SECTION 3.7
Hazards and Hazardous Materials

3.7.1 Introduction

This section evaluates the potential for the proposed program to result in adverse impacts associated with hazards or hazardous materials. The analysis is based on review of available hazards and hazardous materials reports, websites, and maps of the program area and vicinity, including reports and information posted on websites by the State Water Resources Control Board (SWRCB), the Department of Toxic Substances Control (DTSC), and the California Geologic Energy Management Division (CalGEM) [formerly known as the Division of Oil, Gas, and Geothermal Resources (DOGGR)], as well as information gathered from site-specific investigations conducted for sites within or near the program area. The relevant regulatory requirements are discussed, as are the methodology and thresholds used to determine whether the proposed program would result in significant impacts. This section analyzes the potential for both program-level and cumulative environmental impacts. All information sources used are included as citations within the text; sources are listed in Section 3.7.7, *References*.

3.7.2 Environmental Setting

Figure 2-1, *Regional Location*, and Figure 2-2, *Project Site and Local Vicinity*, in Chapter 2, *Project Description*, of this PEIR, show the program area, which is comprised of four program areas made up of 17 individual sites. The study area for evaluation of hazards and hazardous materials impacts includes the four program areas, along with nearby properties with the potential to affect or be affected by the proposed program. In addition, the larger program vicinity up to 0.25 mile from program area is considered relative to proximity to schools and up to 2 miles relative to proximity to airports. Note that hazards and hazardous materials impacts for the Synergy Oil Field site within the North Area, the City Property site within the Central Area, and the western portion of the Pumpkin Patch site were evaluated in the Los Cerritos Wetlands Oil Consolidation and Restoration Project EIR (State Clearinghouse No. 2016041083).

3.7.2.1 Historical and Present Land Uses in the Program Vicinity

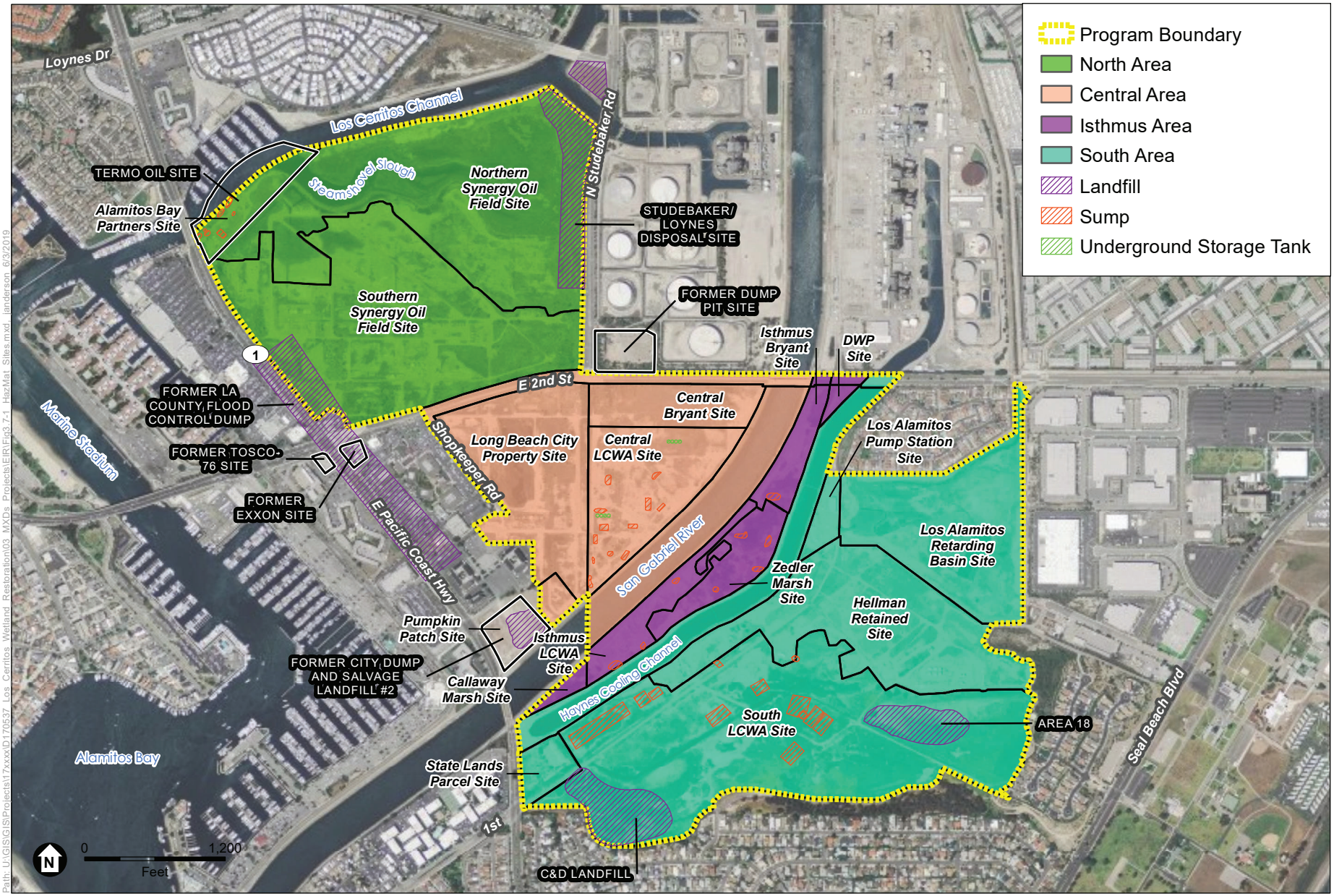
Various past and current land uses associated with the use, generation, or disposal of hazardous materials exist in the program area, including the ongoing production of oil and natural gas, other industrial and commercial uses such as gasoline service stations, and historical agricultural use. In

general, these land uses have the potential to have contributed to surface and subsurface contamination as described below:

- **Oil and Natural Gas Production**—Oil and natural gas production in the vicinity began as early as 1921. Oil production within the program area is discussed further below. Oil field production typically includes the extraction, storage, and transportation of oil and natural gas; and the reinjection of produced water back into the production zone. The maintenance of equipment requires the use of oils and greases, solvents, paints, and thinners. The four program areas have never been used for petroleum refining and no active refineries are located in the immediate vicinity.
- **Commercial/Industrial Uses**—Commercial and industrial land uses include former and current gasoline service stations, and other facilities that typically involve the use and storage of fuel, lubricants and oil, solvents, and other hazardous materials. Facilities with known releases of hazardous materials that have affected soil or groundwater are discussed further below.
- **Landfills**—Several locations within the program area have been used in the past as landfills, as discussed further below. Depending on the nature of the waste materials disposed of in the landfills, the timing of the landfilling operations (early landfills were typically lightly regulated and unlined), and the level of compliance with regulations, the landfilled waste materials may have included hazardous materials or have generated hazardous materials as the buried waste decomposed; however, based upon preliminary investigations, these landfills appear to have been used for limited periods of time for primarily municipal and construction wastes.
- **Agricultural Uses**—Portions of the program area were used for raising cattle and beets in the 1800s and early 1900s. Historical agricultural land uses may have left behind residual levels of fertilizers, pesticides, and herbicides in soils. In addition, fuels, oils, lubricants, and cleaning solvents for farm equipment maintenance may have been released during use or storage on the prior agricultural areas; however, considering the length of time since agricultural use was conducted on these individual sites, it is unlikely that residual chemicals associated with agricultural use would be present and natural attenuation would be expected to have degraded most, if not all, of the chemicals down to inert and nonhazardous compounds.

3.7.2.2 Hazardous Materials within the Program Area

This section assesses the potential for hazardous materials to be present in soil and groundwater at the program area as a result of past and present land uses, and documented releases of hazardous materials. The discussion of past and present uses of hazardous materials and documented releases is based on a review of environmental assessments and hazardous materials investigation reports, regulatory agency databases, and hazardous materials investigation reports available on regulatory agencies' websites, and site reconnaissance. In addition to the Phase I and II assessments conducted for various individual sites, the following regulatory agency databases of hazardous materials sites that are compiled pursuant to Government Code Section 65962.5 were reviewed for information: the SWRCB GeoTracker database and the DTSC EnviroStor database. The locations of the hazardous materials sites are shown on **Figure 3.7-1**, *Hazardous Materials Sites*.



SOURCE: Mapbox, LCWA

Los Cerritos Wetlands Restoration Plan Draft Program EIR

Figure 3.7-1
Hazardous Materials Sites

ESA

Synergy Oil Field Site

A Phase I environmental site assessment (Phase I assessment) was conducted for the Synergy Oil Field site to identify recognized environmental conditions[1] (Rincon 2015a). The Phase I report also summarized the results of previous assessments, investigations, and remediation activities. The Synergy Oil Field site is listed on the GeoTracker and EnviroStor websites for two landfill sites and one polychlorinated biphenyl (PCB) cleanup action; the Phase I assessment included discussion of other spills and cleanups not listed on GeoTracker or EnviroStor websites. The following summarizes the information and is based on the Rincon Phase I assessment, unless otherwise cited. More recent soil investigations are discussed in the 2016 and 2017 Soil Investigations section further below.

Oil Production and Associated Infrastructure

The Synergy Oil Field site currently consists of an active oil field and vacant land, the northern part of which is wetland habitat along the Los Cerritos Channel. The site includes 22 active (producing), seven idle, and 13 plugged (abandoned or destroyed) oil and natural gas production wells, eight water injection wells,[2] a network of piping and roads, a field office building, vapor recovery equipment, tank battery areas, two sheds, and numerous transformers. The type, status, and location of all wells on the program area are identified on Figure 3.5-3, *Oil Production and Injection Wells*, in Section 3.5, *Geology, Soils, and Paleontological Resources*. Historically, it was a common practice during the drilling of oil wells to excavate earthen sumps that would contain the produced oil, water, and drilling fluids (AEC 2016a). Sediment was allowed to settle and the oil was removed and sent to refineries for processing. After production ceased, the sump would be backfilled with drilling mud and other sediment, and left in place. An unknown number of these backfilled sumps are expected to be present on the Synergy Oil Field site adjacent to oil wells. The Phase I assessment noted that staining was observed on and in the vicinity of some of the producing and idle wells and in the vicinity of the transformers that were observed on-site.

Subsurface geologic materials sometimes contain naturally occurring radioactive materials, referred to in the oil industry as Naturally Occurring Radioactive Material (NORM)[3] (USGS 1999). This can occur due to the presence of the radioactive forms of radium, radon, and uranium, all of which occur naturally with low levels of radioactivity. The cited USGS study noted that the level of radioactivity in scale in California oil production sources tends to be at background or marginally detectable (i.e., imperceptible or trace levels). There is the potential for concentrations of dissolved NORM constituents may result in scale in pipes and storage tanks that handle oil. This scale is referred to as a type of "diffuse NORM waste" and can have low levels of radioactivity above background levels. During operations, oil processing facilities routinely remove scale to the extent

[1] A recognized environmental condition is defined as the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: (1) due to any 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.

[2] The production of oil actually produces much more water than oil. This is called produced water, which is returned to the production zone using injection wells to prevent land subsidence. For current production on the Synergy Oil Field site, typically less than 5 percent of the pumped fluid is oil and remainder is water (Rincon 2015a).

[3] NORM consists of materials, usually industrial wastes or by-products, enriched with radioactive elements found in the environment.

feasible from pipelines and tanks (API 2014). After operations when the pipeline is removed, the pipeline segments are tested for radioactivity and managed accordingly.

Documented Spill/Release Incidents

Four spill/release incidents of oil or grease were documented between 2006 and 2010 on the Synergy Oil Field (and/or Long Beach City Property site discussed further below) site; all of these spills were reportedly cleaned up with the oversight and approval of regulatory agencies, as summarized below:

- On March 28, 2006, an unknown oil material (10 barrels) mixed with produced water (30 barrels) spilled onto soil from a punctured aboveground storage tank (AST) in a tank farm. Remedial action included a cleanup crew on-site physically removing the spilled material.
- In July 2007, an internal flow line broke resulting in the discharge of crude oil and produced water (approximately 1 barrel) onto the ground.
- On February 4, 2010, an unknown amount of pipe grease was released. The area was cleaned up and was witnessed by an EPA coordinator.
- On February 15, 2010, an unknown amount of crude oil was released from a pinhole leak on the production line of an oil well that resulted in the release of oil onto off-site private property. In response, the line was clamped and booms were placed to contain the oil.

The Phase 1 assessment also noted that various other older site investigations and cleanups were conducted from 1992 through 2004 to assess the extent and concentrations of petroleum hydrocarbons in soil across the site. The combined result of the various investigations indicated that released petroleum hydrocarbons were predominantly composed of heavier hydrocarbons with carbon chain lengths of greater than C_{36}. This means the majority of the molecules in the residual oil in the soil have 36 or more carbon atoms in each molecule; gasoline is in the range of C_4 to C_{12} and diesel in the range of C_8 to C_{24}. The hydrocarbon range heavier than C_{36} includes heavier, less mobile hydrocarbons such as heavy fuel oils, lubricating oils, asphalts, pitch, waxes, and related compounds. Recent soil investigations conducted in 2016 and 2017 further tested soil, as discussed below in the 2016 and 2017 Soil Investigations section.

Closed On-Site Landfills

The Studebaker/Loynes Disposal Site or City Dump and Salvage #4 Landfill was located on a narrow strip in the northeastern portion of the Synergy Oil Field site, as shown in Figure 3.5-4, *Landfill Areas and Oil Production Sumps*, in Section 3.5, *Geology, Soils, and Paleontological Resources*, and Figure 3.7-1. The landfill was a Class II landfill permitted to accept Class II waste including household and commercial refuse such as cans, metals, paper products, lawn clippings, sod, shrubs, garbage, market refuse, ashes, and inert solid materials such as rock, gravel, asphalt, earth, brick, glass, plaster products, rubber, and street sweepings. No reported liquid or hazardous wastes were deposited at the site and maximum depth to refuse is estimated to be up to 25 feet. The waste was placed in a previously existing depression area, compacted, and covered with new soil in conformance with slope and final cover requirements. Approximately 160,000 cubic yards of waste materials were landfilled during the 1960s. The landfill was closed in mid-April 1980.

The former LA County Flood Control Dump may have extended onto the southwestern corner of the Synergy Oil Field site. The records are unclear as the precise location and extent. This possible landfill was reportedly used to dispose of vegetation growing along the banks of the San Gabriel River. No hazardous materials are known to have been disposed of at this location.

PCB Removal

Historical records indicate that there had been a release of PCBs at transformer locations on the Synergy Oil Field and City Property sites. To address the releases, several site assessments and remedial excavations were performed in 2009 and 2010. The U.S. Environmental Protection Agency (USEPA) directed that soils having PCB concentrations above 1 milligram per kilogram (mg/kg) be removed and disposed of off-site. One of the transformer locations on the Synergy Oil Field site required remediation and was excavated to approximately 3 feet below ground surface (bgs). Two excavations approximately 10 feet wide by 10 feet long by 3 feet deep were excavated and the material removed for off-site disposal. The USEPA issued a No Further Action letter for the PCB remedial action on February 24, 2010.

Asbestos-Containing Materials and Lead-Based Paint

A 2003 survey of the on-site structures indicated that asbestos-containing materials (ACM) and lead-based paint (LBP) had been identified in the office building, north shed, and south shed areas. In addition, tank batteries and pipelines may have ACM insulation or LBP (AEC 2017b).

2016 and 2017 Soil Investigations

Based on the results of the previously summarized Phase I assessment, additional soil testing was conducted in December 2016, February 2017, and April 2017 (AEC 2017a). The samples were tested for total petroleum hydrocarbons (TPH) in the gasoline, diesel, and oil range; volatile organic compounds (VOCs); and metals. Not all samples were analyzed for all chemicals; the selection of analytical tests depended on the sample location, surrounding land use, and previous testing results.

The testing results were mostly below detection levels or at low concentrations below regulatory screening levels. Elevated concentrations of TPH and other chemicals were detected for some of the samples collected near the locations of the storage tanks and along Steamshovel Slough. Some of the detected concentrations exceeded screening levels for TPH in the gasoline and diesel range, naphthalene, and arsenic. Note that the DTSC has established a regional background arsenic concentration of 12 mg/kg in soil used as screening criteria for sites in Southern California (Chernoff et al. 2008); all of the arsenic concentrations are below background levels. The concentrations of TPH and naphthalene are above screening levels. Based on the analytical results, the affected soil above screening levels is scheduled to be excavated and disposed at a landfill permitted to accept the soil. The lateral limits of the excavation and the volume of soil to be removed would depend on the results of additional sampling proposed to define the extent of the affected area. As previously noted, the scheduled removal actions were evaluated in the Los Cerritos Wetlands Oil Consolidation and Restoration Project EIR (State Clearinghouse No. 2016041083).

Termo Oil Site

The Termo Oil Site is an active oil production site operated by the Alamitos Bay Partners (see Figure 3.7-1) and adjacent to the northwest of the Synergy Oil Field site. The site has been used for the production of oil since the 1920s and currently has three active oil production wells, two plugged wells, one idle well, a tank farm, and associated infrastructure (Arcadis 2018). The site has been undergoing soil, soil gas, and groundwater investigations to characterize the nature and extent of petroleum hydrocarbons since 1991, primarily associated with former oil sumps adjacent to wells. In 1998, soil excavation, dewatering, and land treatment was conducted to treat contaminated soil and remove oily water. Groundwater monitoring was conducted from 1997 to 1999 to confirm successful groundwater treatment and subsequent sampling indicates low to non-detectable petroleum hydrocarbon levels below action levels. Subsequent soil sampling in 2017 indicated the following:

- **Soil Gas** – No VOCs or TPH compounds were reported in soil gas above the applicable soil gas screening levels.
- **Soil** – No VOCs, semivolatile organic compounds (SVOCs), PCBs, chlorinated herbicides, organochlorine pesticides, or organophosphorus pesticides were reported above the applicable soil screening levels. TPH in the oil range (TPH-oil) was detected in some soil samples at concentrations ranging from 3.38 to 18,900 mg/kg. The source of heavy-end TPH is crude oil production.
- **Groundwater** – Groundwater samples were collected from the three on-site monitoring wells. Based on prior groundwater monitoring reports, groundwater flows primarily to the southwest. TPH concentrations ranged from 0.28 to 1.039 milligrams per liter (mg/L) Pentachlorophenol was detected in one groundwater sample at a concentration of 17 micrograms per liter (μg/L), which exceeded the maximum contaminant level (MCL; also known as the primary drinking water standard) of 1 μg/L. No other constituents were reported in groundwater above the MCLs.

Long Beach City Property Site

A Phase I assessment was conducted for the Long Beach City Property site to identify recognized environmental conditions (Rincon 2015b). The Phase I assessment also summarized the results of previous assessments, investigations, and remediation activities. The Long Beach City Property site is listed on the GeoTracker and/or EnviroStor websites for the landfill sites and PCB cleanup described above in the Synergy section; the Phase I assessment included discussion of other spills and cleanups not listed on GeoTracker or EnviroStor websites. The following summarizes the information and is based on the 2015 Rincon Phase I assessment unless otherwise cited.

Oil Production and Associated Infrastructure

As shown in Figure 3.5-3 in Section 3.5, *Geology, Soils, and Paleontological Resources*, the Long Beach City Property site has eleven active, two idle, and nine plugged oil wells. As previously discussed for the Synergy Oil Field site, it is assumed that some of the wells may have backfilled sumps adjacent to the oil wells.

Documented Spill/Release Incidents

Spills and/or releases documented between 2006 and 2010 are discussed above (see Synergy Oil Field site information above); all of these spills were reportedly cleaned up with the oversight and approval of regulatory agencies, as summarized below.

PCB Removal

Investigations and cleanups for the release of PCBs at transformer locations on the Long Beach City Property site are discussed above (see Synergy Oil Field site information above). The USEPA issued a No Further Action letter for the PCB remedial action on February 24, 2010.

2016 and 2017 Soil Investigations

As a part of the previously discussed 2016 and 2017 soil investigations conducted on the Synergy Oil Field site, one soil sample was collected at the northeast corner of the Long Beach City Property site (AEC 2017a). The sample was tested for TPH in the gasoline, diesel, and oil range; lead; and arsenic. The testing results were either below detection levels (TPH-gasoline) or at low concentrations below regulatory screening levels (all other chemicals). Similar to the other testing results, arsenic was detected above screening levels but below regional background levels. Additional testing has been proposed for the area around two storage tanks in the southern part of the Long Beach City Property site (AEC 2017c). Based on the sampling results to date, no remediation has been proposed for the City Property site.

Pumpkin Patch Site

A Phase I assessment was conducted for the Pumpkin Patch site to identify recognized environmental conditions (AEC 2016a). As discussed in Chapter 2, *Project Description*, of this PEIR, the program area includes only the eastern portion of the Pumpkin Patch property. The former City Dump and Salvage Landfill #2 shown on Figure 3.7-1, is just west and outside of the program area; that former landfill is discussed further below in the section on Hazardous Materials at Nearby Sites. The eastern portion that is within the program area is discussed below.

Oil Production and Associated Infrastructure

The eastern one-third of the Pumpkin Patch site has one active oil well with a pumpjack type pumping unit (also called a horsehead, rocking horse, and other names) and surface and subsurface pipelines for oil delivery. Oil production from this site dates to the 1920s and is part of the Seal Beach Oil Field. As shown in Figure 3.5-3 Section 3.5, *Geology, Soils, and Paleontological Resources*, the Pumpkin Patch site has one active and one plugged oil well. As previously discussed, backfilled earthen sumps are anticipated to be adjacent to some wells that would contain produced oil and drilling mud. The Phase I assessment review of 1928 and 1938 aerial photographs indicated within the central-eastern portion of the site two side-by-side sumps adjacent to the drilling derrick. The two sumps and the derrick were removed by 1947. Future grading may encounter crude oil and/or drilling fluids in undocumented former sumps in this area, if any remain.

Central LCWA Site

The Central LCWA site is located within the Central Area (see Figure 2-2 in Chapter 2, *Project Description*, and Figure 3.7-1) and has seven active oils wells, 14 plugged oil wells (see Figure 3.5-3 in Section 3.5, *Geology, Soils, and Paleontological Resources*), oil pipelines, and dirt access roads (CalGEM, 2019). Oil production started as early as 1944. Given the age of this oil production area, the oil wells are assumed to also have sumps adjacent to the well heads; Figure 3.5-4 in Section 3.5, *Geology, Soils, and Paleontological Resources*, shows the locations of known sumps (Geosyntec, 2017).

Central Bryant Site

The Central Bryant site is located within the Central Area (see Figure 2-2 in Chapter 2, *Project Description*, and Figure 3.5-3 in Section 3.5, *Geology, Soils, and Paleontological Resources*) and has two oil wells, installed in 1945 and 1946, and plugged in 1973 (CalGEM, 2019). It is unknown whether any oil pipelines are still present. Given the age of this oil production area, the oil wells are assumed to also have sumps adjacent to the well heads. No development is visible on this site.

Isthmus Area

The Isthmus LCWA site portion of the Isthmus Area has four active oil wells, one idle oil well, 12 plugged wells, and oil infrastructure consisting of an access road, oil pipelines, three storage tanks, and eight buildings (see Figure 2-2 in Chapter 2, *Project Description*, and Figure 3.5-3 in Section 3.5, *Geology, Soils, and Paleontological Resources*) (CalGEM, 2019). The Isthmus Bryant portion of the Isthmus Area has one plugged oil well. Oil production started as early as 1946. Given the age of this oil production area, the oil wells are assumed to also have sumps adjacent to the well heads. The locations of known sumps are shown on Figure 3.5-4 in Section 3.5, *Geology, Soils, and Paleontological Resources*, and Figure 3.7-1 (Geosyntec 2017).

Hellman Oil Fields

The Hellman oil fields originally consisted of the Hellman Retained site and the South LCWA site in the South Area, as shown on Figure 2-2 in Chapter 2, *Project Description*. LCWA acquired the South LCWA site, which is no longer used for oil production. The combined Hellman oil field has 46 active oils wells, 11 idle well, 9 plugged wells, 17 storage tanks, along with several buildings and pipelines (see Figure 2-2 in Chapter 2, *Project Description*, and Figure 3.5-3 in Section 3.5, *Geology, Soils, and Paleontological Resources*) (CalGEM, 2019). Four plugged wells are on the South LCWA site. Oil production started as early as 1936. Given the age of this oil production area, the oil wells are assumed to also have sumps adjacent to the well heads. The location of known sumps are shown on Figure 3.5-4 in Section 3.5, *Geology, Soils, and Paleontological Resources* (Kinnetic 2012).

Former C&D Landfill

The former C&D landfill is located with the South Area (see Figure 3.7-1). The landfill area is not known to have had any oil wells (CalGEM, 2019). The landfill was investigated for hazardous materials in 2004 and 2006 (Anchor 2006). The landfill reportedly accepted clean fill material from

city projects, private projects, and the U.S. Army Corps of Engineers (USACE) in conjunction with dredging of the San Gabriel River. When investigated further in 2006, the observed landfilled materials consisted of layered sand, silt, clay, and gravel, with chunks of concrete and asphalt of varying sizes; no other waste types were observed other than one license plate.

Although not considered to be associated with the former landfilling activities, crude oil was observed along the southern portion of the landfill in 2006. The extent of the crude oil in 2006 was approximately 100 feet wide by 500 feet long by 3 to 6 inches thick at a depth of about 10 feet below the ground surface. The source is believed to be a former oil pipeline that crossed this area that was removed between 1954 and 1958.

Area 18

Area 18 is located in the eastern portion of the South LCWA site (see Figure 3.7-1) (Geosyntec, 2017). Stockpiled and buried materials consisted of asphalt-like materials consisting of "tank bottom sludge" – heavy petroleum material removed from the bottom of tanks or sumps, which was mixed with sand or other aggregate and used for improvised road paving.

3.7.2.3 Hazardous Materials at Nearby Sites

The following regulatory agency databases of hazardous materials sites that are compiled pursuant to Government Code Section 65962.5 were reviewed to identify documented releases of hazardous materials in soil and groundwater within 0.25 mile (1,320 feet) of the program area: the SWRCB GeoTracker and DTSC EnviroStor website databases. The relevant individual site documents are cited below. A 0.25-mile search radius from the program area was selected because sites beyond this distance would be unlikely to affect the program area due to the typically limited migration of shallow groundwater contaminant plumes from leaking underground storage tank (LUST) cases.

Open environmental cases and their distance from project components are summarized below in **Table 3.7-1**, *Environmental Cases Identified within 0.25 Miles of the Program Area*. The location of environmental cases identified within this area is shown in Figure 3.7-1. LUST sites and other sites that have been closed by the regulatory agency are not discussed because site closure indicates that the regulatory agency considers such sites to pose a low threat to human health and groundwater quality. In addition, sites listed with operational permits are not listed unless the website indicates active investigation and cleanup in response to releases. The landfills within the program area are discussed above. The Former Dump Pit Site identified on Figure 3.7-1, located just north of the Central Area, another LCWA site but located just outside of the program area, is also included below.

TABLE 3.7-1
ENVIRONMENTAL CASES IDENTIFIED WITHIN 0.25 MILES OF THE PROGRAM AREA

Site Name/Address	Approximate Distance and Direction from Program Area	Status and Comments
Pumpkin Patch site	Adjacent and southwest of Long Beach City Property site	Active—Groundwater monitoring
Former Dump Pit site	Adjacent; east of Synergy Oil Field site and north of Central Bryant site	Inactive investigation
Termo Oil site	Adjacent and northwest of Synergy Oil Field site	Active—Site assessment
Former Exxon #7-3047	East corner of Pacific Coast Highway and Westminster Avenue; just south of Synergy Oil Field site	Active—Groundwater remediation in progress
Former Tosco—76 Station #5379	South corner of Highway 1 and Westminster Avenue; just south of Synergy Oil Field site	Active—Groundwater remediation in progress

SOURCES: AEC, 2016a; Arcadis, 2018; Blaes, 2016; Northgate, 2019.

Pumpkin Patch Site

A Phase I assessment was conducted for the Pumpkin Patch site to identify recognized environmental conditions (AEC 2016a). As discussed in Chapter 2, *Project Description*, of this PEIR, the program area includes only the eastern portion of the Pumpkin Patch property. The former City Dump and Salvage Landfill #2 shown on Figure 3.7-1 is just west and outside of the program area and is discussed below.

Closed Landfill

The western two-thirds of the Pumpkin Patch property was previously operated as the City Dump and Salvage Landfill #2; the extent of the landfilled material is shown in Figure 3.5-4 in Section 3.5, *Geology, Soils, and Paleontological Resources*, and Figure 3.7-1. In September 1960, City Dump and Salvage received a permit from the County of Los Angeles, Industrial Waste Division, to accept household and construction waste in the eastern half of the site at a minimum of at least 300 feet from Pacific Coast Highway (PCH). The following waste was permitted for acceptance:

- Non-water soluble, non-decomposable inert solids;
- Ordinary household and commercial refuse, including decomposable organic refuse and scrap metal; and
- Garbage and market refuse.

The disposal of liquids, semi-liquids, and hazardous waste was not permitted. The landfill commenced waste acceptance operations at the site in mid-1960 and ceased operations in early 1961 after filling the "trench" landfill to its permitted capacity. The disposal permit allowed for the excavation of a trench to below the groundwater table and the subsequent filling with refuse. Final cover of the landfill was completed by May 16, 1961.

Various investigations have been conducted beginning in 1987 to delineate the extent of the landfill, and to characterize the nature and extent of chemicals associated with both the landfill and the oil production. The combined investigations indicate the landfill is rectangular-shaped,

encompasses the eastern half of the property, and that the refuse in the central portion of the burial area extends to a depth of 30 feet bgs. The refuse in the landfill consists of newspaper, plastic, metal, wood, glass, plant debris, rubber tubes and tires, and green waste.

Soil and groundwater investigation was initiated in July 2016 and included the installation of six groundwater monitoring wells, along with the sampling and analysis of soil and groundwater samples (AEC 2019). The measured depths to groundwater have ranged from 12.92 to 15.37 feet bgs, and fluctuate with the tides, primarily derived by sea water intrusion.

The soil samples were analyzed for TPH, VOCs, polynuclear aromatic hydrocarbons (PNAs or PAHs), Title 22 metals (arsenic, barium, beryllium, cadmium, chromium, cobalt, copper, lead, mercury, molybdenum, nickel, selenium, silver, thallium, vanadium, and zinc), and PCBs. The soil analytical results identified numerous detections of TPH as gasoline, diesel and oil, along with various VOCs at two locations within the former landfill trench. In addition, the shallow soil sample in or near the former oil well sump associated with the on-site oil well indicated the presence of crude oil and the soil sample exhibited a crude oil odor. One soil sample in the boring within the former landfill trench was the only soil sample to exceed an industrial environmental screening level (ESL)[4] with diesel at 2,000 mg/kg. The ESL for diesel is 1,100 mg/kg.

The groundwater samples have been analyzed for TPH, VOCs, PNAs, Title 22 metals, PCBs, and water quality parameters of chloride, sulfate, and total dissolved solids (TDS) (AEC 2019). The groundwater analytical results identified numerous detections of TPH as gasoline, diesel, and oil, along with various VOCs in groundwater. As previously discussed, the two locations within the former landfill trench have the most and highest detections of chemicals. The results from one well exceeded industrial land use ESLs for gasoline and diesel, the VOCs 1,4-dichlorobenzene, benzene, ethylbenzene, naphthalene, and tertiary butyl alcohol (TBA; a gasoline additive) and Aroclor-1242 and 1258 (PCB compounds). The chloride, sulfate, and TDS concentrations from all groundwater wells exceeded their respective secondary maximum contaminant levels (SMCLs) of 250 mg/L, 250 mg/L, and 50 mg/L, respectively. The landfill continues to be monitored under the requirements of General Order No. R4-2002-022 for post closure maintenance of closed, inactive, or abandoned landfills (LARWQCB 2002).

Former Dump Pit Site

A Phase I assessment was conducted for the Former Dump Pit site to identify recognized environmental conditions (AEC 2016b) (see Figure 3.7-1). The Phase I report also summarized the results of previous Phase I and II assessments. The following assessment results are from the Phase I assessment unless otherwise cited.

Recent Land Use

The Former Dump Pit site consists of a level grade, hard packed dirt and gravel pad with a perimeter chain-link fence. An off-site earthen berm borders the northern and eastern borders of

[4] Although the AEC report did not provide a source for the ESL, it is assumed to be from the San Francisco Bay RWQCB ESLs, screening levels that are commonly used throughout the state to screen analytical results and assess whether further action is needed. Note that ESLs do not necessarily represent cleanup action levels but are rather used for preliminary screening to assess whether further action is needed.

the site and provides containment for the adjacent large volume crude oil ASTs that are also located to the north and east of the Former Dump Pit site. At the time of the Phase I site inspection in 2016, concrete K-Rails, two locked metal "sea train" type storage containers, several roll-off type metal containers containing dirt and cement/asphalt construction debris, and concrete wash-out containers were located throughout the site. Stockpiles of waste dirt and construction debris were observed throughout the site and it was reported that the subject site had been built up with approximately 20 feet of undocumented fill soil that was brought on-site over a long period previous to 1973.

A large stockpile of plastic traffic barricades was located along the northeast corner of the site and an outdoor workspace was located near the steel containers within the northwest corner of the site. Visible within this area were 55-gallon drums, as well as smaller metal and plastic containers and miscellaneous scrap metal and construction waste including wood, concrete and scrap metal. Several 55-gallon drums of "Spec Strip 100 VOC", which prevents bonding of concrete to forms and form liners, were located on wooden pallets; this material is used as a "non-stick" agent for off-site construction projects. A large amount of windblown household waste was also observed along the southern and western perimeter of the site adjacent to the chain-link fence. Possible drainage features were additionally observed on-site but did not appear to be in working condition at the time of the Phase I assessment.

Oil Production and Associated Infrastructure

The Former Dump Pit site is within the Seal Beach Oil Field. Historical aerial photographs, topographic maps, and CalGEM Map 132 indicates one plugged oil well along the southern edge of the site (Cal Resources "Bryant" 9) and numerous active and abandoned oil wells off-site to the west and south (see Figure 3.5-3 in Section 3.5, *Geology, Soils, and Paleontological Resources*). Otherwise, the site has remained undeveloped and no other permanent structures are known to have existed.

Dump Pit

A previous 2004 Phase II report, included in the above-cited 2016 Phase I assessment, described an area in the central-western portion of the Former Dump Pit site as a "dump pit" previously used for dumping waste cement and asphalt debris prior to 2004. The location of the dump pit is shown in Figure 3.7-1, but the areal extent of the pit is uncertain. During the Phase II investigation, a solid-stem auger dropped approximately 5 feet in an area where the buried concrete debris included a void space. A visual inspection inside the annular space indicated a small cavern in the shallow subsurface.

The 2004 chemical testing of soil indicated soil with elevated concentrations of arsenic lead, nickel, and vanadium. Soil gas concentrations for VOCs did not exceed the conservative shallow soil gas ESLs for the commercial/industrial land use scenario published by the San Francisco Bay Area RWQCB.[5] Hydrogen sulfide gas was not detected in the 10 soil gas samples collected at the site. Methane concentrations in soil gas samples were several orders of magnitude below the

[5] As discussed in Section 3.7.3, Regulatory Framework, other regions within California also use the San Francisco Bay Area RWQCB ESLs.

lower explosive limit (LEL) of 5 percent (50,000 parts per million [ppm]). No VOCs or SVOCs were detected in groundwater samples collected at the Former Dump Pit site.

In light of elevated concentrations of arsenic, lead, nickel and vanadium in soil at two locations identified during the 2004 investigation, additional soil testing was conducted in June 2017 at two locations proximal to earlier sampling locations within the central portion of the site (AEC 2017d). The results indicated that the metals concentrations were below screening levels, arsenic concentrations were all below regional background levels, and no further investigation or remediation was recommended for the Former Dump Pit site.

Former Exxon #7-3047

The former Exxon Station #7-3047, now called the Circle K Store, is located at 6401 Pacific Coast Highway, south of the Synergy Oil Field site and is an active gasoline service station (Blaes 2016, 2019) (see Figure 3.7-1). The station had a release of gasoline and is currently undergoing monitoring and cleanup. Liquid phase gasoline was removed from various on-site wells between 1988 and 2012, after which liquid phase gasoline has not been observed floating on groundwater in any of the wells. A vapor extraction system operated at the station from 1998 to 2006 to further remove gasoline from the subsurface. An air sparge system has been installed and periodically operated to the present. Air sparge wells bubble air into groundwater to transfer the gasoline components from groundwater to air, which is then pumped out of the subsurface and treated by a soil vapor extraction and treatment system. The March 2019 groundwater monitoring results indicate the extent of gasoline in groundwater is on the site and to the west away from the program area.

Former Tosco-76 Station #5379

The former Tosco-76 Station #5379, is located at 6280 East 2nd Street, south of the Synergy Oil Field site and is a now removed gasoline service station (Northgate 2019) (see Figure 3.7-1). The gasoline service station operated at the site between 1968 and 1998 and had releases of fuel and waste oil from leaking underground storage tanks and related equipment such as dispensers, product pipelines, pumps, and valves. The station previously underwent soil and groundwater investigation and cleanup from 1998, when the USTs were removed and the station demolished, to 2018, when the last soil excavation action was completed. Confirmation samples indicated that fill and soil with petroleum hydrocarbon concentrations above regulatory action levels had been removed. Subsequent sampling of groundwater did not detect any free floating fuel or oil product and did not detect any VOCs including the volatile components of gasoline. The fuel additives of methyl tertiary butyl ether (MTBE) and tributyl alcohol (TBA) were detected at low concentrations but were attributed to the adjacent former Exxon station discussed above. Groundwater flow directions range from southwest to northwest, and are influenced by tidal action. The groundwater flow directions are away from the program area.

3.7.2.4 Nearby Airports

The Los Alamitos Army Airfield is located about 2.7 miles northeast of the Synergy Oil Field site. The Long Beach Airport is located about 3.2 miles northwest of the Synergy Oil Field site. No public or private airports are located within 2 miles of the program area. The Boeing Seal

Beach complex, located about 1 mile east of the program area, has a rooftop helicopter pad; however, a helicopter pad would not have the flight path restrictions that planes and jets have. Therefore, this helicopter pad is not considered further.

3.7.2.5 Nearby Schools

The nearest schools are the JH McGaugh Elementary School, located about 0.36-mile south of the South LCWA Site at 1698 Bolsa Avenue in Seal Beach, and the Charles F. Kettering Elementary School, located about 0.40-mile north of the Synergy Oil Field site at 550 Silvera Avenue. No schools are located within 0.25 mile of the program area.

3.7.2.6 Wildfire Hazards

California Department of Forestry and Fire Protection (CAL FIRE) maps identify fire hazard severity zones in state and local responsibility areas for fire protection. The program area is not located within or near a very high or high fire hazard severity zone (CAL FIRE 2007, 2011).

3.7.3 Regulatory Framework

The primary program activities that have the potential for resulting in potential impacts with respect to hazards and hazardous materials consist of encountering existing on-site contaminants. Portions of the program area contain amounts of regulated materials from past oil drilling and production operations, requiring certain treatment and disposal techniques; removal of landfill material that may be present on portions of the program area; and the potential for leaks and other hazards from the equipment and oil field facilities to be used as part of the ongoing oil production operations. For the most part, the majority of these activities are heavily regulated by existing state and local laws and regulations. The discussion below identifies the numerous federal, state and local laws and regulations that will govern the proposed activities, and how those regulations serve to avoid or minimize potentially significant effects.

3.7.3.1 Federal

Comprehensive Environmental Response, Compensation, and Liability Act, and the Superfund Amendments and Reauthorization Act of 1986

The Comprehensive Environmental Response, Compensation, and Liability Act, also known as Superfund or CERCLA, provides for the response and cleanup of hazardous substances that may endanger public health or the environment. The Superfund Amendments and Reauthorization Act (SARA) amended Superfund to increase state involvement and required Superfund actions to consider state environmental laws and regulations.

Relevant to this program, SARA also established a regulatory program for the Emergency Planning and Community Right-to-Know Act. The applicable part of SARA for the proposed program is Title III, otherwise known as the Emergency Planning and Community Right-To-Know Act of 1986. Title III requires states to establish a process for developing local chemical emergency preparedness programs and to receive and disseminate information on hazardous

substances present at facilities in local communities. The law provides primarily for planning, reporting, and notification concerning hazardous substances. Key provisions require notification when extremely hazardous substances are present above their threshold planning quantities, immediate notification to the local emergency planning committee and the state emergency response commission when a hazardous material is released in excess of its reportable quantity, and that material safety data sheets for all hazardous materials or a list of all hazardous materials be submitted to the state and local emergency planning agencies and local fire department.

Resource Conservation and Recovery Act of 1976, Toxic Substances Control Act of 1976, and Hazardous and Solid Waste Act of 1984

Implementation of the Resource Conservation and Recovery Act (RCRA) and the Toxic Substances Control Act (TSCA) of 1976 resulted in the creation of a major federal hazardous waste regulatory program that is administered by USEPA. USEPA regulates the generation, transportation, treatment, storage, and disposal of hazardous waste. RCRA was amended by the associated Hazardous and Solid Waste Amendments (HSWA), which affirmed and extended the concept of regulating hazardous wastes from generation through disposal. HSWA specifically prohibits the use of certain techniques for the disposal of some hazardous wastes. Under RCRA, individual states may implement their own hazardous waste programs instead of RCRA, as long as the state program is at least as stringent as the federal RCRA requirements. USEPA approved California's program to implement federal hazardous waste regulations on August 1, 1992.

Clean Water Act of 1972 as amended by the Oil Pollution Act of 1990

Under the authority of the Clean Water Act (CWA), as amended by the Oil Pollution Act, USEPA adopted, implements, and enforces the Oil Pollution Prevention regulations of 40 Code of Federal Regulations (CFR) Parts 109–114. The regulations establish requirements for preventing, preparing for, and responding to oil discharges at specific non-transportation-related facilities that have a reasonable expectation of an oil discharge into or upon navigable Waters of the US or adjoining shorelines. The regulations also establish procedures, methods, and equipment requirements, in addition to the Spill Prevention, Control, and Countermeasure (SPCC) plan. Onshore oil well drilling/production facilities are subject to SPCC rule if a single oil container has a storage capacity equal to or greater than 55 gallons, the total aboveground oil storage capacity exceeds 1,320 gallons, or the underground oil storage capacity exceeds 42,000 gallons and, due to its location, the facility could reasonably be expected to discharge oil into or upon the navigable Waters of the U.S. Typically, any facility that could not reasonably be expected to have a discharge due to the facility's location is not subject to the regulations. That applicability determination must be based solely upon considering the geographical and location aspects of the facility, such as proximity to navigable waters or adjoining shorelines, land contour, and drainage. The determination cannot be based in whole or part on manmade features (e.g., dikes or equipment) that may restrain, contain, or otherwise prevent a discharge. The SPCC plans covered in these regulatory programs apply to oil storage and transportation facilities and terminals, tank farms, bulk plants, oil refineries, and production facilities, as follows:

- Part 109 establishes the minimum criteria for developing oil-removal contingency plans for certain inland navigable waters by state, local, and regional agencies in consultation with the regulated community, i.e., oil facilities.

- Part 110 prohibits discharge of oil such that applicable water quality standards would be violated, or that would cause a film or sheen upon or in the water. These regulations were updated in 1987 to adequately reflect the intent of Congress in CWA Section 311(b)(3) and (4), specifically incorporating the provision "in such quantities as may be harmful."
- Part 112 deals with oil spill prevention and preparation of SPCC plans. These regulations establish procedures, methods, and equipment requirements to prevent the discharge of oil from onshore and offshore facilities into or upon the navigable waters of the United States. These regulations apply only to non-transportation-related facilities. One of the requirements of the SPCC is that storage tanks be equipped with secondary containment systems to prevent oil spills from migrating into soil, groundwater, or surface water.
- Part 113 established financial liability limits; however, these limits were preempted by the Oil Pollution Act of 1990.
- Part 114 provides civil penalties for violations of the oil spill regulations.

U.S. Department of Transportation Hazardous Materials Transport Act of 1974

The U.S. Department of Transportation (USDOT), in conjunction with USEPA, is responsible for enforcement and implementation of federal laws and regulations pertaining to transportation of hazardous materials. The Hazardous Materials Transportation Act of 1974 directs the USDOT to establish criteria and regulations regarding the safe storage and transportation of hazardous materials. CFR 49, 171–180, regulates the transportation of hazardous materials, types of material defined as hazardous, and the marking of vehicles transporting hazardous materials.

Hazardous Liquid Pipeline Safety Act of 1979 and Transportation of Hazardous Liquids by Pipeline

The Department of Transportation Office of Pipeline Safety is responsible for enforcement and implementation of regulations pertaining to the minimum requirements for materials, design, fabrication, assembly, construction, operation, inspection, testing, and maintenance of pipelines transporting hazardous liquids including petroleum products. The regulations within 49 CFR 195 include the following:

- Part 195.30 incorporates many of the applicable national safety standards of the American Petroleum Institute (API), American Society of Mechanical Engineers (ASME), American National Standards Institute (ANSI), and American Society for Testing and Materials (ASTM).
- Part 195.50 requires an accident report by telephone and in writing for each failure in a pipeline system in which there is a release of the hazardous liquid or carbon dioxide (CO_2).
- Part 195.100 includes minimum design requirements for new pipeline systems including for the temperature environment; variations in pressure; internal design pressure for pipe specifications; external pressure and external loads; and new and used pipe, valves, fittings and flanges.
- Part 195.200 provides minimum pipeline construction requirements for standards such as compliance, inspections, welding, siting and routing, bending, welding and welders, inspection and nondestructive testing of welds, external corrosion and cathodic protection, installing in-ditch and covering, clearances and crossings, valves, pumping, breakout tanks, and construction records.

- Part 195.300 provides minimum requirements for pressure testing of steel pipes (including test pressures and duration, test medium, and records), and
- Part 195.400 provides minimum requirements for operating and maintaining pipeline systems constructed with steel pipeline.

Occupational Safety and Health Act of 1970

The Occupational Safety and Health Act was passed to address employee safety in the workplace. The act created the Occupational Safety and Health Administration (OSHA), whose mission is to ensure the safety and health of America's workers by setting and enforcing standards; providing training, outreach, and education; establishing partnerships; and encouraging continual improvement in workplace safety and health. The OSHA staff establishes and enforces protective standards and reaches out to employers and employees through technical assistance and consultation programs. Some OSHA regulations contain standards related to hazardous materials handling, including workplace conditions, employee protections requirements, first aid, and fire protection. The regulations in 29 CFR et seq. include the following:

- Part 1910.38 requires facilities to have an emergency action plan to ensure the safe response to emergencies.
- Part 1910.119 contains requirements for preventing or minimizing the consequences of catastrophic releases of toxic, reactive, flammable, or explosive chemicals, which may result in toxic, fire, or explosion hazards.
- Part 1910.1200 ensures that the hazards of all chemicals produced or imported are classified, and that information concerning the classified hazards is transmitted to employers and employees. The transmittal of information is to be accomplished by means of comprehensive hazard communication programs, which are to include container labeling and other forms of warning, safety data sheets, and employee training.

3.7.3.2 State

Division of Oil, Gas, and Geothermal Resources

All California oil and gas wells (development and prospect wells), enhanced-recovery wells, water-disposal wells, service wells (i.e., structure, observation, temperature observation wells), core-holes, and gas-storage wells, onshore and offshore (within 3 nautical miles of the coastline), located on state and private lands, are permitted, drilled, operated, maintained, plugged, and abandoned under requirements and procedures administered by the Department of Conservation's CalGEM.

Regulations pertaining to oil and natural gas production are summarized in the CalGEM Publication No. PRC10, *California Statutes and Regulations for Conservation of Oil, Gas, & Geothermal Resources*, dated January 2017. Regulations for the installation and abandonment of oil and natural gas wells are also in 14 CCR 1712 through 1724.10. Environmental protection regulations for oil and natural gas well installations, operations, and abandonments are in 14 CCR 1750 through 1789.

Additionally, CalGEM publishes instruction manuals related to the oil drilling. Instruction Manual M06 pertains to the testing of oil and gas wells and explains the formation tester

mechanism, engineering principles, testing methods, and result analyses. Instruction Manual M07 pertains to blowout prevention equipment (BOPE) and explains the functions and operating characteristics of BOPE for oil, gas, and geothermal wells drilled in California.

CalGEM requires written approval prior to changing the condition of any well (e.g., making an "idle" well "active," or plugging and abandoning a well). For new wells or alteration of existing wells, approval depends on protection of subsurface hydrocarbons and fresh waters; protection of the environment; utilization of adequate BOPE; and utilizing approved drilling and cementing techniques.

California Pipeline Safety Act of 1981

The California Pipeline Safety Act of 1981, codified in Chapter 5.5, Sections 50001–51298.5, applies to pipelines that carry hazardous liquids (e.g., crude oil) and authorizes the State Fire Marshal to implement the federal Hazardous Liquid Pipeline Safety Act, as summarized above. This act imposes additional specific safety requirements on intrastate pipelines carrying hazardous liquids, including a time schedule for conformance to federal regulations, hydrostatic testing requirements, pipeline maps, contingency plans, and pipeline incident reporting.

NPDES Construction General Permit

The National Pollutant and Discharge Elimination System (NPDES) Construction General Permit is applicable to this program. Details of the Construction General Permit are provided in Section 3.5, *Geology, Soils, and Paleontological Resources*, which describes the required SWPPP and BMPs designed to control and prevent the release of sediments and pollutants into water ways.

Hazardous Materials Release Response Plans and Inventory Act

The Hazardous Materials Release Response Plans and Inventory Act of 1985, codified in Health and Safety Code, Sections 25500 et seq., also known as the Business Plan Act, requires businesses using hazardous materials to prepare a Hazardous Materials Business Plan (HMBP) that describes their facilities, inventories, emergency response plans, and training programs. HMBPs contain basic information on the location, type, quantity, and health risks of hazardous materials stored, used, or disposed. This code and the related regulations in 19 California Code of Regulations (CCR) Sections 2620 et seq. require local governments to regulate local business storage of hazardous materials in excess of certain quantities. The law also requires that entities storing hazardous materials be prepared to respond to releases. Those using and storing hazardous materials are required to submit a HMBP to their local Certified Unified Program Agency (CUPA) and to report releases to their CUPA and the State Office of Emergency Services. The California Office of Emergency Services is responsible for implementing the accident prevention and emergency response programs established under the Act and implementing regulations.

Hazardous Waste Control Act

The Hazardous Waste Control Act of 1972, codified in Health and Safety Code Sections 25100 et seq., created the state hazardous waste management program, which is similar to but more stringent than the federal RCRA program. The Act is implemented by regulations contained in CCR Title 26, which describes the following required aspects for the proper management of

hazardous waste: identification and classification; generation and transportation; design and permitting of recycling treatment, storage and disposal facilities; operation of facilities and staff training; and closure of facilities and liability requirements. These regulations list more than 800 materials that may be hazardous and establish criteria for identifying, packaging, and disposing of such waste. Under the Hazardous Waste Control Act and Title 26, the generator of hazardous waste must complete a manifest that accompanies the waste from generator to transporter to the ultimate disposal location. Copies of the manifest must be filed with the DTSC.

Unified Hazardous Waste and Hazardous Materials Management Regulatory Program

The Unified Hazardous Waste and Hazardous Materials Management Regulatory Program (Unified Program), codified in Health and Safety Code Sections 25404 et seq., requires the administrative consolidation of six hazardous materials and waste programs (Program Elements) under one agency, a CUPA. The following Program Elements are consolidated under the Unified Program:

- Hazardous Waste Generator and On-Site Hazardous Waste Treatment Programs (a.k.a. Tiered Permitting);
- Aboveground Petroleum Storage Tanks and Spill Prevention Control and Countermeasure Plans (SPCCs);
- Hazardous Materials Release Response Plans and Inventory Program (a.k.a. Hazardous Materials Disclosure or "Community-Right-To-Know");
- California Accidental Release Prevention Program;
- Underground Storage Tank (UST) Program; and
- Uniform Fire Code Plans and Inventory Requirements.

The Unified Program is intended to provide relief to businesses complying with the overlapping and sometimes conflicting requirements of formerly independently managed programs. The Unified Program is implemented at the local government level by CUPAs. Most CUPAs have been established as a function of a local environmental health or fire department. Within Seal Beach, the CUPA is the Orange County Environmental Health Division. Within Long Beach, the CUPA is the Long Beach/Signal Hill Joint Powers Authority.

California Occupational Safety and Health Act

The California Occupational Safety and Health Act of 1973, codified in California Labor Code, Sections 6300 et seq., addresses California employee working conditions, enables the enforcement of workplace standards, and provides for advancements in the field of occupational health and safety. The act also created the California Occupational Safety and Health Administration (Cal OSHA), the primary agency responsible for worker safety in the handling and use of chemicals in the workplace. Cal OSHA's standards are generally more stringent than federal regulations. Under Cal OSHA standards, the employer is required to monitor worker exposure to listed hazardous substances and notify workers of exposure (8 CCR Sections 337–340). The regulations specify requirements for employee training, availability of safety equipment, accident-prevention programs, and hazardous substance exposure warnings.

License to Transport Hazardous Materials

A valid Hazardous Materials Transportation License, issued by the California Highway Patrol, is required by the State of California Vehicle Code Section 32000.5 for transportation of hazardous materials shipments for which the display of placards is required by state regulations; or hazardous materials shipments of more than 500 pounds, which would require placards if shipping greater amounts in the same manner.

Additional requirements on the transportation of explosives, inhalation hazards, and radioactive materials are enforced by the California Highway Patrol under the authority of the State Vehicle Code Sections 32100–33002. Transportation of explosives generally requires consistency with additional rules and regulations for routing, safe stopping distances, and inspection stops (Title 14, CCR, Chapter 6, Article 1, Sections 1150–1152.10). Inhalation hazards face similar, more restrictive rules and regulations (Title 13, CCR, Chapter 6, Article 2.5, Sections 1157–1157.8).

Utility Notification Requirements

The regulations in 8 CCR Section 1541 require excavators to determine the approximate locations of subsurface installations, such as sewer, telephone, fuel, electric, and water lines (or any other subsurface installations that may reasonably be encountered during excavation work) prior to opening an excavation. The California Government Code (Sections 4216 et seq.) requires owners and operators of underground utilities to become members of and participate in a regional notification center. According to Section 4216.1, operators of subsurface installations who are members of, participate in, and share in the costs of a regional notification center, such as Underground Services Alert of Southern California, more commonly referred to as DigAlert, are in compliance with this section of the code. DigAlert receives planned excavation reports from public and private excavators and transmits those reports to all participating members that may have underground facilities at the location of excavation. Members will mark or stake their facilities, provide information, or give clearance to dig.

Hazardous Materials Storage and Handling

The California Fire Code (Chapter 27) and 24 CCR, Part 9, Sections 2700 et seq. includes specific requirements for the safe storage and handling of hazardous materials. These requirements reduce the potential for a release of hazardous materials and for mixing of incompatible chemicals, and specify the following specific design features to reduce the potential for a release of hazardous materials that could affect public health or the environment:

- Separation of incompatible materials with a noncombustible partition, or appropriate distance separation;
- Spill control in all storage, handling, and dispensing areas; or
- Separate secondary containment for each chemical storage system. The secondary containment must hold the entire contents of the tank, plus the volume of water needed to supply the fire suppression system for a period of 20 minutes in the event of a catastrophic spill.

California Fire Code (Chapter 14) addresses fire safety during construction and demolition and includes requirements for smoking, waste disposal, cutting and welding, fire protection equipment, fire reporting, access for firefighting.

Screening Levels for Hazardous Materials in Soil, Soil Gas, or Groundwater

The USEPA Regional Screening Levels (RSLs)[6] and San Francisco Bay Area RWQCB ESLs[7] are guidelines used to evaluate the potential risk associated with chemicals found in soil or groundwater where a release of hazardous materials has occurred. Screening levels have been established for both residential and commercial/industrial land uses, and for construction workers. Residential screening levels are the most restrictive; soil with chemical concentrations below these levels generally would not require remediation and would be suitable for unrestricted uses if disposed of off-site. Commercial/industrial screening levels are generally less restrictive than residential screening levels because they are based on potential worker exposure to hazardous materials in the soil (and these are generally less than residential exposures). Screening levels for construction workers are also less restrictive than for commercial/industrial workers because construction workers are only exposed to the chemical of concern during the duration of construction, while industrial workers are assumed to be exposed over a working lifetime.

Hazardous Waste Levels in Soil or Groundwater

TTLCs and Soluble Threshold Limit Concentrations (STLCs) are chemical-specific concentrations used to define whether a material is a hazardous, designated, or nonhazardous waste. TTLCs and STLCs are listed in CCR Title 22, Chapter 11, Article 3, Section 66261. TTLCs and STLCs are used as acceptance criteria for landfills. For example, waste materials with chemical concentrations above TTLCs or STLCs must be sent to Class I disposal facilities, may be sent to Class II disposal facilities depending on the waste material, and may not be sent to Class III disposal facilities.

Screening Levels for NORM

There currently exist no federal or California regulations that specifically address the handling and disposal of oil-field NORM wastes (USGS 1999). Texas, Louisiana, New Mexico, and Mississippi have enacted specific NORM regulations; NORM regulations or modifications to general radiation protection statutes are under consideration in California; however, McKittrick Landfill is permitted by California to accept NORM waste. Its Waste Discharge Requirements permit it to accept radioactive materials that do not requiring federal or state license and regulation, which includes unregulated low-level radioactive materials such as NORM (Kern County 2013). Materials with NORM at a 13 microroentgens per hour (µR/hr) readings or higher are considered to be NORM (Spec Services 2017).

[6] RSLs were previously referred to as Preliminary Remediation Goals (PRG), cited in older investigation reports.

[7] Although promulgated by the San Francisco Bay Area RWQCB, ESLs are commonly used by regulatory agencies throughout the state to screen analytical results and assess whether further action is needed.

3.7.3.3 Local

Coastal Development Permit (CDP) 9-18-0395 Special Condition 19

The application for CDP 9-18-0395 was filed by Beach Oil Minerals (BOM) and the Los Cerritos Wetlands Authority (LCWA) for this project on November 11, 2018. The CCC staff recommended issuance of the permit with a number of Special Conditions, including Special Condition 19. Special Condition 19 requires BOM to revise its existing SPCC to include "a quantitative risk assessment of an oil spill, demonstration that proposed prevention and response measures address the quantified risk, measures to maximize containment for all tanks, evidence of financial responsibility to clean-up an oil spill and additional prevention measures related to monitoring, testing, and training." The revisions to the SPCC would be required because of the changes to the site operations, and would include a comprehensive risk assessment to fully assess the potential of an oil spill and ensure that proposed measures are adequate to address the worst case discharge scenario. Implementation of this requirement to revise the SPCC would protect coastal resources by updating the spill containment and response methods for the changes to the current oil production operations. In particular, the revisions would ensure that spill response measures would be adequately sized to respond to a worst-case spill scenario.

Orange County Drainage Area Management Plan (DAMP) and Orange County MS4 Permit

The Orange County Drainage Area Management Plan (DAMP), is the principal policy, programmatic guidance, and planning document for the Orange County Stormwater Program, a municipal regulatory compliance initiative focused on the management and protection of Orange County's streams, rivers, creeks and coastal waters. The participants in this program include the City of Seal Beach. The stormwater program was initiated in 1990 as a cooperative local government response to requirements stemming from the Clean Water Act regulations and the NPDES permitting program. In response to those regulations, the County of Orange, the Orange County Flood Control District and the incorporated cities of Orange County (collectively referred to as Permittees) have obtained, renewed and complied with NPDES Stormwater Permits from the Santa Ana and San Diego Regional Water Quality Control Boards. For the Seal Beach area, the current permit is R8-2009-0030 NPDES No. CAS618030, as amended by Order No. R8-2010-0062.

The NPDES Permit includes (1) a requirement to effectively prohibit non-storm water discharges into municipal storm sewers; and (2) controls to reduce the discharge of pollutants from municipal storm drains to the maximum extent practicable, including management practices, control techniques and system, design and engineering methods, and such other provisions as the Administrator or the state determines appropriate for the control of such pollutants. Details of the DAMP are provided in Section 3.5, *Geology, Soils, and Paleontological Resources*.

City of Seal Beach Municipal Code

Chapter 5.55 Oil and Gas Production

5.55.090 Operation Standards. Drilling shall be conducted in accordance with the following operation standards:

I. The operation of any oil and gas well and production therefrom drilled pursuant to an oil/gas production permit shall be in accordance with the rules and regulations of the Division of Oil and Gas of the state, or any successor agency or body thereto.

5.55.095 Additional Standards. No oil/gas production permit shall be issued where all or any part of the proposed drill site is located within the city without the following additional standards being required and made a part and condition of such permit; provided, however, that the city council may in the event the proposed drill site is more than 1,000 feet from any current or proposed residential or commercial area, waive any or all of such following standards upon a finding that the standards would impose a hardship on the permittee and would not serve to protect the citizens of the city. The city council may require the following additional standards to be made a condition of any permit for wells drilled from a site outside the city, if such drill site is within 1,000 feet of any developed residential or commercial area.

F. Within 90 days after the completion of drilling operations or abandonment of further drilling, the derrick and all drilling equipment, including temporary tanks, shall be removed from the drill site. Well abandonment shall be in accordance with the requirements of the Division of Oil and Gas of the state. Upon such well abandonment, the permittee shall restore the property as nearly as possible to its original condition and shall remove all concrete foundations, oil-soaked soil, and debris; all holes or depressions shall be filled to the natural surface.

J. All drilling and production equipment installed or operated upon any controlled drill site shall be so constructed, operated, and maintained that no noise, vibration, odor, or other harmful or annoying substances of effects therefrom which can be eliminated or diminished by the use of modern and approved types of equipment silencers or greater care shall ever be permitted to result from operations on any controlled drill site to the injury or annoyance of persons in the vicinity of such controlled drill site. Proven technological and mechanical improvements in methods of drilling and production and in the type of equipment used therefore shall be adopted from time to time, as the same become available if the use of such equipment, improvements, and methods will reduce noise, vibration, odors, or the harmful effects of annoying substances. The use of equipment in any controlled drill site, which equipment causes noise or vibration, shall at all times be subject to the approval of the city council, and the city council may amend any permit and require the permittee to abate any noise or vibration which constitutes a nuisance and is detrimental to persons or property in the vicinity where such equipment is being operated.

M. No earthen sump shall be used or maintained on any controlled drill site, and all waste water, mud, oil, or other waste products from drilling and producing operations shall be accumulated in steel tanks, and such tanks shall not be permitted to overflow at any time.

Chapter 9.20 Storm Water Management Program

9.20.015 Controls for Water Quality Management.

A. New Development and Significant Redevelopment.

1. All new development and significant redevelopment within the city shall be undertaken in accordance with:

   a. The DAMP, including without limitation the development project guidance.

   b. Any conditions and requirements established by the responsible city department, which are reasonably related to the reduction or elimination of pollutants in storm water runoff from the project site.

2. Prior to the issuance by the city of a grading permit, building permit or nonresidential plumbing permit for any new development or significant redevelopment, the responsible city department shall review the project plans and impose terms, conditions and requirements on the project in accordance with this chapter.

Chapter 9.50 Grading

9.50.015 Grading Permit Requirement. No person shall perform any of the following activities without first obtaining from the city engineer, and maintaining in full force and effect, a grading permit:

A. Grading or land disturbing or land filling on existing grade that is preparatory to grading.

B. Clearing, brushing and grubbing.

C. Construction of pavement surfacing in excess of 2,499 square feet on existing grade for the purpose of a road or parking lot. This provision does not include resurfacing or maintenance of existing paved surfaces.

D. Alteration of an existing watercourse, channel or revetment by means of excavation, fill placement or installation of rock protection or structural improvements. (Ord. 1515)

Chapter 9.60 Building Code

Section 101 General

101.4.1 Building Code. The provisions of the California Building Code as adopted and amended by City of Seal Beach shall apply to all buildings and structures other than those meeting the scoping limitations contained in the California Residential Code.

101.4.7 Fire Code. The mandatory provisions of the California Fire Code as adopted and amended by City of Seal Beach shall apply to all new and existing buildings, structures and premises.

City of Seal Beach General Plan

Topic 2: Hazardous Materials

Policy 2S. Minimize changes in hydrology and pollutant loading, require incorporation of control, including structural and non-structural BMPs to mitigate the projected increases in pollutant loads and flows, ensure that post-development runoff rates and velocities from a site have no significant adverse impact on downstream erosion and stream habitat,

minimize the quantity of storm water directed to impermeable surfaces and the MS4s, and maximize the percentage of permeable surfaces to allow more percolation of storm water into the ground.

Policy 2T. Preserve wetlands, riparian corridors, and buffer zones and establish reasonable limits on the clearing of vegetation from the project site.

Policy 2U. Encourage the use of water quality wetlands, biofiltration swales, watershed-scale retrofits, etc. where such measures are likely to be effective and technically and economically feasible.

Policy 2V. Provide for appropriate permanent measures to reduce storm water pollutant loads in storm water from the development site.

Long Beach Storm Water Management Program

This City of Long Beach Program reinforces the Construction General Permit Stormwater Pollution Prevention Plan (SWPPP) requirements for projects disturbing more than an acre, and lists minimum requirements to be met at every construction site regardless of the construction site's size. The Long Beach Storm Water Management Program is noted but discussed in detail in Section 3.5.3, *Regulatory Framework*, in Section 3.5, *Geology, Soils, and Paleontological Resources*, of this PEIR.

Long Beach MS4 Permit

The City of Long Beach is covered under the Long Beach MS4 Permit: Waste Discharge Requirements for Municipal Separate Storm Sewer System Discharges from the City of Long Beach; Order No. R4-2014-0024. The Long Beach MS4 Permit is discussed in detail in Section 3.5, *Geology, Soils, and Paleontological Resources.*

Long Beach Low-Impact Development Manual

The City adopted low-impact development regulations for the purpose of encouraging the beneficial use of rainwater and urban runoff; reducing stormwater/urban runoff while improving water quality; reducing off-site runoff and providing increased groundwater recharge; reducing erosion and hydrologic impacts downstream; and enhancing the recreational and aesthetic values in our communities. The Low-Impact Development Manual is discussed in Section 3.5, *Geology, Soils, and Paleontological Resources*.

Adopted Southeast Area Development and Improvement Plan and Proposed Southeast Area Specific Plan 2060

The individual sites are located in the Southeast Area Development and Improvement Plan (SEADIP) area. This plan is in the process of revision. In July 2016, the City of Long Beach circulated a draft of the Southeast Area Specific Plan (SEASP) 2060, and includes re-designating land uses for the program area. The SEADIP does not contain standards relative to hazardous materials use or storage; however, the SEASP 2060 contains standards relevant to hazards and hazardous materials which apply to this proposed program. Chapter 5, Section 5.10, Wetland Buffers, and Chapter 8, Section 8.1.2, Storm Drains, of the SEASP 2060 are discussed in

Section 3.5.3. Chapter 5, Section 5.11, Coastal Act Compliance, has not formerly been addressed and is explained below.

Chapter 5, Development Standards, Section 5.11, Coastal Act Compliance—Protection from Oil Spills or Hazardous Substances (Section 30232)

The SEASP 2060 allows for ongoing oil drilling and production and consolidation of wells that comply with Title 12, Oil and Gas Production, of the LBMC and also California Coastal Act Section 30262, Oil and Gas Development. These regulations include provisions that help to protect against the spillage of crude oil, gas, petroleum products, or hazardous substances in relation to any development or transportation of such materials as well as requiring effective containment and cleanup facilities and procedures for accidental spills that do occur.

Long Beach Municipal Code

Title 8. Health and Safety

Chapter 8.86: Hazardous Materials Release Response Plans and Inventory. This chapter designates the Long Beach/Signal Hill CUPA as the local agency responsible for enforcing regulations regarding Hazardous Materials Release Response Plans within the City.

Chapter 8.87: Hazardous Waste Control. This chapter designates the Long Beach/Signal Hill CUPA as the local agency responsible for enforcing regulations regarding hazardous waste control within the City.

Chapter 8.88: Hazardous Materials Cleanup. This chapter reinforces the requirements for site characterization and remediation for hazardous materials spills, and requires characterization and remediation permits be acquired from the Health Officer of the City of Long Beach and any deputy Health Officer or designee. The Health Officer shall determine the compliance with the hazardous waste control laws by responsible parties.

Chapter 8.96: Storm Water and Runoff Pollution Control. This chapter reinforces the requirements of the Federal Clean Water Act and the State Porter Cologne Act (including Construction General Permit requirements) within the City.

Title 12. Oil Production Regulations

Chapter 12.12.050: Drilling Permit—Application Contents. This chapter describes the requirements for oil well drilling permits, which include setbacks from specific facilities, drilling procedures, operations procedures, and a certification that the means or method by which liquid spills will be removed from diked areas or catchment basins will conform to the regulations of the DOGGR.[8]

Chapter 12.16.050: Consolidated Drill Site Plans. This chapter describes locations exemption to encourage the consolidation of oil drilling surface facilities to make additional land available for non-oil production land uses.

Chapter 12.36.010: Abandonment Procedure. This chapter describes the permit requirements for well abandonment, including compliance with DOGGR[9] regulations, the

[8] Effective January 1, 2020, DOGGR was renamed to CalGEM.

[9] Effective January 1, 2020, DOGGR was renamed to CalGEM.

removal of all unused equipment, the cleaning out of all sumps, cellars, and ditches of all oil, oil residue, drilling fluid, and rubbish removed therefrom and the sumps, cellars, and ditches leveled or filled, all in accordance with the DOGGR[10] regulations. Where such sumps, cellars, and ditches are lined with concrete, permittee shall cause the walls and bottoms to be broken up and removed and shall cause the premises to be cleaned and graded and left entirely free of oil, rotary mud, oil-soaked earth, asphalt, tar, concrete, litter, debris, and other substances, and left in a clean and neat condition, all to the satisfaction of the DOGGR.[11]

Chapter 12.12.100: Special conditions—Petroleum operations.

A. Storage of Equipment. All equipment or materials related to petroleum operations shall be stored within the fenced area of the site. There shall be no storage of material, equipment, machinery or vehicles which is either not intended for prompt use in connection with petroleum operations at the site or for the convenience of personnel at the site.

B. Removal of Petroleum. When pipeline connections are available, petroleum produced at the well site may be removed by underground pipeline or pipelines. Petroleum produced at well sites where pipeline connections are not available shall be removed by truck. Such trucking shall be limited to Monday through Saturday, excluding legal holidays, between the hours of seven-thirty a.m. and six-thirty p.m.

D. Tanks. The number of tanks shall be kept to a minimum and new tanks shall be installed so that the height of the tank does not exceed sixteen (16) feet above grade.

E. Process Operations. The only process operations permitted at the well site is the dehydration of crude oil and wet gas produced from the well and those process operations required for injection purposes unless otherwise required by the State Division of Oil and Gas.

F. Flaring or Venting. Gas shall not be vented to the atmosphere, nor burned by open flame, unless prior approval therefor is obtained from the State Division of Oil and Gas.

H. Fencing. For renewal of well permits for wells existing prior to July 1, 1980, such wells shall be enclosed with a chain-link fence in accordance with Section 12.28.030 or with approved alternate fencing prior to renewal of a well permit. For well permits issued subsequent to July 1, 1980, the chain-link fence shall have opaque material of a neutral color approved by the Director inserted between the chain links. The Director may approve a fence of alternative material more effective in concealing the oil operations provided that it is compatible with the surrounding residential neighborhood. All existing masonry walls or alternate fencing that were constructed as a condition for drill permits shall remain in place. Fencing shall not be less than six feet (6') in height and shall be maintained in a neat and orderly condition.

J. Additional Requirements for Well Sites in the Coastal Zone. In recognition of the fact that the Coastal Zone is a unique asset of the State and in order to preserve and enhance the quality of this asset, the requirements set forth in these regulations for drilling and redrilling operations relating to fencing, landscaping and irrigation, and off-site improvements, Subsections C, D and E of this Section, shall be implemented at all well sites located in nonindustrial zones of the Coastal Zone by January 1, 1981. If permittees can show good cause why such improvement cannot be completed by January 1, 1981, then extensions of up to six (6) months may be granted to comply with these requirements, but in no event will extensions be granted past June 30, 1981. This chapter describes the permit requirements for well abandonment, including compliance with

[10] Effective January 1, 2020, DOGGR was renamed to CalGEM.

[11] Effective January 1, 2020, DOGGR was renamed to CalGEM.

DOGGR[12] regulations, the removal of all unused equipment, the cleaning out of all sumps, cellars, and ditches of all oil, oil residue, drilling fluid, and rubbish removed therefrom and the sumps, cellars, and ditches leveled or filled, all in accordance with the DOGGR[13] regulations. Where such sumps, cellars, and ditches are lined with concrete, permittee shall cause the walls and bottoms to be broken up and removed and shall cause the premises to be cleaned and graded and left entirely free of oil, rotary mud, oil-soaked earth, asphalt, tar, concrete, litter, debris, and other substances, and left in a clean and neat condition, all to the satisfaction of the DOGGR. [14]

City of Long Beach General Plan

The City of Long Beach General Plan contains a Public Safety Element and Conservation Element, which are applicable to this proposed program.

Public Safety Element

Transport of Hazardous Materials

The California Department of Transportation (Caltrans) sets forth regulations and restrictions upon the transporting of dangerous fluids, chemicals, or explosives. In the City of Long Beach, designated truck routes are established. These routes are delineated on Plate 13, along with freeways and railroads. Aside from the routine safety precautions, the City Fire and Police Departments are alerted when shipments of particularly dangerous materials are due to pass through the City of Long Beach. For the safety of the workmen, Longshoremen and Teamster Unions also require shippers and transporters of dangerous materials to take precautionary measures.

In terms of public safety, the areas immediately adjacent to designated truck routes should be allocated for low occupancy land uses, thereby exposing a fewer number of people to potential risk. The difficulty, however, is that truck routes are generally major arterials, offering ease of access for commercial and multi-family residential uses. Through physical planning and spatial design, however, an effort should be made to buffer all uses from passing dangerous materials by way of set-backs or natural barriers.

"In 1967, Caltrans, the County of Los Angeles, and the California Highway Patrol negotiated with the Pacific and General Telephone Companies for the installation of call-boxes on approximately 310 miles of Los Angeles County freeways." The Long Beach Freeway south of Anaheim Street, however, is not state maintained and thus was not equipped with emergency phones. As this portion of the freeway is designated as Harbor District responsibility, the area is patrolled rather regularly by Harbor Department personnel. Because of the close observation of the area, accidents are likely to be detected rather quickly. Nonetheless, a number of recent freeway accidents have occurred, involving such things as gasoline carriers and the potential hazard may justify the installation of phones along this stretch of the freeway from Anaheim Street to the Harbor area. A cost benefit analysis of freeway phones installations in this area should be further examined.

[12] Effective January 1, 2020, DOGGR was renamed to CalGEM.
[13] Effective January 1, 2020, DOGGR was renamed to CalGEM.
[14] Effective January 1, 2020, DOGGR was renamed to CalGEM.

Advance Planning Recommendations

- New development should be responsive to seismic considerations (see Seismic Safety Element).

Conservation Element

Soil Management Goals

- To minimize those activities which will have a critical or detrimental effect on geologically unstable areas and soils subject to erosion.
- To continue to monitor areas subject to siltation and deposition of soils which could have a detrimental effect upon water quality and the marine biosphere.

3.7.4 Significance Thresholds and Methodology

This section describes the impact analysis relating to hazards and hazardous materials for the proposed program. It describes the methods and applicable thresholds used to determine the impacts of the proposed program.

3.7.4.1 Significance Thresholds

For the purposes of this Program Environmental Impact Report (PEIR) and consistency with Appendix G of the *CEQA Guidelines*, the proposed program would have a significant impact on hazards and hazardous materials if it would:

a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials;

b. 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;

c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school;

d. Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment;

e. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area;

f. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan; or

g. Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires.

As detailed in the NOP/IS (refer to Appendix A of this PEIR), the proposed program would result in less than significant impacts to threshold “e” and no impacts to threshold “f.” Although not required, evaluation of the proposed program’s impact to thresholds “e” and “f” were conducted in this section.

3.7.4.2 Methodology

This impact section assesses potential impacts related to hazards and hazardous materials based on the potential for the proposed program to adversely change those conditions or expose facilities or people or the environment to adverse impacts, using existing site conditions as a baseline for comparison. Information for this assessment of impacts relative to hazards and hazardous materials is based on a review of literature research (Phase I assessments, Phase II investigations, and cleanup actions), information from regulatory agency databases, and the General Plans for the cities of Seal Beach and Long Beach. This information was used to identify potential impacts to workers, the public, or the environment.

For purposes of this analysis, construction activities would include the excavation, grading, and movement of fill and soil to restore habitat; removal of some existing oil production facilities (wells, piping, and associated infrastructure); and construction of a visitor center, trails, and access roads. These construction activities would occur at various times spread out over time across the entire program area. Operations activities would include the operational phases of the restored habitat, visitor center, and trails. In addition, the operations activities include the post-treatment monitoring activities conducted to verify that habitat restoration objectives have been achieved.

The plugging and relocation of oil wells and associated infrastructure and impacts associated with worst-case spill scenarios on the Northern and Southern Synergy Oil Field sites, Long Beach City property site, and the Pumpkin Patch site were evaluated in the Los Cerritos Wetlands Oil Consolidation and Restoration Project EIR (State Clearinghouse No. 2016041083), and are not repeated or analyzed within this PEIR.

The plugging and relocation of oil wells and associated infrastructure on the Hellman Retained site, the Isthmus LCWA site, or the Alamitos Bay Partners site are not proposed at this time, but are anticipated to occur in the long term when production falls to below economic levels. As proposed in the Termination of Oil and Gas Lease and Grant of Easement agreement between Signal Hill Petroleum Inc., and the LCWA, Signal Hill Petroleum Inc. would relocate or modify aboveground pipelines and utilities on the Central LCWA site and remediate soils that have been impacted by oil operations to accommodate the restoration. Thus, restoration in the near term would include pipeline relocation, but not well relocation. Additionally, outside of this agreement, existing Signal Hill Petroleum Inc. wells would be protected in place by proposing to raise the wells. When the owner/operators of those oil operations within the program area elect to change or close those operations, the changes would be analyzed under separate CEQA documents. The change or closure procedures and impacts analysis would be similar to those described and analyzed within this PEIR.

The program would be regulated by the various laws, regulations, and policies summarized in the Regulatory Framework. Compliance by the proposed program with applicable federal, state, and local laws and regulations is assumed in this analysis, and local and state agencies would be expected to continue to enforce applicable requirements to the extent that they do so now. Note that compliance with many of the regulations are a condition of permit approvals.

A significant impact would occur if, after considering the program features described in Chapter 2, *Project Description*, of this PEIR, and the required compliance with regulatory requirements, a significant impact would still occur. For those impacts considered to be significant, mitigation measures are proposed to reduce the identified impacts.

As stated in Chapter 1, *Introduction*, on March 8, 2019, the Los Cerritos Wetlands Authority sent a Notice of Preparation to responsible, trustee, and federal agencies, as well as to organizations, and individuals potentially interested in the proposed program to identify the relevant environmental issues that should be addressed in the PEIR. Issues related to hazards and hazardous materials were identified.

3.7.5 Program Impacts and Mitigation Measures

Impact HAZ-1: The proposed program would result in a significant impact if the proposed program would create a significant hazard to the public or the environment through the routine transport, use, or disposal, or reasonable foreseeable upset and accident conditions that release hazardous materials.

Impacts relative to encountering contaminated materials in fill, soil, and/or groundwater are analyzed further below in Impact HAZ-3.

Construction

Overall Construction Activities

Petroleum products, such as gasoline, diesel fuel, lubricants, and cleaning solvents would be utilized to fuel and maintain construction vehicles and equipment for construction of all program components. Additionally, coatings, adhesives, and paints could be used and handled for construction of the visitor center. Despite the numerous protective and preventive measures, the routine use or reasonably foreseeable upset and accident conditions for the various hazardous materials that would be used during construction activities could result in inadvertent releases of small quantities of hazardous materials, which could adversely affect construction workers or the environment.

Construction activities are required to comply with numerous hazardous materials and storm water regulations designed to ensure that hazardous materials are transported, used, stored, and disposed of in a safe manner to protect worker safety, to reduce the potential for a release of construction-related fuels or other hazardous materials to affect storm water and downstream receiving water bodies, and to respond to accidental spills, if any. The numerous regulations discussed in Section 3.7.3, *Regulatory Framework*, such as RCRA, HMBP, the Aboveground Petroleum Storage Act, the California Fire Code, and others would require measures for the safe transportation, storage, handling, and disposal of hazardous materials used for construction, including appropriate containers, secondary containment to contain a potential release. In addition, and as discussed in Section 3.5, *Geology, Soil, and Paleontological Resources*, of this PEIR, construction contractors would be required to prepare a SWPPP for construction activities according to the NPDES General Construction Permit requirements. The SWPPP would list the hazardous materials (including petroleum products) proposed for use during construction and

describe spill prevention measures, equipment inspections, equipment and fuel storage, and protocols for responding immediately to spills. With compliance with existing regulations, properly storing any materials on-site, and implementing proper containment, the impacts would be reduced to less than significant.

Well Plugging and Abandonment

The proposed program includes the phased plugging and abandonment of existing oil wells within the program area in the long term. Because there are no agreements in place for oil well removal between the oil operators and LCWA, it is expected that overall level of oil and natural gas production would continue until production decreases to below economically viable levels, after which oil production would stop. A well is plugged by placing cement in the well-bore or casing at certain intervals. The purpose of the cement is to seal the wellbore or casing and prevent fluid from migrating between underground rock layers. Cement plugs are required to be placed across the oil or gas reservoir, across the base-of-fresh-water, and at the surface. Other cement plugs may be required at the bottom of a string of open casing, on top of tools that may become stuck down hole, on top of cut casing, or anywhere else where a cement plug may be needed. Also, the hole is filled with drilling mud to help prevent the migration of fluids.

Consistent with Public Resources Code (PRC) Section 3229, Division 3, before commencing any work to abandon any well, the operator shall file with CalGEM a written notice of intention to abandon the well, which may not proceed until approval is given by CalGEM. In addition to CalGEM regulations regarding the plugging and abandonment of oil wells, the operator is also required to comply with the California Department of Health Services regulations in Section 30346 of CCR Title 17, Division 1, Chapter 5, Subchapter 4, Group 3, Article 7. With compliance with existing regulations, impacts from well abandonment would be reduced to less than significant.

Removal of Oil Pipelines

Pipelines would be removed from service, cleaned, and disposed of per CalGEM and DTSC requirements. The pipelines to be demolished would be marked in the field and permanently isolated with blind flanges from sections of the system that would continue operating. All removed pipelines would be tested for NORM, and any NORM pipeline identified would be segregated from other materials for handling and disposal at the McKittrick Landfill in McKittrick, California, which is permitted to accept NORM materials. Any fluids within the pipelines would be flushed into vacuum trucks. The flushing areas where the pipes would be remediated would have spill prevention methods implemented (temporary containment, plastic sheeting, containers, etc.) to contain residual fluid. Once the aboveground pipelines are emptied of residual fluids, they would be cut into smaller sections for recycling or disposal. Spill containment equipment would be placed at all the cut points and the pipes will be capped prior to removal. Plastic tarps would be laid beneath the pipelines prior to removal to collect any pieces of the pipe that may be dislodged during the removal process to prevent them from falling into the wetlands. The pipe would be placed onto a flatbed truck and then hauled to on-site storage bins for subsequent removal off-site. With compliance with existing regulations, policies, and industry standards, and with utilization of adequate spill containment equipment and practices, potential impacts associated with pipeline removal due to leaked fluids would be reduced to less than significant.

Relocation of Oil Pipelines

In some cases (e.g., the oil well field on the Central LCWA site), removed oil pipelines would be replaced with relocated oil pipelines. Newly installed pipelines would be subject to federal regulations (49 CFR Part 192 and 49 CFR Part 195) that mandate hydrostatic testing of new, cathodically protected pipelines prior to placing the pipeline into operation. Such tests are designed to prove that the pipe, fittings, and weld sections would maintain mechanical integrity under pressure without failure or leakage.

Additionally, pipelines would be inspected in accordance with CalGEM regulations to ensure the ongoing integrity of the pipeline. Other inspection and maintenance of the connecting pipeline may include the use of pigs, which are devices inserted into the pipeline. Pigs would be used as needed to clean and/or inspect the connecting pipeline and "smart pigs" would be used to detect corrosion or other damage that has affected the wall thickness or shape of the pipe. Also, emergency isolation valves and shutdown instrumentation would be regularly tested for set points and functionality.

Further, "distributed strain and temperature sensing" fiber optic lines would be installed to detect leaks. This technology would be able to detect leaks immediately upon occurrence, and would also detect any soil disturbances in the line. Additionally, seismic accelerometers at the pipeline portions at the Central LCWA site would be installed. If a seismic event is detected, valves shut according to a timed sequence to prevent pressure surges.

New pipelines would be treated to decrease the potential for corrosion. All lines would have a baked-on external epoxy coating (fusion bonded epoxy) which would protect the outside carbon steel from corrosion. Field welds would have an epoxy coating at each seam. All lines with corrosive material (wet gas, oil gathering, and water lines) would have an internal epoxy coating. Welded field connections would be joined with a specially designed welding insert ensuring the corrosive fluid does not come in contact with bare carbon steel. All coatings would be visually inspected prior to installation and after any field welds.

In addition to the state of the art leak detection mechanisms, rigorous maintenance, and pipeline treatments, earthen berms would be installed around oil wells and pipelines and would be designed to contain the estimated spill volume in the unlikely event of a pipeline spill or rupture. With compliance with existing regulations and policies, and implementing proper containment, the impacts from operation of the pipeline due to a spill or rupture of the line would be reduced to less than significant.

Raising of Signal Hill Petroleum Central LCWA Wells

Signal Hill Petroleum has active production wells in the Central LCWA area. These wells would remain in production until production drops to uneconomic levels, after which they would be plugged and abandoned, as previously described. Until then, these wells would remain in production during implementation of restoration activities. However, the well pads are currently too low and would be inundated as a result of restoration activities. To avoid this, the well pads and well heads are proposed to be raised to a higher elevation. To raise the oil well pads, the wells would be temporarily taken out of production and all equipment would be removed from

each well (pumping units, concrete pads, electrical equipment, etc.). A temporary retrievable plug would be placed in each well and a casing riser would be installed. Once the well pad grading and construction are complete, the wells would go back into production.

The proposed program includes the ongoing operation of oil wells and pipelines, which would continue to be the responsibility of the well owners, in this case, Signal Hill Petroleum. As discussed above in Section 3.7.3, *Regulatory Framework*, *CalGEM*, there are numerous regulations for the design of oil extraction wells and wellheads. Changes to wellheads would continue to be under the regulatory oversight of CalGEM. In addition, note that Signal Hill Petroleum has committed to updating their Spill Prevention and Response Plan, which would include preventing spills during changes to wellheads. With compliance with existing regulations and policies, and the continued implementation of Signal Hill Petroleum's Spill Prevention and Response Plan, potential impacts associated with raising the Signal Hill Petroleum wells would be reduced to less than significant.

Operation

Restored Wetland Habitat

Upon completion of restoration activities, the operations would not use hazardous materials, resulting in no impact.

Oil Wells and Pipelines

The proposed program includes the ongoing operation of oil wells and pipelines, which would continue to be the responsibility of the well owners. As discussed above under Construction - Relocation of Oil Pipelines and in Section 3.7.3, *Regulatory Framework*, CalGEM, there are numerous regulations requiring maintenance and inspection of the oil extraction operations. The various oil extraction operations would continue to operate under the regulatory oversight of CalGEM. Note that Signal Hill Petroleum has committed to updating their Spill Prevention and Response Plan.

To further evaluate impacts under worst-case spill scenarios, the following discusses worst-case spill volumes, responses, and impacts by site and as a cumulative scenario.

The impacts associated with worst-case spill scenarios on the Northern and Southern Synergy Oil Field sites, Long Beach City Property site, and the Pumpkin Patch site were evaluated in the Los Cerritos Wetlands Oil Consolidation and Restoration Project EIR (State Clearinghouse No. 2016041083), and are not repeated or analyzed within this PEIR. The Alamitos Bay Partners site, the Isthmus Area, and Hellman Retained site have on-going oil production. Worst-case spill scenario information has not been provided for the Termo, Signal Hill Petroleum, and Hellman operations, respectively. However, the long-term plan is to continue oil production in each existing well until production becomes uneconomic, after which each well would be properly abandoned, as previously described. No new wells would be drilled and put into production, and thus there would be no changes to operation that would increase the risk of a spill over the existing conditions. Therefore, over time, the production of oil would decrease, which would reduce the potential for oil spills. The Central LCWA Site will have the well heads raised to

prevent the wells from being flooded as the wetlands are restored. However, similar to the other sites, no new wells would be drilled and put into production, and thus there would be no changes to operation that would increase the risk of a spill over the existing conditions. Therefore, over time, the production of oil would decrease, which would reduce the potential for oil spills.

Cumulative Worst Case

As discussed above, no new wells would be drilled and put into production for any of the sites, and thus there would be no cumulative changes to operation that would increase the risk of a spill over the existing conditions. Therefore, over time, the cumulative production of oil would decrease, which would reduce the potential for cumulative oil spills.

With compliance with existing regulations, potential impacts associated with oil pipeline removal due to leaked fluids would be reduced to less than significant.

General Office Building and Visitor Center

The visitor center would occasionally use small quantities of cleaning products and paints, solvents, and thinners for routine maintenance. As previously discussed, the HMBP would require the materials be stored and labeled in appropriate containers. Therefore, impacts related to hazardous materials routine use or accidental release during operation of the visitor center would be less than significant.

Mitigation Measure

No mitigation is required.

Significance after Mitigation

Less than Significant

Impact HAZ-2: The proposed program would result in a significant impact if the proposed program would emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.

There are no schools within one-quarter mile of the program area. Therefore, relative to proximity to schools, there would be no impact.

Mitigation Measure

No mitigation is required.

Significance after Mitigation

Less than Significant

Impact HAZ-3: The proposed program would result in a significant impact if the proposed program would be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment.

Construction

As discussed in Section 3.7.2, *Environmental Setting*, the program area has several individual sites listed on one or more hazardous materials lists for the presence of active, idle, or plugged oil wells; historical releases of contamination; and/or the presence of landfill materials. The restoration and construction activities could encounter hazardous materials associated with these sites, exposing workers or the environment to hazardous materials. Hazardous materials impacts associated with the plugging of oil wells, and the removal or relocation of oil pipelines is discussed above in Impact HAZ-1. Hazardous materials impacts associated with encountering contaminated fill, soil, and landfill materials are analyzed below.

Potential impacts from encountering contaminated fill, soil, and/or groundwater during restoration and construction activities on the Synergy Oil Field, Long Beach City Property, and Pumpkin Patch sites were evaluated in the Los Cerritos Wetlands Oil Consolidation and Restoration Project EIR (State Clearinghouse No. 2016041083). Potential contamination issues associated with the oil field operations on the other program area sites in the Central, Isthmus, and South Areas have not yet been investigated. Given the similar oil field land uses that include oil wells, sumps, pipelines, and storage tanks, restoration and construction activities are anticipated to encounter similar contamination in fill, soil, and groundwater that would consist of crude oil, its degradation byproducts, and metals. Potential contamination issues associated with the known landfills on the other program area sites in the Central, Isthmus, and South Areas have been investigated to some degree. Restoration and construction activities are anticipated to encounter contamination associated with those landfills that could include crude oil, its degradation byproducts, tank bottom sludge, and metals.

Impacts resulting from the potential release of or exposure to hazardous materials in fill, soil, landfilled materials, and/or groundwater would be reduced to a less-than-significant level with implementation of Mitigation Measures HAZ-1, Health and Safety Plan, and HAZ-2, Soil, Landfill Materials, and Groundwater Management Plan. Mitigation Measure HAZ-1 would require that construction contractors prepare a health and safety plan in accordance with Cal OSHA regulations. The plan would provide hazard recognition and monitoring information, specify personal protective equipment for workers, outline construction measures to reduce the potential for workers' exposures to hazardous materials in soil, landfill materials, and groundwater, and describe procedures for handling accidental hazardous materials releases and unanticipated contamination. Mitigation Measure HAZ-2 would require construction contractors to prepare and implement a Soil, Landfilled Materials, and Groundwater Management Plan in compliance with all relevant environmental regulations for the management and disposal of excavated fill, soil, and groundwater. The plan would include describing soil, landfilled materials, and groundwater testing procedures to identify the appropriate reuse and/or disposal options, the containers to be used to transport the materials, and the proposed recycling or disposal facilities along with each facilities acceptance criteria. With implementation of Mitigation Measures

HAZ-1 and HAZ-2, the potential for harmful exposure to hazardous materials present in soil, landfilled materials, or groundwater during construction would be reduced to a less-than-significant level.

For landfilled areas where the fill materials are inappropriate for a wetlands habitat, it may be necessary to remove some or all of the landfill materials. If determined necessary, this work would consist of the following phases: (1) remove the dry materials from the site and haul to a disposal facility (transfer station or landfill) depending on the acceptance criteria of the transfer station and landfills and (2) using excavation equipment to remove wet landfill materials so the water would be allowed to drain back to within the confines of the excavation. Any residual water brought to the surface would be contained for transfer to an on-site liquid storage Baker-type tank; the collected water would be sampled and subsequently disposed at an approved off-site facility. If necessary, the wet landfill materials would be allowed to drain on a rack in the excavation pit before being hauled to a disposal site.

Analytical testing of the materials to be removed would characterize the waste either as hazardous (Class I), designated (Class II), or nonhazardous (Class III), and identify the appropriate disposal location. Designated and nonhazardous waste would be hauled to a Class II or III disposal facility, and hazardous waste would be hauled to a Class I facility, likely the Kettleman Hills Landfill. With compliance with existing regulations, and with implementation of Mitigation Measures HAZ-1 and HAZ-2, the potential for harmful exposure to hazardous materials present in soil, landfilled materials, or groundwater during removal of the landfill would be reduced to less than significant with mitigation.

Operation

Once the construction activities have been completed, the hazardous materials sites issues described above would have been addressed. The proposed program would not use hazardous materials during operations. The ongoing operations of the oil wells and pipelines are regulated outside of the proposed program under CalGEM and other regulations. During operations, there would be no impact.

Mitigation Measures

Mitigation Measure HAZ-1: Health and Safety Plan. The contractor(s) shall prepare and implement site-specific Health and Safety Plans as required by and in accordance with 29 CFR 1910.120 to protect construction workers and the public during all excavation and grading activities. This Plan shall be submitted to LCWA, the Orange County Environmental Health Division (the CUPA for the City of Seal Beach area), or Long Beach/Signal Hill Joint Powers Authority (the CUPA for the Long Beach area), for review prior to commencement of construction. The Health and Safety Plans shall include, but are not limited to, the following elements:

- Designation of a trained, experienced site safety and health supervisor who has the responsibility and authority to develop and implement the site Health and Safety Plan;
- A summary of all potential risks to construction workers and maximum exposure limits for all known and reasonably foreseeable site chemicals;

- Specified personal protective equipment and decontamination procedures, if needed;
- Emergency procedures, including route to the nearest hospital; and
- Procedures to be followed in the event that evidence of potential soil or groundwater contamination (such as soil staining, noxious odors, debris or buried storage containers) is encountered. These procedures shall be in accordance with hazardous waste operations regulations and specifically include, but are not limited to, the following: immediately stopping work in the vicinity of the unknown hazardous materials release, notifying the LCWA, and the Orange County Environmental Health Division (the CUPA for the City of Seal Beach area), or the Long Beach/Signal Hill Joint Powers Authority (the CUPA for the Long Beach area), the LARWQCB, or CalGEM, as appropriate, and retaining a qualified environmental firm to perform sampling and remediation.

Mitigation Measure HAZ-2: Soil, Landfill Materials, and Groundwater Management Plan. In support of the Health and Safety Plan described in Mitigation Measure HAZ-1, the contractor(s) shall develop and implement a Soil, Landfilled Materials, and Groundwater Management Plan that includes a materials disposal plan specifying how the contractor will remove, handle, transport, and dispose of all excavated material in a safe, appropriate, and lawful manner. The Plan shall identify protocols for soil and landfilled materials testing and disposal, identify the approved disposal site, and include written documentation that the disposal site can accept the waste. Contract specifications shall mandate full compliance with all applicable local, state, and federal regulations related to the identification, transportation, and disposal of hazardous materials, including those encountered in excavated soil, landfilled materials, or dewatering effluent.

As part of the Soil, Landfill Materials, and Groundwater Management Plan, the contractor shall develop a groundwater dewatering control and disposal plan specifying how groundwater (dewatering effluent), if encountered, will be handled and disposed of in a safe, appropriate and lawful manner. The Plan shall identify the locations at which groundwater dewatering is likely to be required, the test methods to analyze groundwater for hazardous materials, the appropriate treatment and/or disposal methods, and approved disposal site(s), including written documentation that the disposal site can accept the waste. The contractor may also discharge the effluent under an approved permit to a publicly owned treatment works, in accordance with any requirements the treatment works may have.

This Plan shall be submitted to the LCWA, and the Orange County Environmental Health Division (the CUPA for the City of Seal Beach area), or the Long Beach/Signal Hill Joint Powers Authority (the CUPA for the Long Beach area), for review and approval prior to commencement of construction.

Significance after Mitigation

Less than Significant with Mitigation

Impact HAZ-4: For a proposed program located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, the proposed program would result in a significant impact if the proposed program would result in a safety hazard or excessive noise for people residing or working in the program area.

The are no airports within two miles of the program area. Therefore, relative to proximity to airports, there would be no impact.

Mitigation Measure

No mitigation is required.

Significance after Mitigation

Less than Significant

Impact HAZ-5: The proposed program would result in a significant impact if the proposed program would impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

The City of Seal Beach Emergency Operations Plan provides emergency response and evacuation procedures for the city in lieu of firm routes of evacuation. These procedures are based on the number of people to be evacuated, the road capacity, and which roads may be blocked or have their capacity reduced by disaster conditions (City of Seal Beach, 2017). Similarly, the City of Long Beach General Plan Public Safety Element does not establish firm routes of evacuation, rather it provides emergency response and emergency evacuation procedures for the City based on availability of through streets, multiple access routes and bridges depending on the disaster and the street conditions at the time (City of Long Beach, 1975). The proposed program would not expect to stage or store construction materials or construction equipment on public roadways. The program would not propose any public road closures or rerouting of the existing public roadway network. Although the proposed program may generate traffic trips during construction and operation, the traffic trips would be minimal and would not interfere with an adopted emergency response plan. Therefore, the program would not substantially impair an adopted emergency response plan or emergency evacuation plan, and no impact would occur.

Mitigation Measure

No mitigation is required.

Significance after Mitigation

No Impact

Impact HAZ-6: The proposed program would result in a significant impact if the proposed program would expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires.

The program area is not located within or near a very high or high fire hazard severity zone. Therefore, relative to wildfires, there would be no impact.

Mitigation Measure

No mitigation is required.

Significance after Mitigation

No Impact

3.7.6 Cumulative Impacts

This section presents an analysis of the cumulative effects of the proposed program in combination with other past, present, and reasonably foreseeable future projects that could cause cumulatively considerable impacts.

As previously discussed, the proposed program would have no impact with respect to proximity to schools or airports, or being located on very high or high fire hazard severity wildland fire zones. Accordingly, the proposed program could not contribute to cumulative impacts related to these topics and are not discussed further.

The geographic area affected by the proposed program and its potential to contribute to cumulative impacts varies based on the environmental resource under consideration. The geographic scope of analysis for cumulative hazardous materials impacts encompasses and is limited to the program area and its immediately adjacent area. This is because impacts relative hazardous materials are generally site-specific. For example, the effect of a hazardous materials spill would tend to be limited to the localized area of the spill and could only be cumulative if two or more adjacent spills spatially overlapped.

The timeframe during which the proposed program could contribute to cumulative hazardous materials impacts includes the construction and operations phases. For the proposed program, the operations phase is permanent. However, similar to the geographic limitations discussed above, it should be noted that impacts relative to hazardous materials are generally time-specific. Hazardous materials impacts could only be cumulative if two or more hazardous materials impacts occurred at the same time, as well as overlapping at the same location.

3.7.6.1 Construction

Significant cumulative impacts related to hazardous materials could occur if the incremental impacts of the proposed program combined with the incremental impacts of one or more of the cumulative projects identified in Table 3-1, *List of Cumulative Projects*, to substantially increase risk to people or the environment would be exposed to hazardous materials. Note that while three

cumulative projects are within proximity of the proposed program, only Project 24, Los Cerritos Wetlands Oil Consolidation and Restoration Project, listed on Table 3-1 would geographically overlap the proposed program. Cumulative Project 24 is a marsh restoration project with the same proposed activities as the Los Cerritos Wetlands Restoration Plan: operate existing oil wells until no longer productive, destroy unproductive wells, and restore marshland areas.

More importantly, all of these cumulative projects would be subject to the same regulatory requirements discussed in Section 3.7.3, *Regulatory Framework*, including the implementation of health and safety plans, and soil and groundwater management plans, as needed. Cumulative projects involving the potential releases of hazardous materials also would be required to remediate their respective sites to the same established regulatory standards. This would be the case regardless of the number, frequency, or size of the release(s), or the residual amount of chemicals present in soil from previous spills. Therefore, while it is possible that the proposed program and cumulative projects could result in releases of hazardous materials at the same location and at the same time (e.g., two trucks carrying hazardous materials), the responsible party associated with each spill would be required to remediate site conditions to the same established regulatory standards. The residual less-than-significant effects of the proposed program that would remain after mitigation would not combine with the potential residual effects of cumulative projects to cause a potential significant cumulative impact because residual impacts would be highly site-specific. Accordingly, no significant cumulative impact with respect to the use of hazardous materials would result. Therefore, the proposed program would not cause or contribute to a cumulatively significant impact with respect to the use of hazardous materials during construction activities.

Mitigation Measure

No mitigation is required.

Significance after Mitigation

Less than Significant

3.7.6.2 Operation

Upon completion of construction activities for the proposed program, the proposed program would not use hazardous materials and, therefore, could not cause or contribute to a cumulatively significant impact with respect to the use of hazardous materials during operations.

Mitigation Measure

No mitigation is required.

Significance after Mitigation

Less than Significant

3.7.7 References

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