control (DTSC) for use in California. The TTU treats the soluble hazardous waste metals to below hazardous levels. Confirmation sampling of treated soil is used to confirm successful treatment of hazardous soluble heavy metals to non-hazardous concentrations. Waste classification will be conducted in accordance with 22 CCR Division 4.5, Chapter 11, Article 3 and 40 CFR 261 Subpart C. The on-site TPH impacted soil may meet the criteria for use as daily cover. Trucks loaded with soil for disposal will enter the shaker plates to remove excess soil from the tires and under-carriage of the truck. Each truck leaving the Site will carry a completed waste manifest. Trucks will follow the designated hauling route as required by the City of Long Beach (see Appendix IV.H.4). All applicable regulations would be followed to minimize adverse exposure of contaminated soil to the public.

Based on the identification of the existing conditions at the Project Site described previously, as well as the use of regulated substances during construction of the Project, there is the potential for an adverse impact to the environment and other sensitive receptors through the routine transport, use, or disposal of hazardous materials. However, during Project construction, all activities that relate to existing on-site environmental conditions would be subject to applicable local, State, and federal regulations relating to the routine transport, use, and disposal of hazards and hazardous materials which appropriately address all of the environmental conditions that are present at the Project Site. Through required compliance with these regulatory compliance measures, the Project would not result in adverse impacts related to the routine transport, use, and disposal of hazards and hazardous materials during construction and impacts would be less than significant.

**Operation**

Operation and maintenance of the proposed residential Project would not involve the routine transport, use, or disposal of hazardous materials except in de minimis quantities used by households. Further, the types and amounts of materials that would be used in connection with the proposed Project would be typical of those used in residential neighborhoods and neighborhood uses, such as surface and floor cleaning products utilized for routine janitorial cleaning procedures. All potentially hazardous materials to be used during construction and operation of the Project would be contained, stored, and used in
accordance with manufacturers’ instructions and handled in accordance with all applicable standards and regulations, including but not limited to, those set forth by the federal and State Occupational Safety and Health Acts. Any associated risk would be adequately reduced to a less than significant level through implementation and compliance with these existing laws and regulations. Operational impacts through the routine transport, use, or disposal of hazardous materials would be less than significant and no mitigation measure is required.

Threshold IV. HAZ-2: Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.

Construction

Construction of the proposed Project would involve the temporary use of hazardous materials including vehicle fuels, oils, and transmission fluids. Such use which could pose risks to construction workers or lead to environmental contamination, if not properly stored, used, or disposed. However, the materials used would not be in such quantities or stored in such a manner as to pose a significant safety hazard. These activities would also be short term or one time in nature. Project construction workers would be trained in safe handling and hazardous materials use.

Additionally, the use, storage, transport, and disposal of construction-related hazardous materials and waste would be required to conform to existing laws and regulations. These include the Hazardous Material Transportation Act, the Resource Conservation and Recovery Act, the California Hazardous Waste Control Act, CUPA, and the California Accidental Release Prevention Program. As required by law, notification to Underground Service Alert would be made. Prior to construction an attempt to coordinate with the owners/operators of any high priority underground lines within the Project Site would be made in order to avoid damage to high-pressure pipelines and natural gas/petroleum pipelines in the area. Compliance with applicable laws and regulations governing the use, storage, and transportation of hazardous materials would ensure that all potentially hazardous materials are used and handled in an appropriate manner and would minimize the potential for safety impacts to occur. For example, if a spill or leakage of petroleum products occurs during construction activities, it would be immediately contained, the hazardous material identified, and the impacted area would be remediated in compliance with applicable State and local regulations for the cleanup and disposal of that contaminant.

The RAP and the expanded IRAP documented existing pollutants on and beneath the surface of the Project Site and developed appropriate remediation actions to be completed to meet the defined clean-up goals which would be implemented prior to construction, with the oversight and approval of LARWQCB (see Appendix IV.H.1 and Appendix IV.H.4). In addition to removal of the top ten feet of soil, an Engineered Cap will be placed over the portion of the Project Site north of Baker Street to be maintained as open
space. The Engineered Cap would eliminate the exposure pathway of COCs that remain on-site and reduce the likelihood that contaminants remaining on site would affect groundwater quality. Ongoing bioremediation will treat TPH-contaminated soil on the parcel south of Baker Street to thresholds that are acceptable for residential use. Soil containing contaminants that exceed the RBCs that cannot be feasibly bioremediated will be transported to an off-site disposal facility. Treated soils approved for reuse or imported in accordance with the standards in the RAP will be incorporated into Project grading (see Appendix IV.H.4). Verification sampling of all treated and imported soil prior to placement as engineered-compacted fill as required by the RAP will ensure conformance with the approved RBCs for the Project.

The existing on-site bioremediation activities would continue during the initial phases of Project construction pursuant to the current order by the City and the LARWQCB. The LARWQCB will issue Waste Discharge Requirements (WDRs), if needed, for on-site reuse of the treated TPH impacted soil. The bioremediation would be accelerated to achieve the defined RBCs in soil by adding nutrients and/or composting material to enhance microbial degradation. The maximum removal depths for the TPH-contaminated would be dictated by the requirements of the geotechnical engineer, thus could vary slightly from the depths estimated in the RAP.

Following completion of bioremediation, all soil verified as meeting the treatment criteria (RBCs) would be reused as fill soil at the Site. Remediation of VOCs associated with the Tesoro pipeline leaks beneath the eastern portion of the Project Site would continue to be implemented via vapor extraction in accordance with the proposed expanded IRAP with LARWQCB and City oversight until the agencies concur that no further remediation is needed. The potential for vapor intrusion from methane and VOCs beneath the Project Site will be further reduced through the installation of an engineered sub-slab vapor intrusion mitigation system beneath all residential structures. The proposed vapor mitigation plans will be submitted to the City of Long Beach and the LARWQCB for review and approval prior to construction of the proposed residential buildings.

Confirmation sampling is an important component of the RAP to ensure the treated soil and any imported soil meets the Site-specific treatment criteria. The soil sampling requirements would include testing the bioremediated soil, testing of any soil imported to the Site and post-grading confirmation sampling to verify conformance with the approved RBCs for the Project.

An Operations and Implementation Plan (OMIP) for the engineering (vapor mitigation) controls would require the future homeowners’ association to manage the vapor mitigation system maintenance. A recorded Land Use Covenant imposed by LARWQCB for the Project is expected to include restriction of pumping and use of groundwater; future access requirements associated with Tesoro’s operation of its soil vapor extraction system; any required groundwater monitoring activities; limitations on future excavation activities; and a requirement for vapor mitigation systems beneath all occupied structures.
Accordingly, implementation of ongoing bioremediation activities as identified in the RAP prior to Project approval and compliance with applicable laws and regulations governing the use, storage, and transportation of hazardous materials would ensure that all potentially hazardous materials are addressed in an appropriate manner to minimize potential impacts associated with upset or accident conditions. Potential impacts regarding hazardous waste upset or accident conditions would be less than significant.

**Operation**

Occupancy and use of the residential units would not create a significant hazard to the public or the environment and would not emit hazardous emissions. Routine maintenance and upkeep of the residential development would involve handling of small quantities of hazardous materials for activities including cleaning and local upgrades. However, as discussed under **Threshold IV.HAZ-1**, handling of such materials is addressed by compliance with the manufacturer’s instructions and proper storage when not in use. Therefore, potential impacts associated with upset or accident conditions would be less than significant.

**Threshold IV.HAZ-3:** Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code § 65962.5 and, as a result, would it create a significant hazard to the public or the environment.

California Government Code Section 65962.5 references the following types of hazardous materials sites: hazardous waste facilities; hazardous waste discharges for which the State Water Quality Control Board has issued certain types of orders; public drinking water wells containing detectable levels of organic contaminants; underground storage tanks with reported unauthorized releases; and solid waste disposal facilities from which hazardous waste has migrated. While Section 65962.5 makes reference to the preparation of a list, many changes have occurred related to web-based information access since 1992 and information regarding the Cortese List is now compiled on the websites of the DTSC, the State Water Resources Control Board, and CalEPA. The DTSC maintains the EnviroStor database, which includes sites on the Cortese List and also identifies potentially hazardous sites where cleanup actions or extensive investigations are planned or have occurred. The database provides a listing of federal Superfund sites, State response sites, voluntary cleanup sites, and school cleanup sites.

The EnviroStor database is maintained by DTSC and provides access to detailed information on hazardous waste permitted sites and corrective action facilities, as well as existing site cleanup information. EnviroStor also provides information on investigation, cleanup, permitting, and/or corrective actions that are planned, being conducted, or have been completed under DTSC’s oversight. The RWQCB maintains the GeoTracker database which manages sites that impact, or have the potential to impact, water quality in California. The GeoTracker database includes sites that require cleanup, are under current investigation/remediation, or have been closed with a status not requiring further investigation.
The Project Site is identified in two listings.\textsuperscript{8,9} The Project Site used to operate as a water treatment facility for treating produced water recovered during oil well production. This operation continued from 1926 to 1998. During this time, the land was owned by OOI. Because of the presence of hazardous materials during the water treatment operation, an evaluation of the Site and the subsequent remediation effort was initiated in the 1980s. In 1996 a Preliminary Assessment (Re-assessment) was completed under a U.S. EPA grant. That assessment did not result in further requirements under the Comprehensive Environmental Response, Compensation, and Liability Act. The City has overseen Site remedial efforts in coordination with RWQCB, which has cited California Water Code section 13267 as authority for its oversight of soil and groundwater remedial work.

As discussed under Threshold IV.HAZ-2, the RAP identifies recommendations that would be implemented on the Project Site prior to approval of the Project to allow for construction of the residential development (see Appendix IV.H.4). Recommendations include placement of an Engineered Cap over the contaminated soil north of Baker Street for use as open space or a park and the clean-up of the South parcel to allow for construction. The Engineered Cap would eliminate exposure to COCs that remain on site. Groundwater sampling data indicates there would be little to no chance COCs on site would affect groundwater quality beneath the parcel North of Baker Street with implementation of the Engineered Cap. Remediation work on the Project Site south of Baker street, would continue to conduct on-site bioremediation in accordance with a LARWQCB approved RAP prior to construction. If off-site disposal of contaminated soils is needed, all local, State, and federal regulations regarding the removal and transport of contaminated soils would be implemented. Additionally, any noncontaminated soils used in cleanup efforts on the Project Site can be generated on site or imported as identified in the RAP (see Appendix IV.H.4). With approval of the RAP by the RWQCB and implementation prior construction of the residential development, potential hazards to the public or environment would be less than significant.

7. CUMULATIVE IMPACTS

Hazards and hazardous materials can contribute to cumulative impacts if the Project were to contribute to the release of hazardous materials into the environment during transportation and handling or through contaminated groundwater which can affect downgradient properties. As previously discussed, the presence of contaminated soil and groundwater on-site would be reduced to a less than significant through the completion of ongoing bioremediation efforts. Additionally, any transport or handling of hazardous waste materials would comply with all federal and State requirements to minimize and reduce the exposure of the public to adverse hazardous impacts. Air quality impacts of the transport of soil and

other construction equipment is discussed in Section IV.B: Air Quality. Based on this information, the proposed Project would not contribute to cumulative impacts of hazardous material.

In addition, no related projects are proposed or located adjacent or near to the Project Site. All future projects involving hazardous waste materials or contaminated sites would be required to conduct technical studies and implement remediation action plans and mitigation measures in order to minimize any adverse impacts to the public. Future projects would also be required to comply with all federal and State requirements in handling hazardous waste materials which would further reduce any potential adverse impacts to the public. Such requirements would minimize adverse effects anticipated from future projects.

Operation of any related projects involving the use of potentially hazardous materials typical of those used in commercial and residential developments, including cleaning agents, paints, pesticides, and other materials used for landscaping. However, all future development located within the vicinity of the Project Site would be subject to the same local, State, and federal regulations described above with regard to hazards and hazardous materials. Accordingly, any risks associated with these materials would be adequately reduced to less than significant through compliance with these standards and regulations.

Impacts related to all environmental conditions that may be encountered during construction of the proposed Project would be reduced to less than significant through the implementation of the RAP as approved by the LARWQCB prior to construction and compliance with local, State, and federal regulations. As previously discussed, the proposed Project would result in less than significant hazard or hazardous materials impacts and each related project would be required to comply with the local, State, and federal laws and regulations. For these reasons, cumulative hazards and hazardous waste impacts would be less than significant.

8. MITIGATION MEASURES

With appropriate adherence to regulatory compliance measures including implementation of a RAP approved by the LARWQCB, no mitigation measures are required.

9. LEVEL OF SIGNIFICANCE AFTER MITIGATION

The proposed Project impacts, and contribution to potential cumulative hazardous waste impacts, would be less than significant.