5.7 HAZARDS AND HAZARDOUS MATERIALS

This section evaluates the potential impacts of the proposed project on human health and the environment due to exposure to hazardous materials or conditions associated with the project site, project construction, and project operations. Potential project impacts and appropriate mitigation measures or standard conditions are included as necessary.

This section incorporates four thresholds of significance for wildfire impacts added to CEQA Guidelines Appendix G by the CEQA Guidelines Update approved in December 2018. Thus, this section is divided into two subsections:

1. Hazardous materials
2. Wildfire and emergency response planning

Airport-related hazards were identified as less than significant in the Initial Study, which is included as Appendix A to this DEIR. Therefore, those hazards are not addressed in this section.

The analysis in this section is based, in part, upon the following source(s):

- *Solana Torrance Property Phase I Environmental Site Assessment, Torrance, California,* Kennedy/Jenks Consultants, September 15, 2015
- *Limited Subsurface Assessment Results, (Phase II ESA) Solana Torrance Development, Torrance, California,* Kennedy/Jenks Consultants, February 17, 2016
- *Report of Findings, Solana Torrance Site, Hawthorne Boulevard and, Via Valmonte, Torrance, CA,* Kennedy/Jenks Consultants, August 21, 2018
- *DTSC Comments on the ADEIR for the Butcher Solana Residential Development Project,* Department of Toxic Substances Control, March 19, 2019

Complete copies of these documents are included as Appendices F1, F2, F3, and F4 to this Draft EIR.

Thirty-one comments relating to hazards and hazardous materials were received in response to the Initial Study (IS)/Notice of Preparation (NOP) circulated for the proposed project, primarily regarding the potential for previously unknown hazardous materials—which may have been deposited at the site with the uncontrolled fill material—to adversely impact the community. Additional comments were raised regarding the potential for construction activities to disturb the silica and diatomaceous earth at the site, creating hazardous particulate matter. The presence of silica and diatomaceous earth at the site, and associated impacts resulting from soil disturbance and grading activities, namely the creation of fugitive dust at the project site, is addressed further in Section 5-2, Air Quality. The potential impacts relating to hazardous risk from construction and operation of the proposed project have been analyzed in this section.

5.7.1 Hazardous Materials

5.7.1.1 ENVIRONMENTAL SETTING

Applicable Plans and Regulations

Federal, state, and local laws, regulations, plans, or guidelines that are related to hazardous materials and applicable to the proposed project are summarized below.

Federal

Resource Conservation and Recovery Act

The 1976 Federal Resource Conservation and Recovery Act (RCRA) and the 1984 RCRA Amendments regulate the treatment, storage and disposal of hazardous and nonhazardous wastes. Federal hazardous waste laws are generally promulgated under RCRA. These laws provide for the "cradle to grave" regulation of hazardous wastes. Any business, institution, or other entity that generates hazardous waste is required to identify and track its hazardous waste from the point of generation until it is recycled, reused, or disposed. The Department of Toxic Substance Control (DTSC) is responsible for implementing the RCRA program as well as California's own hazardous waste laws, which are collectively known as the Hazardous Waste Control Law.

Comprehensive Environmental Response, Compensation and Liability Act

The Comprehensive Environmental Response, Compensation and Liability Act of 1980 introduced active federal involvement to emergency response, site remediation, and spill prevention, most notably with the Superfund program. The act was intended to be comprehensive in encompassing both the prevention of and response to uncontrolled hazardous substances releases. The act deals with environmental response, providing mechanisms for reacting to emergencies and chronic hazardous material releases. In addition to establishing procedures to prevent and remedy problems, it establishes a system for compensating appropriate individuals and assigning appropriate liability. It is designed to plan for and respond to failure in other regulatory programs and to remedy problems resulting from action taken before the era of comprehensive regulatory protection.

Emergency Planning and Community Right-to-Know Act

The primary purpose of the federal Emergency Planning and Community Right-to-Know Act of 1986 is to inform communities and citizens of chemical hazards in their areas. Sections 311 and 312 of the act require businesses to report the location and quantities of chemicals stored on-site to state and local agencies. Under Section 313, manufacturers are required to report chemical releases for more than 600 designated chemicals. In addition to chemical releases, regulated facilities are also required to report off-site transfers of waste for treatment or disposal at separate facilities, pollution prevention measures, and chemical recycling activities. The US Environmental Protection Agency (EPA) maintains the Toxic Release Inventory database, which compiles the information that regulated facilities are required to report annually.

Superfund Amendments and Reauthorization Act

In 1986, Congress passed the Superfund Amendments and Reauthorization Act. Title 5 of this regulation requires that each community establish a local emergency planning committee that is responsible for developing a plan for preparing for and responding to a chemical emergency. The emergency plan is required to include the following information:

- An identification of local facilities and transportation routes where hazardous materials are present.
- The procedures for immediate response in case of an accident (this must include a community-wide evacuation plan).
- A plan for notifying the community that an incident has occurred.
- The names of response coordinators at local facilities.
- A plan for conducting drills to test the plan.

The emergency plan is reviewed by the State Emergency Response Commission and publicized throughout the community. The local emergency planning committee is required to review, test, and update the plan each year. The City of Torrance Fire Department is responsible for coordinating hazardous material and disaster preparedness planning and appropriate response efforts with City departments and local and state agencies. The goal is to improve public and private sector readiness and to mitigate local impacts resulting from natural or manmade emergencies.

Federal Occupational Safety and Health Act

The Federal Occupational Safety and Health Act of 1970 authorizes each state (including California) to establish their own safety and health programs with the US Department of Labor, Occupational Safety and Health Administration (OSHA) approval. The California Department of Industrial Relations regulates implementation of worker health and safety in California. Cal/OSHA enforcement units conduct on-site evaluations and issue notices of violation to enforce necessary improvements to health and safety practices. California standards for workers dealing with hazardous materials are contained in Title 8 of the California Code of Regulations (CCR) and include practices for all industries (General Industrial Safety Orders) and specific practices for construction and other industries. Workers at hazardous waste sites (or working with hazardous wastes as might be encountered during excavation of contaminated soil) must receive specialized training and medical supervision according to the Hazardous Waste Operations and Emergency Response (HAZWOPER) regulations.

OSHA Regulation 29 CFR Standard 1926.62 regulates the demolition, renovation, or construction of buildings involving lead materials. Federal, state, and local requirements also govern the removal of asbestos or suspected asbestos-containing materials (ACMs), including the demolition of structures where asbestos is present. All friable (crushable by hand) ACMs, or non-friable ACMs subject to damage, must be abated prior to demolition following all applicable regulations.

State

Health and Safety Code and Code of Regulations

California Health and Safety Code Chapter 6.95 and 19 CCR Section 2729 set out the minimum requirements for business emergency plans and chemical inventory reporting. These regulations require businesses to provide emergency response plans and procedures, training program information, and a hazardous material chemical inventory disclosing hazardous materials stored, used, or handled on-site. A business which uses hazardous materials or a mixture containing hazardous materials must establish and implement a business plan if the hazardous material is handled in certain quantities.

Environmental Protection Agency

One of the primary agencies that regulate hazardous materials is the California Environmental Protection Agency (CalEPA). The state, through CalEPA, is authorized by the US EPA to enforce and implement certain federal hazardous materials laws and regulations. The DTSC, a department of CalEPA, protects California and Californians from exposure to hazardous waste, primarily under the authority of the federal RCRA and the California Health and Safety Code Sections 25100 et seq. and 25300 et seq. The DTSC requirements include the need for written programs and response plans, such as Hazardous Materials Business Plans. The DTSC programs include dealing with aftermath cleanups of improper hazardous waste management; evaluation of samples taken from sites; enforcement of regulations regarding use, storage, and disposal of hazardous materials; and encouragement of pollution prevention.

California Land Reuse and Revitalization Act

The California Land Reuse and Revitalization Act (CLRAA) (California Health and Safety Code Chapters 6.82 and 6.83) provide liability protections for landowners, purchasers, tenants, and prospective purchasers. The liability protections are intended to promote the cleanup and redevelopment of blighted contaminated properties. The law establishes a process for eligible property owners to obtain immunities, conduct a site assessment, and implement a response action as necessary to ensure that the property can be reused or redeveloped.

Land Use Covenants

Land use covenants between landowners and DTSC, authorized under the California Health and Safety Code Chapters 6.5, 6.8, and 6.85 and the California Civil Code, Section 1471, allow ongoing use of a contaminated property as long as the cleanup remedy is not compromised by current or future development.

Division of Occupational Safety and Health

Like OSHA at the federal level, Cal/OSHA is the responsible state-level agency for ensuring workplace safety. Cal/OSHA assumes primary responsibility for the adoption and enforcement of standards regarding workplace safety and safety practices. In the event that a site is contaminated, a Site Safety Plan must be crafted and implemented to protect the safety of workers. Site Safety Plans establish policies, practices, and procedures to prevent the exposure of workers and members of the public to hazardous materials originating from contaminated sites or buildings.

Department of Transportation and California Highway Patrol

Two state agencies have primary responsibility for enforcing federal and state regulations and responding to hazardous materials transportation emergencies: the California Highway Patrol (CHP) and the California Department of Transportation (Caltrans). Caltrans manages more than 50,000 miles of California's highway and freeway lanes, provides intercity rail services, permits more than 400 public-use airports and special-use hospital heliports, and works with local agencies. Caltrans is also the first responder for hazardous material spills and releases that occur on those highway and freeway lanes and intercity rail services.

The CHP enforces hazardous materials and hazardous waste labeling and packing regulations designed to prevent leakage and spills of materials in transit and to provide detailed information to cleanup crews in the event of an accident. Vehicle and equipment inspection, shipment preparation, container identification, and shipping documentation are all part of the responsibility of the CHP, which conducts regular inspections of licensed transporters to ensure regulatory compliance. In addition, the state regulates the transportation of hazardous waste originating or passing through the state.

Common carriers are licensed by the CHP pursuant to the California Vehicle Code, Section 32000. This section requires licensing every motor (common) carrier who transports, for a fee, in excess of 500 pounds of hazardous materials at one time and every carrier, if not for hire, who carries more than 1,000 pounds of hazardous material of the type requiring placards. Common carriers conduct a large portion of the business in the delivery of hazardous materials.

Hazardous Materials Disclosure Programs

The Unified Program administered by the State of California consolidates, coordinates, and makes consistent the administrative requirements, permits, inspections, and enforcement activities for environmental and emergency management programs, which include: Hazardous Materials Release Response Plans and Inventories (Business Plans), the California Accidental Release Prevention (CalARP) Program, and the Underground Storage Tank (UST) Program. The Unified Program is implemented at the local government level by Certified Unified Program Agencies (CUPAs). The Los Angeles County Fire Department Health Hazardous Materials Division has oversight of aboveground storage tanks, Cal ARP Program, Hazardous Waste Program, and Hazardous Materials Program. The Torrance Fire Department has oversight of underground storage tanks in the city (LACFD 2018).

Accidental Release Prevention Program

The CalARP became effective on January 1, 1997, in response to Senate Bill 1889. CalARP aims to be proactive and therefore requires businesses to prepare risk management plans, which are detailed engineering analyses of the potential accident factors at a business and the mitigation measures that can be implemented to reduce this accident potential. This requirement is coupled with the requirements for preparation of hazardous materials business plans under the Unified Program, implemented by the CUPA.

Local

Los Angeles County and City of Torrance

The Los Angeles County Fire Department Health Hazardous Materials Division is the local CUPA. A local CUPA is responsible for administering/overseeing compliance with the following programs, as required by State and federal regulations:

- Hazardous Materials Release Response Plans and Inventories (Area Plans)
- California Accidental Release Prevention (CalARP) Program
- Aboveground Petroleum Storage Act (APSA) Requirements for Spill Prevention, Control and Countermeasure (SPCC) Plans (AST)
- Hazardous Waste Generator and Onsite Hazardous Waste Treatment (tiered permitting) Programs
- California Fire Code: Hazardous Material Management Plans and Hazardous Material Inventory Statements

The Torrance Fire Department is a Participating Agency in the Certified Unified Program and has oversight of USTs in the city.

Existing Conditions

The project site is the entire 24.68-acre site, and the development area is the proposed 5.71-acre development footprint. To support the environmental clearance of the project site, a Phase I ESA and a Limited Subsurface Assessment were prepared during the period of September 2015 and February 2016 respectively. During subsequent project discussions with the City of Torrance, Fire Department officials required that the applicant enter into an oversight program with a California state agency to evaluate the findings of Kennedy/Jenks' 2015 findings. In October 2017, the applicant entered into a California Land Reuse and Revitalization Agreement (CLRRA) for regulatory oversight of the environmental aspects of the project site with the DTSC. The applicant prepared a Report of Findings, in August 2018. The following summarizes the environmental assessments that were performed on the proposed project site.

Phase I Environmental Site Assessment

A Phase I Environmental Site Assessment (Phase I ESA) was prepared by Kennedy/Jenks Consultants (Kennedy/Jenks), published September 15, 2015. The Phase I was conducted in accordance with the EPA AAI rule (40 CFR, Part 312) as described in the American Society for Testing and Materials Standard E1527-13 (ASTM E1527-13). The Phase I is included as Appendix E1 of this DEIR.

Recognized Environmental Conditions

A recognized environmental condition (REC) is the presence or likely presence of any hazardous substance or petroleum products in, on, or at a property due to release to the environment; under conditions indicative of a

release to the environment; or under conditions that pose a material threat of a future release to the environment. No RECs, controlled RECs, or historical RECs were identified for the project site in the Phase I. However, the Phase I identified several notable findings pertaining to hazardous materials at the project site; listed below under *Agency Records Review* and *Site Reconnaissance*.

Agency Records Review

The Phase 1 ESA conducted information requests to agencies responsible for chronicling historical and ongoing hazards and hazardous releases at the project site and in the project site's vicinity. No hazardous materials sites were identified within the project site in the agency records review conducted as part of the Phase I for the project site. The following off-site hazardous materials sites were identified in the records review:

- Hawthorne Canyon Landfill, 3,850 feet southwest and upgradient of the project site, is a former landfill in a residential area that received a No Further Action (NFA) status for reported impacts to soil and soil gas in 1997. A requirement of the NFA status was to install a continually operating gas collection system that is properly maintained.

- Palos Verdes Landfill (PVLF), approximately 650 feet south and upgradient of the project site, is a former landfill with portions that encompassed the current South Coast Botanic Gardens, Ernie Howlett Park, and the former Hawthorne Canyon Landfill. The main landfill site has a restricted land use for remaining impacts from landfill operations. Groundwater impacts from the PVLF have migrated north along Hawthorne Boulevard and the south-southeast boundary of the project site. Some monitoring wells near the southern portion of the project site show volatile organic compounds (VOCs) and semi-volatile organic compounds (SVOCs) in groundwater above their respective maximum allowable concentrations in drinking water. The Phase I concluded that, if present beneath the project site, impacts from a groundwater plume may pose a vapor encroachment risk for a residential development. Active remediation of groundwater at the PVLF site is ongoing, utilizing a subsurface bentonite-cement barrier and wells that are upgradient of the proposed project site to discourage migration and extract contaminated groundwater. According to the Phase 1, the environmental control systems currently in place at the Palos Verdes Landfill are functioning properly and no additional remedial measures and monitoring systems are necessary.

- A former Shell Station at 25535 Hawthorne Boulevard near the south project site boundary is listed as a leaking underground storage tank site on the GeoTracker database maintained by the State Water Resources Control Board had reported petroleum-related chemical impacts to soil and groundwater. The case received closure from the oversight agency in 2010 and groundwater monitoring wells associated with the site were subsequently destroyed. However, some monitoring wells used to monitor the PVLF site are located in close proximity to the Subject Property; well PV03 is within approximately 100 feet of the southern boundary of the Subject Property. According to 2014 LACSD well data, petroleum-related chemicals are not detected in these two nearby wells.

- Some nearby properties north and east of the project site were identified as having released petroleum-related chemicals to soil only. These cases have been closed by their respective oversight agency.

- Two properties northeast of the project site were identified as having released VOC-related chemicals into the environment; however, releases at the first property, a dry cleaner site, were reported to impact soil only and have received case closure by the oversight agency. Releases at the second property, an industrial site about one mile from the project site, were reported to impact soil and groundwater; however, the historic and current hydraulic gradient in that area is to the east and away from the project site. Therefore, the latter site is not an environmental concern for the proposed project.

- Based on the EDR Radius Map Report, an east-west trending natural gas pipeline bisects the center of the project site.

Site Reconnaissance

Kennedy/Jenks performed the project area reconnaissance on July 8, 2015. The process of backfilling the previous mining pit has been ongoing since the 1960's. In late 2008 and mid-2009, the former quarry mining pit was returned to surface grade with uncontrolled fill using a combination of existing onsite-sourced quarry tailings and fill material imported from other construction projects in the Palos Verdes area (Kennedy/Jenks 2018). The site is primarily vacant and undeveloped. Small debris piles of wood, plastic bottles, and other household trash were observed during the site reconnaissance.

Limited Subsurface Assessment – Phase 2 Environmental Site Assessment

Soil Vapor Survey

Based on the results of the Phase 1 ESA's evidence of groundwater and soil contamination from PVLF and the former Shell Station in proximity to the site, a limited assessment (Phase II ESA) of soil vapor within Lot 1was completed by Kennedy/Jenks Consultants in February 2016. This assessment evaluated the potential for off-gassing from groundwater or imported fill to pose a vapor intrusion risk to the proposed development. The assessment report is included as Appendix E2 to this DEIR.

A soil vapor survey was conducted in accordance with the July 2015 Advisory Active Soil Gas Investigations issued by the RWQCB and DTSC. Eight temporary soil vapor probes were drilled to a depth of approximately five feet below ground surface (bgs); probe locations are shown on Figure 5.7-1, *Soil Vapor Well Locations, Limited Soil Vapor Assessment*. Soil vapor samples were tested for VOCs by EPA Method 8260SV.

The Phase II stated that benzene was detected in probe SV-8 at a concentration of 0.15 micrograms per liter (µg/l), slightly above the San Francisco Bay Regional Water Quality Control Board Environmental Screening Level (ESL)[1] for a residential setting (0.042 µg/l). Toluene was detected in probes SV-2 at a concentration of 2.2 µg/l, well below the residential ESL of 160 µg/l. VOCs were not detected in the other six probes. The ESLs are commonly used for screening-level assessments in California, but may not be strictly accepted by regulatory agencies outside of the San Francisco Bay area.

[1] San Francisco Bay Regional Water Quality Control Board Environmental Screening Levels (ESL)s are commonly used as for screening-level assessments in California but may not be strictly accepted by regulatory agencies outside of the San Francisco Area. The Phase 2 ESA references these ESLs in its analysis.

The detections of these constituents were not co-located, as the two temporary wells are on opposite ends of the site, and neither constituent was detected in any of the other soil vapor samples collected from the site. Therefore, the assessment concluded that the benzene detected was likely de minimis surface staining from recreational vehicle traffic in the area or equipment used to backfill the mine, rather than off-gassing from a regional groundwater plume or contaminated fill materials. Based on these findings, there does not appear to be a VOC vapor intrusion risk for the proposed residential development. However, as benzene was detected in levels above the reports identified screening levels, the City of Torrance Fire Department referred the project to DTSC and the Los Angeles Regional Water Quality Control Board for further review and action. Table 5.7-1, *Phase II Soil Vapor Contamination Findings,* summarizes the extent of soil vapor contamination discussed above.

Table 5.7-1 Phase II Soil Vapor Contamination Findings

Contaminant	Highest Measured Concentration	ESL	Exceeds Threshold?
Benzene	0.15 µg/l	0.042 µg/l	Yes
Toluene	2.2 µg/l	160 µg/l	No

Kennedy/Jenks Consultants, Phase 2 ESA, 2016

California Land Reuse and Revitalization Agreement (CLRAA)

Based upon the Torrance Fire Department request for review, the applicant entered into consultation with the DTSC regarding development of the proposed project. In October 2017, Torrance entered into a CLRRA for regulatory oversight of the environmental aspects of the project site with DTSC. CLRRA is the legally binding mechanism used for DTSC's oversight of the environmental investigation.

During initial discussions with the DTSC, the applicant and the agency determined oversight would most appropriately apply to area Lot 1 of the project site. Therefore, it was agreed that the CLRRA document will be revised to more specifically apply to the footprint of development once the final development boundaries have been finalized. The CLRRA Program sets forth assessment and remediation objectives to be accomplished by qualifying property purchasers in return for certain immunities from liability. The agreement also provides for the DTSC to obtain reimbursement for their related oversight costs. DTSC will utilize this DEIR in approving a final Response Plan.

In accordance with Section 5 of the CLRRA, Kennedy/Jenks provided existing data to DTSC and prepared a Report of Findings (Kennedy/Jenks 2018). The Report of Findings provided data on the existing conditions of the project site, and addressed the DTSC's concerns regarding the potential for impacts to be present at the site as a result of the following:

- The potential for methane from the former PVLF to pose a risk to the development area
- The potential for groundwater from the former PVLF to pose a risk to the development area
- The potential for fill material within the development area to be impacted soil from uncontrolled backfilling, including material from the former Shell site located on Hawthorne Boulevard.

The report was accepted by the DTSC in their Adequacy of Report of Findings, dated August 23, 2018. The results of the Report of Findings will be addressed in the Section 5.7.1.3, Environmental Impacts below.

Report of Findings Existing Conditions Summary

Regional Hydrology

The Los Angeles Regional Board's Basin Plan (LARWQCB, 2014) indicates that the Project Site is located in the Palos Verdes uplift, which is not considered a groundwater basin. However, groundwater on the eastern side of the Palos Verdes uplift is considered by the plan to be upgradient of the West Coast Basin (refer to Chapter 5.08, Hydrology for greater details regarding the West Coast Basin). Per the June 1995 *Remedial Investigation Report, Palos Verdes Landfill Volume I* prepared by the Sanitation Districts of Los Angeles County, the Palos Verdes Hills are underlain by bedrock of the Monterey Formation which is considered to be non-waterbearing, in the economic sense. The bedrock originates from deep marine sediments with poor natural water quality consisting of elevated levels of dissolved solids, metals, and organic compounds (does not meet secondary drinking water standards). Groundwater in the Palos Verdes Hills generally follows the topographic gradient, flowing from southwest to northeast. Hydrogeologic modeling has demonstrated that groundwater flow in the Former PVLF area (Palos Verdes Hills) is unconfined, topographically driven, and tributary to the regional flow in the West Coast Basin. The model demonstrates that there is a zone of limited areal extent, the "zone of particle pathways", within which the particles of groundwater emanating from the PVLF will flow; and particle tracking exercises indicate that groundwater particles originating at the Former PVLF generally require over 2,000 years to reach the West Coast Basin.

The West Coast Basin is structurally separated from the Palos Verdes Hills by the Palos Verdes fault zone which locally acts as a partial barrier to groundwater flow. Some groundwater, of poor quality, migrates very slowly through the unweathered Monterey Formation bedrock along northdipping bedding planes and fractures, however, fractures within the Monterey Formation are commonly filled with clay, secondary mineralization, and naturally occurring hydrocarbons (tar) which limit the transmission of groundwater through these fractures. Steep groundwater gradients exist near the inferred trace of the Palos Verdes fault zone indicating that the fault zone acts as a partial barrier to groundwater flow from the Palos Verdes Hills to the West Coast Basin. These gradients are more pronounced near Hawthorne Boulevard and become less pronounced to the east.

The nearest groundwater supply well is documented to be located 3-1/4 miles to the north of the PVLF in the downtown area of the City of Torrance, per the Water Replenishment District Regional Groundwater Monitoring Report Water Year 2016-2017, published in March 2018 shows a nested monitoring well (Chandler 3) approximately 2 miles away.

Summary of Geotechnical Investigations and Soil Removal/Replacement History

The Report of Findings summarized the previously identified Pacific Soils Engineering, Inc., Geotechnical Report of Compacted Fill Placement and the Geocon West, Inc., Preliminary Geotechnical Investigation. Pacific Soils, Inc. (Pacific Soils) conducted a geotechnical investigation in 2005 that consisted of four bucket auger borings and nine test pits. The bucket auger borings were advanced to depths up to 111 feet below the existing ground surface (bgs) and the test pits were advanced to a maximum depth of 17 feet bgs.

Pacific Soils later completed a grading/compacted fill placement project at the Project Site that consisted of:

- Stripping and clearing the area proposed for grading of existing trash, brush, vegetation and other deleterious materials for offsite disposal,
- Excavation of in place soils consisting of artificial fill, colluvial soils, and weathered bedrock (unsuitable soils) prior to the replacement and recompaction of remaining suitable soils, and
- Importing, placing, and recompacting fill from offsite sources.

"The primary source of import material was the Sunrise Senior Living construction project located southerly adjacent to the subject site. These materials, which were transported to the disposal site in bottom dump trailers and dump trucks, were primarily diatomaceous claystones and siltstones of the Valmonte Dolomite. Near the end of the import operations described herein, additional materials were brought into the site in end dump trucks. This material was primarily sourced from smaller construction projects on the Palos Verdes peninsula and consisted of a varied admixture of clay, silt and sand with a significant amount of adobe clay" (Pacific Soils, 2010).

In July 2015, Geocon West, Inc. (Geocon) conducted a geotechnical investigation that consisted of drilling 17 large-diameter bucket auger borings to depths between 11 and 111.5 feet bgs, four of which were downhole logged by a Certified Engineering Geologist, and six 4-inch diameter borings utilizing manual augers and digging equipment to depths between 7 and 23.5 feet bgs. Geocon West, Inc. completed a supplemental investigation in May 2017 that consisted of drilling nine 8-inch diameter borings using a truck-mounted hollow-stem auger rig to depths between 60.5 and 120.5 feet bgs, and three 8-inch diameter borings to depths between 15 and 25 feet bgs for the proposes of percolation testing (Geocon, 2017).

Site Geology and Soil Zones

Fill soils in the project site consist of three layers ("zones"): The mine pit has been backfilled since the 1960's, and returned to surface grade in 2008 and 2009 using on-site quarry tailings and fill material imported from other construction sites in the Palos Verdes area.

- Zone 1: An upper zone of fill material that consists of material brought in during the final stages of backfilling from various small construction sites around the Palos Verdes Peninsula.
- Zone 2: An intermediate zone of fill material that consists of material brought onsite from the Sunrise Senior Living property to the south, a portion of which included a former Shell gasoline station.
- Zone 3: The deepest zone of fill material represents native Project Site soils that were excavated during historic mining activities (tailings) and later replaced into the base of the pit.

Site Groundwater

As described above, geotechnical borings were drilled in the development area to a maximum depth of 120.5 feet bgs (elevation 71.5 feet msl) and groundwater was not encountered (Geocon West, Inc., 2017). The depth

of 120.5 feet bgs indicates that the deepest boring extends 46 feet into native material beyond the deepest point of investigated fill (74 feet bgs).

As described above, groundwater associated with the Former PVLF is documented to be topographically-driven through overburden materials. According to the Report of Findings, "near surface geologic materials at and near the [PVLF] Site are composed of alluvium and other unconsolidated sediment and have relatively high hydraulic conductivity compared with underlying bedrock units. These overburden materials act as preferential pathways for groundwater movement. Prior to landfilling and mining operations, two primary surface water drainages crossed the present [PVLF] Site… Various tributaries merged into the main drainages along present day Crenshaw and Hawthorne Boulevards. Alluvium in these historic drainages forms the preferred pathway for groundwater flow in the area".

In contrast to the PVLF conditions described above, topographic and geologic conditions appear to separate impacted PVLF groundwater from the project site and result in minimal drainage to the Development Area. This is supported by data from Former PVLF Well M63B, which is the nearest PVLF groundwater monitoring well to the development area and is located along Hawthorne Boulevard, downgradient of the landfill. In the fourth quarter of 2017 the groundwater elevation in this well was 160.76 feet above mean sea-level (amsl). This elevation is approximately 90 feet above the deepest boring advanced within the development area. This demonstrates that the development area is separated from the historic drainage along Hawthorne Boulevard that controls groundwater flow from the western portion of the Former PVLF. With limited topographic drainage and generally low precipitation feeding the project site, infiltration to groundwater under current conditions beneath the project site is not expected to be a significant source of water for the West Coast Basin. Infiltration rates will be further reduced by the proposed development and associated storm water management infrastructure.

Figure 5.7-1 - Soil Vapor Well Locations, Limited Soil Vapor Assessment

5. Environmental Analysis

SV-1 Soil Vapor Sample Locations (8)

Note: All locations and boundaries are approximate.

Source: Kennedy/Jenks Consultants, 2015

0 200
Scale (Feet)

5. Environmental Analysis
HAZARDS AND HAZARDOUS MATERIALS

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5.7.1.2 THRESHOLDS OF SIGNIFICANCE

According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if the project would:[2]

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

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

H-3 Emit hazardous emissions or handle hazardous or acutely hazardous materials, substance, or waste within one-quarter mile of an existing or proposed school.

H-4 Be located on a site which is included on a list of hazardous materials compiled pursuant to Government Code Section 65962.5 and, as a result, would create a significant hazard to the public or the environment.

5.7.1.3 ENVIRONMENTAL IMPACTS

The following impact analysis addresses thresholds of significance for potentially significant impacts. The applicable thresholds are identified in brackets after the impact statement. Impacts related to Threshold H-1 were identified as less than significant in the NOP and are therefore not analyzed in this Draft EIR.

Impact 5.7-1 Methane from the former Palos Verdes Landfill site would not cause a significant hazard to the environment with implementation of the proposed project. [Threshold H-2]

The Report of Findings examined whether methane or any other toxic air contaminant routinely monitored at the former PVLF pose a risk to the project site. Based on the findings, landfill gas migration from the former PVLF to the project site does not appear to be occurring, specifically due to the fact that the mostly inert solid waste material deposited in the most proximal portion of the Former PVLF (Ernie Howlett Park) generates limited quantities of landfill gas because it contains little organic material. Secondly, low-level quantities of landfill gas generated, if any, are mitigated by the gas collection systems installed at the former PVLF. Additionally, geologic and positional constraints prevent migration of landfill gas to the project site. Landfill gas impacts would not adversely affect the project site, and impacts would be less than significant

Impact 5.7-2 Groundwater from the former Palos Verdes Landfill site would not cause a significant hazard to the environment with implementation of the proposed project. [Threshold H-2]

The project site appears to by hydrogeologically separated from the topographically-driven groundwater associated with the former PVLF and is structurally separated from the West Coast Basin by the Palos Verdes fault zone which locally acts as a partial barrier to groundwater flow. Therefore, very limited topographic

[2] The significance thresholds set forth here are from the CEQA Guidelines Update approved by the California Office of Administrative Law in December 2018 and have not changed with regards to the Initial Study's thresholds.

drainage feeds the Project Site, meaning that infiltration to groundwater beneath the Project Site is not a significant source of water for the West Coast Basin. Geotechnical investigation activities that have occurred on the Project Site extended to a depth of 120.5 feet bgs without any indication of groundwater.

The final pad elevations for the proposed development sit topographically lower than the bottom of the Former PVLF Deposits. The base of the landfill deposit is at an elevation >200 feet amsl (County Sanitation Districts of Los Angeles County, September 1995), while the final pad elevations for the proposed development range from 190.75 to 193.5 feet amsl. The Report of Findings detail that the shallow groundwater systems associated with the former PVLF does not flow beneath the project site due to geologic constraints that prevent groundwater flow from the PVLF to the project site. Also, groundwater collection and remedial measures at the former PVLF stem off-site migration of impacted groundwater to off-site properties. Additionally, the southern two-thirds portion of the project site that is closest to the PVLF will not be developed and will remain as open space. Groundwater contamination would not adversely impact the project site, and impacts would be less than significant.

Impact 5.7-3 Fill material within the development area from uncontrolled backfilling, including material from the former Shell site could cause a significant hazard to the environment with implementation of the proposed project. [Threshold H-2 and H-4]

Fill Material Investigation

The fill investigation was to assess the upper two zones of fill (Zones 1 and 2). Zone 3 soils do not require assessment because:

- They are comprised of native material sourced from the excavated hillside and pit.
- Volatile aspects, if any, related to historic mining activities that may have impacted the proposed development will be assessed with the soil vapor sampling work.
- Given the groundwater conditions associated with Lot 1, the potential for impacts to groundwater related to historic mining activities are of limited concern.[3]

DTSC's October 2*001 Information Advisory on Clean Imported Fill Material* (Guidance) was used as a guide to develop specific sampling approaches for Zone 1 and 2 as described below:

- Total Number of Samples - The Guidance is written for material prior to import, however, our conditions involved soils that have already been imported to the Lot 1 development area. Therefore, it was decided that using the area approach specified in the Recommended Fill Material Sampling Schedule for the number of samples was appropriate. The guidance recommends a minimum of 8 samples for a borrow area between 4 and 10 acres. DTSC and Kennedy/Jenks therefore agreed that a total of ten borings would be advanced with individual samples collected from Zones 1 and 2.
- Constituents of Potential Concern (COPCs) - Because soil in Zone 1 is of uncertain origin, this material was evaluated for all COPCs referenced in DTSC's Guidance. Since Zone 2 soil comes from

[3] Topographic and geologic conditions appear to separate impacted PVLF groundwater from the Project Site and result in minimal drainage to the area of Lot 1 (Kennedy/Jenks 2018).

a known location in which gasoline services were historically conducted, these soils were evaluated for Total Petroleum Hydrocarbons – Carbon Chain Identification, metals, and Volatile Organic Compounds (soil vapor).

- Soil vapor step-out and step-down samples were required to evaluate the detections of toluene (2.2 micrograms per liter (µg/L) in SV-2 at 5 feet below the ground surface [bgs]) and benzene (0.15 µg/L in SV-8 at 5 feet bgs) observed during Kennedy/Jenks' 25 August 2015 soil vapor investigation. Soil vapor samples targeting depths of 5 and 15 feet bgs were deemed appropriate.

Soil and Soil Vapor Sampling and Testing

Kennedy/Jenks completed the fill material investigation in January of 2018. Soil and soil vapor were sampled and tested from the mining pit backfill in the development area of the project site to determine whether the soil was contaminated at levels above residential screening levels by pollutants derived from the former Shell Station in Zone 2, and/or by pollutants from unknown construction sites in Zone 1.

Soil samples were obtained from 11 soil borings at depths ranging from 1.5 to 25 feet bgs in January 2018. Soil vapor samples were obtained from 19 borings, separate from the soil borings, at depths from 5 to 35 feet bgs during that same time period. Boring locations are shown on Figure 5.7-2, *Soil and Soil Vapor Borings Map, Fill Material Investigation*.

Soil samples were tested for contaminants, including metals, semivolatile organic compounds (SVOCs), polycyclic aromatic hydrocarbons, polychlorinated biphenyls, total petroleum hydrocarbons, pesticides, and asbestos. Soil vapor samples were tested for VOCs.

Regional screening levels (RSLs) for soil and soil vapor used were from the DTSC and the EPA. The screening criteria used for soil included the DTSC Human and Ecological Risk Office (HERO) Human Health Risk Assessment (HHRA)-Note 3 January 2018 recommended screening levels for residential soil. The EPA Regional Screening Level (RSL) Resident Soil Table was used when the DTSC SL was not available. Screening levels provide a preliminary means to consider values detected during preliminary screening assessments in comparison to specified standards. If exceeded, a more rigorous screening level or baseline HHRA is necessary to evaluate the actual site-specific level of risk.

The screening criteria used for soil vapor is calculated from the DTSC Modified Screening Level for residential air, or the EPA Ambient Air RSL where there is no DTSC-SL.

The risks from chemicals in soil and soil vapor are higher than the screening levels, indicating that a site-specific human health risk assessment is necessary to evaluate the potential for unacceptable risks if the project site were redeveloped for residential use without any mitigation. The results identify sporadic detections of the constituents of concern in both soil and soil vapor. Detections observed are generally consistent with the fill zone designations. Zone 2 detections are typically fuel-related whereas Zone 1 impacts include a variety of minor impacts that likely reflect material brought in as fill from various construction sites rather than a particular point source. The following summarizes the results of the soil and soil vapor testing.

5. Environmental Analysis
HAZARDS AND HAZARDOUS MATERIALS

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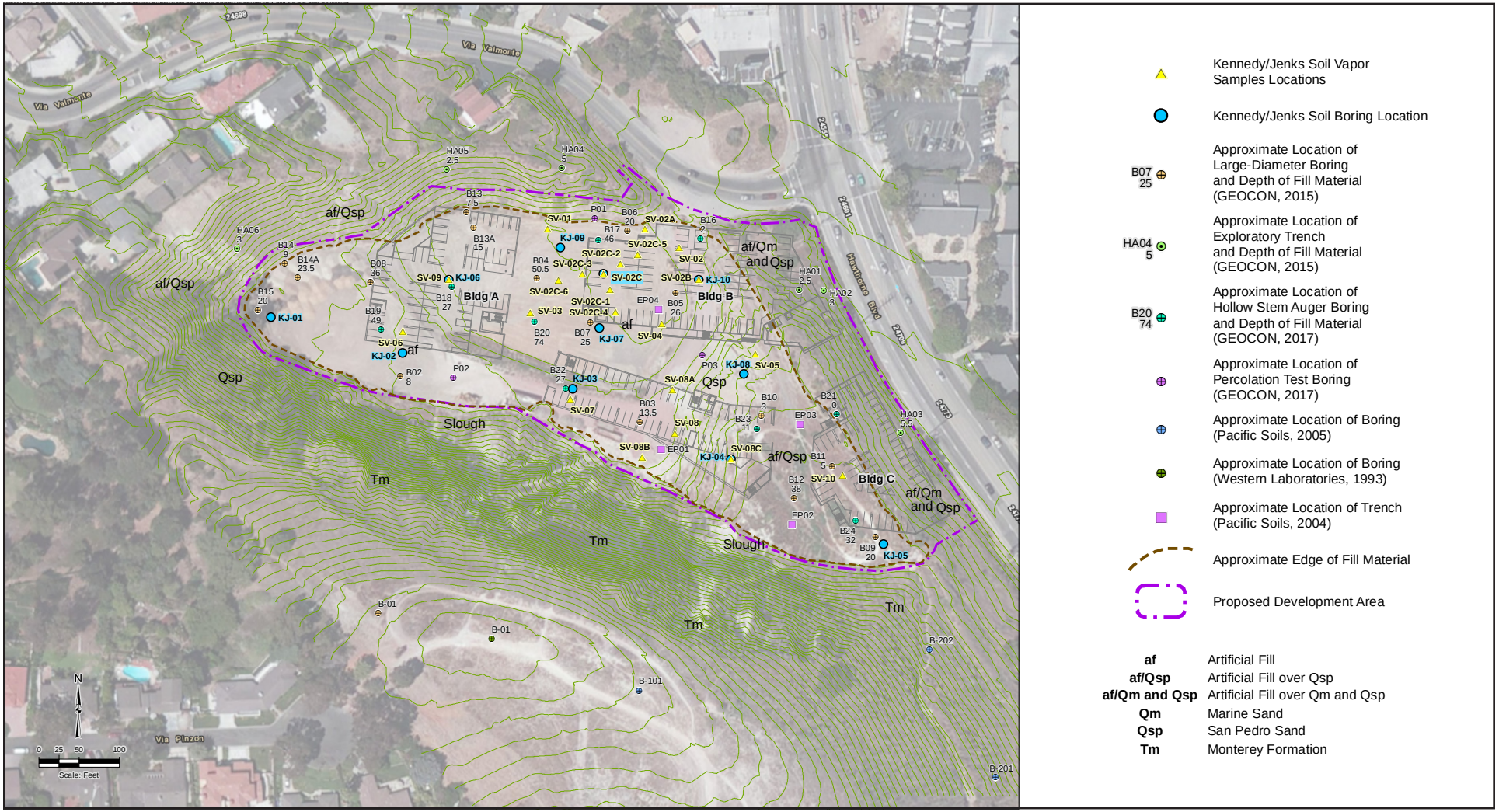
Figure 5.7-2 - Soil and Soil Vapor Borings Map, Fill Material Investigation

5. Environmental Analysis



Source: Kennedy/Jenks Consultants, 2015

5. Environmental Analysis
HAZARDS AND HAZARDOUS MATERIALS

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Soil Testing Results

A total of 23 soil samples were collected that analyzed for 167 constituents of concern. A total of 38 detections were found, only six of which exceeded applicable screening levels.

Metals

Two metals were identified at concentrations above RSLs: arsenic and hexavalent chromium. Arsenic was identified at concentrations exceeding the DTSC established background level of 12 mg/kg in one of 20 detections. The maximum concentration was 28.3 mg/kg from boring KJ-02 in the southwest part of the development area in Zone 2 at a depth of 25 feet bgs. A soil sample collected closer to the surface at this location in Zone 1 at a depth of 5.5 feet was below the level of concern. This detection appears to be an isolated detection rather than a point source of arsenic.

Hexavalent chromium was detected in three samples at concentrations ranging from 0.47 to 1.1 mg/kg, all of which are above the RSL of 0.3 mg/kg. The samples were found in three of the 20 borings (KJ-01, KJ-07, and KJ-09) at depths of 5.5, 15 and 15.5 feet in various parts of the development area of the project site. As the boring location are not co-located, the hexavalent chromium appears to be isolated detections rather than a point source release, as would be the case if samples were identified in immediate proximity to one another.

Semi-Volatile Organic Compounds and Polycyclic Aromatic Hydrocarbons

Three polycyclic aromatic hydrocarbons were identified at concentrations above their respective RSLs.

- Benzo(a)anthracene was detected at a concentration of 1,500 µg/kg in one sample, above the RSL of 1,100 µg/kg; and at a concentration of 12 µg/kg in a second sample, below the RSL.
- Benzo(a)pyrene was detected in one sample at a concentration 1,100 µg/kg, above the RSL of 110 µg/kg; and in a second sample at a concentration of 18 µg/kg, below the RSL.
- Benzo(b)fluoranthene was detected in one sample at a concentration of 1,200 µg/kg, exceeding the RSL of 1,100 ug/kg; and in a second sample at a concentration of 12 µg/kg.

All of the detections at concentrations above RSLs were from one sample from boring KJ-02, collected from 5.5 feet bgs in the southwest part of the project site and therefore do not appear to represent a significant site-contamination source due to the isolated nature of the contamination.

Polychlorinated Biphenyls

One polychlorinated biphenyl (PCB), Aroclor, was detected in one sample at a concentration of 340 µg/kg, above the RSL of 240 µg/kg. As this finding was one individual instance and was isolated, this detection does not appear to be a significant source of PCBs.

Table 5.7-2, *Fill Material Investigation Soil Contaminants in Excess of Screening Levels*, summarizes soil contaminants in excess of the regional screening levels or DTSC screening levels, as discussed above.

Table 5.7-2 Fill Material Investigation Soil Contaminants in Excess of Screening Levels

Contaminant	Highest Measured Concentration	RSL	DTSC SL
Arsenic	28.3 mg/kg	n/a	12 mg/kg
Hexavalent Chromium	1.1	0.3 mg/kg	n/a
Benzo(a)anthracene	1,500 µg/kg	1,100 µg/kg	n/a
Benzo(a)pyrene	1,100 µg/kg	110 µg/kg	n/a
Benzo(b)fluoranthene	1,200 µg/kg	1,100 ug/kg	n/a
Aroclor	340 µg/kg	240 µg/kg	n/a

Kennedy Jenks, 2018

Soil Vapor Testing Results

A total of 46 soil vapor samples were collected and analyzed for 69 different VOCs. Eight detections of VOCs exceeded applicable screening levels out of the 23 detections.

Tetrachloroethylene

Six detections of tetrachloroethylene (PCE) exceeded the screening level of 0.46 µg/l out of 18 detections. Concentrations ranged from 0.034 to 5.46 µg/l. All detections exceeding the screening level were in the vicinity of boring SV-02C-3, in the north-central part of the area planned for development on the project site. The results were thought to represent a limited area of VOC-impacted soil imported during the final stages of backfilling brought in from various small construction sites around the Palos Verdes Peninsula.

Dichloro-difluoromethane

One detection of dichloro-difluoromethane was at a concentration of 850 µg/l, above the screening level of 100 µg/l. Eight other detections were at concentrations below the screening level. The dichloro-difluoromethane detected was in the vicinity of boring SV-02C-3, and is also thought to represent a limited area of VOC-impacted soil.

Benzene

Benzene was detected in two samples; one of these, with a concentration of 0.15 µg/l, exceeded the screening level of 0.097 µg/l. The two samples were from separate borings and thus appear to be isolated detections rather than a point source release.

Table 5.7-3, *Fill Material Investigation Soil Vapor Contaminants in Excess of Screening Levels*, summarizes soil vapor contaminants in excess of applicable screening levels, as discussed above.

Table 5.7-3 Fill Material Soil Vapor Contaminants in Excess of Screening Levels

Contaminant	Highest Measured Concentration	Screening Level
Tetrachloroethylene (PCE)	5.46 µg/l	0.46 µg/l
Dichloro-difluoromethane	850 µg/l	100 µg/l
Benzene	0.15 µg/l	0.097 µg/l

Kennedy/Jenks 2018

As soil and soil vapor contaminant levels are higher than the screening levels, a site-specific human health risk assessment is necessary to evaluate the potential for unacceptable risks if the project site were redeveloped for residential use without any mitigation.

Screening-Level Human Health Risk Assessment

Since a number of sample results exceed the RSLs and DTSC SLs, a screening - level Human Health Risk Assessment (HHRA) was conducted consistent with DTSC HERO HHRA Note 4 - October 2016. The majority of the soil and soil gas sample results from the environmental investigations in the project site—as part of the CLRRA investigation and summarized in the Report of Findings—were below applicable screening levels. The small percentage of samples that did exceed risk-based screening levels were primarily in Zone 1. The sporadic occurrence and relatively low concentration of detected constituents appear to be consistent with material imported from local construction sites and placed primarily into the upper portion of the former quarry pit.

Based on the planned future land use, risks were calculated assuming residential exposure scenarios. Soil screening levels included potential exposure via soil ingestion, dermal exposure, and inhalation of particulates and volatilization to outdoor air. The soil screening levels do not account for exposure to indoor air due to vapor intrusion, which is evaluated using soil vapor screening levels for the soil gas results. In the screening level risk assessment, the maximum detected concentrations were used as the exposure point concentrations for both the soil and soil vapor samples.

Screening-level risks were calculated for noncancer and cancer toxic effects on target organ systems. The noncancer screening-level risks were calculated by dividing the maximum detected concentration by the noncancer screening level. The cancer screening-level risks were calculated by dividing the maximum detected concentration by the cancer screening level and multiplying by 0.000001, or 1 x 10^{-6}. The noncancer screening-level risks were summed for all chemicals to calculate the cumulative hazard index for both soil and soil vapor. The cumulative hazard index was compared with DTSC's target residential screening level hazard index of 1. The cancer screening-level risks were summed for all chemicals to calculate the cumulative cancer risk for both soil and soil vapor. The cumulative cancer risk was compared with DTSC's target screening level cancer risk of 1 x 10^{-6}. The risk driver for both the hazard index and the carcinogenic risk was arsenic, which was found above naturally occurring background levels in one soil sample at a depth of 25 feet. DTSC established a regional background arsenic concentration of 12 mg/kg in soil that can be used as a screening tool for sites throughout Southern California. If arsenic is not included, the hazard index is below the level of concern, and the carcinogenic risk decreases to 1.72 E-05, which is below the cancer screening level risk of 1 x 10^{-6}.

For soil, the cumulative hazard index of 73 is higher than DTSC's target hazard index, indicating the potential for adverse noncancer effects. The cumulative cancer risk of 3 x 10-4 is higher than DTSC's target cancer risk, indicating the potential for unacceptable cancer risks. The noncancer hazard and cancer risks are primarily due to arsenic. Hexavalent chromium and benzo(a)pyrene also have cancer risks slightly above DTSC's target cancer risk.

Soil vapor screening levels were derived from the indoor air screening levels using DTSC's default attenuation factor. Because the land use is future residential, the default attenuation factor of 0.001 was used (DTSC 2011).

The DTSC is also utilizing an attenuation factor of 0.03 recommended by EPA for protecting indoor air concentrations. Until the new factor is officially implemented, DTSC recommends soil vapor data be screened by using both the current (0.001) and pending (0.003) attenuation factor to calculate vapor intrusion.

For soil vapor, the cumulative hazard index of 1 is equal to DTSC's target hazard index, indicating that adverse noncancer effects are unlikely. The cumulative cancer risk of 1×10^{-5} is higher than DTSC's target cancer risk, indicating the potential for unacceptable cancer risks. The cancer risk is primarily due to tetrachloroethene (PCE), which was detected in 6 out of 46 soil gas samples; benzene also has a cancer risk slightly above DTSC's target cancer risk.

The screening level risk assessment was conducted to evaluate risks from chemicals in soil and soil vapor at the development area under future residential uses. The risks from chemicals in soil and soil vapor are higher than DTSC's target risk levels, indicating the potential for unacceptable risks if the development area were redeveloped for residential use without any mitigation. However, screening-level risk assessments are intended to be conservative, so the results do not necessarily determine that an unacceptable risk exists at the development area and this would be considered a significant impact. The potential unacceptable risks associated with future residential use could be mitigated by minimizing or eliminating the exposure pathways to soil and soil vapor in the development area.

The Report of Findings did not include a recommended remediation measure for controlling potential hazardous materials release from soil and soil vapors, but outlined potential solutions, such as a vapor barrier, cap, or land use restrictions, under the proposed project development area to reduce human health risks to building occupants. The project would involve a clean cap of soil below the residential structures, which will consist of native soil from onsite. A Response Plan would be developed that would include specific information pertaining to the soil cap that would be implemented during project development, including the minimum thickness of the cap. This impact is potentially significant without mitigation.

Impact 5.7-4 Project construction and operation would not involve hazardous emissions or use of hazardous materials posing substantial health risks to persons at schools within 0.25 mile of the project site. [Threshold H-3]

One school is within 0.25 mile of the project site, Walteria Elementary School at 24456 Madison Street in Torrance, about 1,150 feet to the northeast. Project operation would involve use of only small amounts of hazardous materials that would not pose substantial hazards to persons at the school. Dust generated as a result of grading and development operations would potentially contain contaminated fill material listed in the preceding sections. Dust generation and control measures would be further addressed in the Response Plan, and would be controlled with Construction BMPs involving regular, routine watering of the site to ensure participate matter does not become airborne, as discussed in Section 5-2, Air Quality. Project construction would generate diesel emissions which are considered hazardous. However, the project construction period would be temporary, lasting approximately 2.5 years. Health risk is based upon the conservative assumption that exposure is continuous over a 70-year lifetime. A risk determination is not appropriate for short-term construction activities. Exposure to airborne particulate matter during grading and construction operations would be controlled via Construction BMPs. Additionally, dust generation and control measures would be

further discussed in the Response Plan to ensure silica dust and other matter would not pose a threat. Exposure to diesel exhaust during the construction period would not pose substantial hazards to persons at Walteria Elementary School. In addition, the truck route is along Hawthorne Boulevard and does not include Madison Street. Impacts would be less than significant.

5.7.1.4 CUMULATIVE IMPACTS

The area considered for cumulative hazardous materials impacts is the City of Torrance, the service area of the Torrance Fire Department, which manages four hazardous materials programs in the city. Construction and operation of other projects in Torrance would use hazardous materials and thus could pose hazards to people or the environment. Other projects would use hazardous materials in accordance with the same laws and regulations described above. Cumulative impacts would be less than significant after regulatory compliance, and project impacts would not be cumulatively considerable.

5.7.1.5 EXISTING REGULATIONS

Federal

- United States Code Title 42 Sections 9601 et seq.: Comprehensive Environmental Response, Compensation and Liability Act and Superfund Amendments and Reauthorization Act
- United States Code Title 42, Sections 6901 et seq.: Resource Conservation and Recovery Act
- United States Code Title 42 Sections 11001 et seq: Emergency Planning & Community Right to Know Act
- United States Code Title 49 Sections 5101 et seq.: Hazardous Materials Transportation Act

State

- California Health and Safety Code Chapter 6.95 (Hazardous Materials Release Response Plans and Inventory)
- California Code of Regulations, Title 19, Section 2729: Business Emergency Plans
- California Building Code (California Code of Regulations, Title 24, Part 2)
- California Fire Code (California Code of Regulations, Title 24, Part 9)

5.7.1.6 LEVEL OF SIGNIFICANCE BEFORE MITIGATION

Upon implementation of regulatory requirements and standard conditions of approval, some impacts would be less than significant 5.7-1, 5.7-2, and 5.7-4.

Without mitigation, the following impacts would be **potentially significant**:

- **Impact 5.7-3:** Fill material within the development area from uncontrolled backfilling, including material from the former Shell site could cause a significant hazard to the environment with implementation of the proposed project.

5.7.1.7 MITIGATION MEASURES

Impact 5.7-3

HAZ-1 Prior to issuance of any permit by the City of Torrance, the project applicant shall enter into a Land Use Covenant (LUC) Agreement with the DTSC, pursuant to the CLRRA between the same parties, and have that LUC recorded by the Los Angeles County Registrar/Recorder-County Clerk. The LUC shall specify the following:

- The Applicant shall develop a Response Plan and comply with the provisions contained therein as reviewed and approved by DTSC. The Response Plan will be subject to DTSC's public notice requirements, which at a minimum will include the development of a community profile and the distribution of a 30-day public review notice. The Response Plan protective features shall include, but not limited to, the following features.
- The hazardous materials in soil and soil vapor which are identified as posing potentially unacceptable human health risks in the Fill Material Investigation described in the Report of Findings for the project site completed by Kennedy/Jenks Consultants in August 2018.
- Engineering controls will be developed in consultation with DTSC, which are required to prevent vapor intrusion from backfill soil in the mine pit into the proposed buildings at concentrations that could pose substantial health risks. The preliminary selection of engineering control is a vapor barrier cap or subslab liner. A subslab liner alone may not be sufficient to reduce vapor intrusion to acceptable levels; thus, DTSC may require one or both of the following additional options:
  - A subslab venting system under residential buildings, which typically consists of venting material (sand or gravel) below the subslab liner to allow soil gas to diffuse laterally to collection pipes for discharge to the atmosphere.
  - A subslab depressurization system under residential, typically consisting of a motorized blower to lower the air pressure under the building, which inhibits soil gases from entering the building, plus a series of collection and discharge pipes.
- The DTSC shall monitor the construction of the mitigation system and the occupancy permit shall not be issued until the DTSC certifies the site as safe for occupancy.
- An Operations and Maintenance (O&M) Monitoring Plan for the engineering controls. The O&M Plan shall:
  - Require periodic monitoring of the engineering control in perpetuity.
  - Require the applicant to provide a dedicated funding source for such perpetual monitoring.
  - Identify the O&M Professional, who must be a California-registered civil engineer or engineering geologist, and who will be responsible for: (1) inspecting and

monitoring the engineering controls; (2) five-year reviews; (3) preparing and signing Annual Inspection Reports and Five-Year Review Reports; and (4) preparing and signing Completion Reports for intrusive activities and cap.

- Provide the O&M Professional with right of access to the property required to carry out their duties.

- Institutional controls including, but not limited to, the following:
  - Tenants and prospective tenants shall be provided written notification of the hazardous materials in soils under the proposed development and the Land Use Covenant, engineering controls, and institutional controls in place to reduce entailing human health risks.
  - Prohibition on activities, such as drilling or excavating, that could damage the subslab liner.
  - Prohibition on activities that would disturb impacted soil without DTSC approval
  - Inspection and reporting requirements for the engineering controls in adherence to DTSC regulations.
  - Provide DTSC with right of access to the property to inspect and monitor the engineering controls.
  - Provide written notification to future buyers and tenants of the property of prohibited activities and the reasons for such prohibition.
  - A soil management plan shall be prepared that provides procedures for the effective handling of soil onsite and prompt communication of the discovery of unknown environmental features.

HAZ- 2 The Applicant or his contractor shall prepare a dust control plan consistent with the requirements of SCAQMD Rule 1466-Control of Particulate Emissions from Soils with Toxic Air Contaminants. The Dust Control Plan shall include at a minimum:

- As approved by the SCAQMD, ambient PM10 monitoring, dust control measures, notification, signage, and recordkeeping requirements.
- Alternative dust control measures, ambient dust concentration limits, and other provisions may be implemented upon approval of the SCAQMD by the Executive Officer.
- In the event that a limited soil excavation is required during implementation of the Response Plan, as discussed in Section 5-2.21, Construction Emissions, of the Air Quality chapter, contingencies for soil excavation shall include adherence to all applicable Construction BMPs and regulatory standards.

5.7.1.8 LEVEL OF SIGNIFICANCE AFTER MITIGATION

Impact 5.7-3

Soil and soil vapor in the backfilled mine pit are contaminated with hazardous materials at concentrations that could pose potential human health risks. The implementation of engineering controls, including operation and maintenance, and institutional controls, would enact a land use covenant at the project site to prevent vapor intrusion into the site. Additionally, a soil cap of depth to be specified in the Response Plan would be implemented at the project site to protect building occupants. Mitigation Measure HAZ-2 would ensure that potential toxic fugitive dust would not pose a risk to human health by monitoring PM_{10} levels during excavation activities, and utilizing appropriate dust suppressant BMPs to ensure that fugitive dust is minimized and exposure is reduced to less than significant levels. In addition, Mitigation Measure GEO-1 would be implemented to reduce potential impacts. Impacts would be less than significant after implementation of Mitigation Measures HAZ-1, HAZ-2, and GEO-1.

5.7.2 Wildfire and Emergency Response Planning

Wildfire risk is defined here as the likelihood of a fire times the consequences of a fire, where consequences include the intensity of a fire; resources—such as people, structures, cultural resources, habitat, and forestry resources—exposed to a fire; and the effects of a fire on those resources. Wildfire likelihood and intensity are considered together qualitatively as wildfire potential, which depends on three main factors: fuel (wildland vegetation), topography, and weather. The discussion of effects in this section focuses on adverse effects of wildfires.

5.7.2.1 ENVIRONMENTAL SETTING

Regulatory Background

State Regulations

Fire Hazard Severity Zones

The California Department of Forestry and Fire Protection (CAL FIRE) designates fire hazard severity zones as authorized under California Government Code Sections 51175 et seq. CAL FIRE considers many factors such as fire history, existing and potential fuel (natural vegetation), flame length, blowing embers, terrain, and typical weather for the area. There are three hazard zones in state responsibility areas: moderate, high and very high. CAL FIRE designates fire hazard severity zones (FHSZ) within three types of areas, depending on what level of government is financially responsible for fire protection:

- LRA: Local Responsibility Area—cities and counties are financially responsible for wildfire protection
- SRA: State Responsibility Area
- FRA: Federal Responsibility Area

Local

Building Code

The California Building Standards Code (CBC), contained in Part 2 of 24 CCR, identifies building design standards, including those for fire safety. The CBC is based on the International Building Code but has been amended for California conditions. The CBC is updated every three years, and the current 2016 CBC went into effect January 1, 2017. It is effective statewide, but a local jurisdiction may adopt more restrictive standards based on local conditions under specific amendment rules prescribed by the State Building Standards Commission. Commercial and residential buildings are plan checked by local city and county building officials for compliance with the CBC. Typical fire safety requirements of the CBC include the installation of fire sprinklers in all new residential, high rise, and hazardous materials buildings; the establishment of fire resistance standards for fire doors, building materials, and particular types of construction; and clearance of debris and vegetation within a prescribed distance from occupied structures in wildfire hazard areas.

Emergency Management Agency

The Governor's Office of Emergency Services (Cal OES) was established as part of the Governor's Office on January 1, 2009—created by Assembly Bill (AB) 38 (Nava), which merged the duties, powers, purposes, and responsibilities of the former Governor's Office of Emergency Services with those of the Governor's Office of Homeland Security. Cal OES is responsible for the coordination of overall state agency response to major disasters in support of local government. The agency is responsible for ensuring the state's readiness to respond to and recover from all hazards—natural, manmade, emergencies, and disasters—and for assisting local governments in their emergency preparedness, response, recovery, and hazard mitigation efforts.

Department of Forestry and Fire Protection

CAL FIRE has mapped fire threat potential throughout California (CAL FIRE 2018). CAL FIRE ranks fire threat based on the availability of fuel and the likelihood of an area burning (based on topography, fire history, and climate). The rankings include no fire threat, moderate, high, and very high fire threat. Additionally, CAL FIRE produced the 2018 Strategic Fire Plan for California, which contains goals, objectives, and policies to prepare for and mitigate for the effects of fire on California's natural and built environments (CAL FIRE 2018).

Fire Code

The California Fire Code (CFC), in Part 9 of 24 CCR, incorporates by adoption the International Fire Code of the International Code Council, with California amendments. The CFC is updated every 3 years, and the current 2016 CFC went into effect January 1, 2017. It is effective statewide but a local jurisdiction may adopt more restrictive standards based on local conditions under specific amendment rules prescribed by the State Building Standards Commission. The CFC regulates building standards set forth in the CBC, fire department access, fire protection systems and devices, fire and explosion hazards safety, hazardous materials storage and use, and standards for building inspection.

Building Standards for Structures in Fire Hazard Severity Zones

California Building Code, Chapter 7A

Chapter 7A of the CBC, Materials and Methods for Exterior Wildfire Exposure, prescribes building materials and construction methods for new buildings in a Fire Hazard Severity Zone. Chapter 7A contains requirements for roofing; attic ventilation; exterior walls; exterior windows and glazing; exterior doors; decking; protection of underfloor, appendages, and floor projections; and ancillary structures. The CBC is updated on a three-year cycle; the current 2016 CBC took effect in January 2017.

California Fire Code, Chapter 49

Chapter 49 of the CFC, Requirements for Wildland-Urban Interface Fire Areas, prescribes construction materials and methods in fire hazard severity zones; requirements generally parallel CBC Chapter 7A. The CFC is updated on a three-year cycle; the current 2016 CFC took effect in January 2017.

Defensible Space

California Public Resources Code Sections 4291 et seq. requires that brush, flammable vegetation, or combustible growth within 100 feet of buildings be removed. Vegetation that is more than 30 feet from the building, less than 18 inches high, and important for soil stability may be maintained, as may single specimens of trees or other vegetation that are maintained so as to manage fuels and not form a means of rapid fire transmission from other nearby vegetation to a structure. Requirements regarding hazardous vegetation and fuel management are also contained in Sections 4906 and 4907 of the California Fire Code.

California Public Resources Code Section 4290 requires that all parcels one acre or larger shall provide a minimum 30-foot setback for buildings from all property lines and/or the center of the road.

City of Torrance

The 2016 CBC is adopted with certain modifications as Sections 81.1.1 et seq. of the City of Torrance Municipal Code.

The 2016 CFC is adopted with certain modifications as Sections 85.1.010 et. seq. of the City of Torrance Municipal Code.

Existing Conditions

Wildfire Background

A wildfire is an unplanned ignition in the wildland. Wildfires burn in many types of vegetation—forest, woodland, scrub (including chaparral, sage scrub, and desert scrub), and grassland (CAL FIRE 1999). Many species of native California plants are adapted to fire. Chaparral shrubs recover from fire in two ways: 1, woody root crowns or burls below the soil surface survive a fire and resprout; and 2, shrubs (various species of *Manzanita* and *Ceanothus*) that are killed by fire produce seeds requiring intense heat from a fire to germinate (Santa Barbara City College 2010). Many species of conifers have seed cones requiring fire to open (CAL FIRE 1999).

Although the term *wildfire* may suggest natural origins, humans were responsible for igniting 84 percent of wildfires in the United States between 1992 and 2012 (Balch, Jennifer, et al. 2017). The three most common

types of causes of human-caused wildfires are debris burning (logging slash, farm fields, trash, etc.), arson, and equipment use (PBI 2007).[4] Lightning is the major natural cause of wildfire in the United States (Balch, Jennifer, et al. 2017).

An analysis of US Forest Service wildfire data from 1986 to 1996 determined that 95 percent of human-caused wildfires and 90 percent of all wildfires occurred within 0.5 mile of a road, and that about 61 percent of all wildfires and 55 percent of human-caused wildfires occurred within approximately 650 feet (200 meters) of a road. The study concluded that the increase in human-caused ignition greatly outweighs the benefits of increased access for firefighters (PBI 2007).

CAL FIRE determined that 16 wildfires in northern California in October 2017 were caused by electric power and distribution lines, conductors, and the failure of power poles (CAL FIRE 2018a, 2018b).

Wildfire Trends in Recent Decades

Wildfire season in the West recently has lengthened from an average of five to seven months, and the number of large wildfires (>1,000 acres) has increased from 140 to 250 per year. This is occurring as average annual temperatures in the West have risen by nearly two degrees Fahrenheit since the 1970s and the winter snow pack has declined. Increases in acres burning can now be attributed, in part, to climate change (GEOS 2018). Wildfires now burn year-round in California (SBFFP and CAL FIRE 2018). Warming and drying due to human-caused climate change is estimated to have approximately doubled the total area burned by forest fire in the western United States between 1984 and 2015 compared to the total area expected to have burned without climate change (Abatzoglou and Williams 2016). Frequent wildfires reduce recovery of shrubs and trees—especially shrubs and trees that must produce seeds to regenerate after fire—and increase invasion of nonnative grasses, that is, tend to convert native shrublands to nonnative grassland (USGS 2012). Nonnative grasses are generally more flammable than the chaparral and sage scrub vegetation that is replaced; thus, such conversion exacerbates wildfire hazards (UC ANR 2009).[5]

Wildfire Suppression

Wildfire suppression involves a combination of passive measures, put in place before a fire starts, and active suppression measures. Active measures involve fire engines, crews, bulldozers, airplanes, helicopters, and command elements. Passive measures consist of defensible space, fire-resistant landscaping, fire resistant construction, good housekeeping, sufficient water onsite for firefighting, egress routes for evacuating residents, and ingress routes for firefighters (LACCEO 2014).

Wildfire suppression strategy in Los Angeles County is centered on an aggressive initial attack aimed at quickly extinguishing the fire. Suppression efforts begin with establishing a secure starting point (anchoring). Firefighters attack the fire from the sides (flanking). Firefighting resources are committed to protecting assets in front of the fire, while additional resources are moved into areas the primary fire has already passed through

[4] Miscellaneous human activities (unspecified) is ranked above equipment use in percentage of wildfires caused.

[5] Nonnative annual grasses are more flammable than trees and shrubs because the grasses complete their life cycle in the winter and spring, leaving highly flammable dead plant material in the summer and fall fire season, and because they burn in a wider variety of weather conditions than native shrubs and trees do. See UC ANR 2009.

to protect assets from residual embers and fire (LACCEO 2014). Controlled fires, or burnouts, are used in establishing fire lines and, in some cases, to consume fuel between a fire line and the edge of the fire.

After a fire is contained within a fire line, firefighters extinguish hot spots near the fire line with water from fire engines and helicopters. Ground crews then move through the burned area with water and hoes extinguishing hot or glowing embers and checking under stumps and logs for embers (Idaho Firewise 2018).

While wildfire is a necessary component of local ecosystems, in most cases, unchecked wildfire is no longer a viable fire/fuel management option in Los Angeles County due to the widespread intermixing of developed land uses in wildlands. Uncontrolled fires must be quickly extinguished. Prescribed or controlled burns are used in place of uncontrolled wildfire (LACCEO 2014).

Debris Flows After Wildfire

Postfire landslide hazards include fast-moving, highly destructive debris flows that can occur in the years immediately after wildfires in response to high intensity rainfall events, and flows that are generated over longer time periods that are accompanied by root decay and loss of soil strength. Post-fire debris flows are particularly hazardous because they can occur with little warning, exert great impulsive loads on objects in their paths, strip vegetation, block drainage ways, damage structures, and endanger human life. Debris flows differ from mudflows in that debris flows are composed of larger particles.

Fires increase the potential for debris flows in two ways:

1. Fires may bake soil into a hard crust that repels water.
2. Fires destroy vegetation that would slow and absorb rainfall and whose roots would help stabilize soil. (USGS 2018)

Post-fire debris flows are most common in the two years after a fire. It takes much less rainfall to trigger debris flows from burned basins than from unburned areas. In southern California, as little as 0.3 inch of rainfall in 30 minutes has triggered debris flows, and any storm that has intensities greater than about 0.4 inch per hour can produce debris flows (USGS 2017). The burning of vegetation and soil on slopes more than doubles the rate that water will run off into watercourses (CGS 2018a).

Debris flows killed 23 people in Montecito in Santa Barbara County in January 2018 after the Thomas Fire burned near the area in December 2017 (CGS 2018b).

Wildfire Effects

Wildfire Spread to Structures

Wildfires ignite structures three ways: burning embers landing on the structure or flammable material next to the structure; direct flame contact; and radiant heat from fire close to the structure (IBHS 2018). Embers are the most important cause of home ignition. Two out of every three homes destroyed during the 2007 Witch Creek fire in San Diego County were ignited either directly or indirectly by wind-dispersed, wildfire-generated, burning or glowing embers and not from the actual flames of the fire (FIRESafe MARIN 2018). Embers ignite

structures by entering through attic vents, igniting flammable materials around the home (litter in the roof gutter, wood stacks, or wood fencing), or finding their way under roofing materials (California Chaparral Institute 2018).

Wildland-Urban Interface

A wildland urban interface (WUI) is any area where structures and other human developments meet or intermingle with wildland vegetative fuels—the shrubs, trees and grasses. These plants and wildland areas have evolved over time to burn (San Mateo County Sheriff's Office 2015). The Association of Bay Area Governments defines the WUI as communities within 1.5 miles of a potential wildfire source as determined by CAL FIRE (ABAG 2011).

Developments in the wildland-urban interface exacerbate fire occurrence and fire spread in several ways.

- Increased numbers of human-caused wildfires.
- Wildfires become harder to fight.
- Firefighting resources are diverted from containing the wildfire to protecting lives and homes.
- Letting natural fires burn becomes impossible, leading to build-up of fuel and increasing wildfire hazard further. (Radeloff, Volker, et al., 2018)
- Increased fire frequency tends to eliminate native shrubs, which are replaced by weedy, highly flammable annual grasslands. (USGS 2012)

CAL FIRE estimated in 2010 that there were about three million housing units in California in fire hazard severity zones and potentially at risk from wildland fire—that is, just over 20 percent of the total housing units in the state (SBFFP and CAL FIRE 2018).

Development of Infrastructure and Wildfire Risk

Developments in or near fire hazard severity zones require the construction and installation of infrastructure including roads and power lines. Development of such infrastructure may increase wildfire risks in the affected areas (see the discussions of roads and power lines, above).

Air Pollution from Wildfire

Smoke is made up of a complex mixture of gases and fine particles produced when wood and other organic materials burn. The biggest health threat from smoke is from fine particles. These microscopic particles can penetrate deep into the lungs. They can cause a range of health problems, from burning eyes and a runny nose to aggravated chronic heart and lung diseases. Exposure to particle pollution is even linked to premature death. Some populations are more sensitive than others to smoke—for instance, people with heart or lung diseases, the elderly, children, people with diabetes, and pregnant women (Airnow 2018).

During the Camp Fire in Butte County, California, in November 2018, portions of northern California were identified as having the worst air pollution in the world (Vox.com 2018).

Benefits of Wildfire

Wildfires have several favorable effects, including removing underbrush and debris including dead plant material, thus providing space and sunlight for new grasses, herbs, and shrubs and aiding regeneration of fire-dependent plant species (CAL FIRE 2013a). The discussion of wildfire risks in this section focuses mainly on adverse effects of wildfire. See also the description of wildfire strategy in Los Angeles County, above, which focuses on rapidly extinguishing fires.

Reducing Wildfire Risks

Design or retrofit features for minimizing wildfire risks to new or existing structures include ember-resistant attic vents, nonflammable roofing, and exterior under-eave or rooftop sprinklers (California Chaparral Institute 2018). Nonflammable roofing materials include asphalt fiberglass composition shingles and concrete or clay tiles (IBHS 2018).

Wildfire risks to structures are also decreased via reduction of vegetation, usually within 100 feet of a structure. CAL FIRE divides this 100-foot buffer into two zones:

- A "Lean, Clean, and Green Zone" within 30 feet of the structure. This zone should be clear of all flammable vegetation and dead or dying plants; all trees and vegetation in this zone should be well pruned and maintained.
- A "Reduced Fuel Zone" extending the remaining 70 feet. Surface litter—such as fallen leaves, twigs, bark, etc.—in this zone should not exceed a depth of three inches. Horizontal spacing must be maintained between shrubs and trees; the amount of spacing depends on the grade of the slope and the size of the plants. (CAL FIRE 2013b)

Wildfire Potential in the Project Region

The probability of future wildfires in the City of Palos Verdes Estates is considered low; however, the severity of such events is considered high, per the City of Palos Verdes Estate's Local Hazard Mitigation Plan (PVE 2018).

Chaparral and coastal sage scrub vegetation in the region are highly flammable. Many chaparral species require fire to spawn regeneration. Many species invite fire through the production of plant materials with large surface-to-volume ratios, volatile oils, and through periodic die-back of vegetation (PVE and RHE 2013).

Areas where annual precipitation is less than 30 inches per year are extremely fire susceptible. High-risk areas in Southern California share a hot, dry season in late summer and early fall when high temperatures and low humidity favor fire activity. The so-called "Santa Ana" winds create a particularly high risk, as they can rapidly spread what might otherwise be a small fire. Topography influences the movement of air, thereby directing a fire course. For example, the rate of wildfire spread upslope is proportional to the grade of the slope. Gulches and canyons can funnel air and act as chimneys, which intensify fire behavior and cause the fire to spread faster (PVE and RHE 2013).

The entire cities of Palos Verdes Estates and Rolling Hills Estates are designated Very High Fire Hazard Severity Zones (VHFHSZs) (CAL FIRE 2011a, 2011b). In January 2018 there were an estimated 5,298 housing units in Palos Verdes Estates and 3,101 housing units in Rolling Hills Estates (CDF 2018). Numbers of nonresidential structures in the cities are unavailable; however, in 2015, there were 2,313 workers in Palos Verdes Estates and 4,174 workers in Rolling Hills Estates (USCB 2019). On the Palos Verdes Peninsula, the entire city of Rolling Hills and nearly the entire city of Rancho Palos Verdes are also designated VHFHSZs, along with some small areas of the Community of San Pedro in the City of Los Angeles (CAL FIRE 2011c). The nearest proposed apartment building would be approximately 295 feet northeast of the VHFHSZ. Project development would place residents near a wildfire hazard zone.

Wildfire History of the Palos Verdes Peninsula

The following fires are identified in the Local Hazard Mitigation Plan for the cities of Palos Verdes Estates and Rolling Hills Estates:

1923 brush fire, 4,000 acres

1967 45 acres in Portuguese Bend area

1973 900 acres; 24 structures destroyed

2005 200 acres

2009 230 acres; damaged 6 houses

2012 15 acres (PVE and RHE 2013)

Project Site

The project site is not in a Fire Hazard Severity Zone. However, the current project-site vegetation consists of California sagebrush, nonnative grassland, ornamental vegetation, toyon chaparral, and upland mustards semi-native stands (Dudek 2017), all of which could fuel a wildfire. Most of the project site burned in a 1946 fire that burned 385 acres extending from the project site east about 1.8 miles to the present-day Rolling Hills Golf Course (Data Basin 2019)[6].

Firefighting Resources

The Torrance Fire Department would provide fire protection and emergency medical services to the project. The three closest TFD fire stations to the project site are Station 2 at 25135 Robinson Way, approximately 0.7 mile east of the site, Station 4, at 5205 Calle Mayor, approximately 1.4 miles to the northwest, and Station 6, at 21401 Del Amo Circle, approximately 2.35 miles to the north (TFD 2017). Equipment at these stations include an engine company and paramedic assessment at Station 2; an engine company and paramedic rescue at Station 4; and an engine company, ladder truck company and paramedic rescue at Station 6. Preliminary response would

[6] The 1946 Fire was not listed under the Local Hazard Mitigation Plan for the cities of Palos Verdes Estates and Rolling Hills Estates; however, it was recorded under United States Department of Agriculture Forest Service Fire History Data from 19250 to 2007.

come from stations closest to the project site, and additional response from the ladder company at Station 6 to assist in multi-story fires.

The Los Angeles County Fire Department serves the cities of Palos Verdes Estates and Rolling Hills Estates. The two nearest LACoFD stations to the site are Station 106 at 27413 Indian Peak Road in the City of Rolling Hills Estates, approximately 2.2 miles to the southwest; and Station 2 at 340 Palos Verdes Drive West in the City of Palos Verdes Estates, approximately 2.2 miles to the west (USGS 2017). The LACoFD is one of the largest emergency service agencies in the world.

Fire suppression is an integrated, inter-agency effort. The state is divided into six regions in the California Fire Service and Rescue Emergency Mutual Aid System established by the California Office of Emergency Services (Cal OES). Los Angeles County is in Region 1, consisting of coastal counties from Orange County north to San Luis Obispo County. In the event assistance is needed from other agencies, mutual aid would be lent by other agencies in Region 1 first, then other regions in California.[7]

Fire hazard severity zones are divided into Local Responsibility Areas (LRA), State Responsibility Areas (SRA), and Federal Responsibility Areas (FRA), based on the level of government with financial responsibility for wildland fire protection. LACoFD contracts with the State to provide fire protection in SRA in Los Angeles County. There are 515,817 acres of SRA in LACoFD's jurisdiction. All of the FHSZs in the Palos Verdes Peninsula are within LRA (LACCEO 2014).

Emergency Response Planning

Torrance Fire Department Emergency Services is charged with emergency response planning for the City, including prevention, preparedness, response, and recovery (Torrance 2009). The City of Torrance Emergency Operations Plan was updated in 2010. The City is currently updating its Local Hazard Mitigation Plan (LHMP); a public review draft LHMP was issued by the City in September 2016. Hawthorne Boulevard is identified as an evacuation route in the LHMP (Torrance 2016).

5.7.2.2 THRESHOLDS OF SIGNIFICANCE

According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if the project would: [8]

H-5 Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

H-6 Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire

[7] In many other counties mutual aid would be lent by other agencies in the county first, then other agencies in the region. However, as the LACoFD is one of the largest public safety agencies in the world, mutual aid is expected to be lent by other agencies in Region 1 first.

[8] The significance thresholds set forth here are from the CEQA Guidelines Update approved by the California Office of Administrative Law in December 2018, and include the Wildfire thresholds in addition to Hazards thresholds.

H-7 Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment

H-8 Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes.

5.7.2.3 ENVIRONMENTAL IMPACTS

The applicable thresholds are identified in brackets after the impact statement.

IMPACT 5.7.5: Project construction could impede emergency access to properties by way of Via Valmonte west and northwest of the project site; Operation of the project would not impede emergency access or interfere with an adopted emergency response plan. [Threshold H-5]

Construction of the proposed project is anticipated to require 29 months and would consist of the following phases:

- Grading: 4 months
- Building Construction, Parking Garage: 7 months
- Paving: 2 months
- Building Construction, Residential (above parking): 18 months
- Application of Architectural Coatings: 3 months

The 4-month grading phase will include site grading, remediation, temporary shoring, and installation of utilities. The temporary shoring would be approximately 125 feet long.

Grading is currently estimated to involve 120,915 cubic yards (CY) of cut and 1,646 CY of fill, resulting in 119,270 CY of soil for export. Assuming a haul truck capacity of 16 CY per truck, earth-moving activities would result in approximately 7,455 round trips (14,910 one-way truck trips) during the grading phase. Construction staging on City streets could potentially impede emergency access to surrounding neighborhoods. Based on these possibilities, there will be a potentially significant impact without mitigation.

Operation of the project would not impede emergency access. Raised traffic movement barriers would be installed at the Via Valmonte driveway to allow emergency vehicles to access the property from Via Valmonte. The proposed roads and driveways would provide emergency access to all proposed buildings, conforming to CFC Section 503, as incorporated into the City's Municipal Code Section 85.2.060. On-site circulation would not result in significant impacts related to site access, vehicle-pedestrian conflicts, or emergency access; the project would not impede evacuation routes. Project implementation would comply with the City's Emergency Operations Plan. Operational impacts would be less than significant.

IMPACT 5.7-6: Project development would not exacerbate wildfire risks due to slope, prevailing winds, and other factors, and would not thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of wildfire. [Threshold H-6]

Project development would not exacerbate wildfire risks. The project site consists mostly of nonnative grassland and disturbed area, with smaller areas of toyon chaparral, California sagebrush, upland mustards/seminatural stands, and ornamental vegetation; vegetation is sparse on the backfilled mine pit. The project site is bounded to the south and southeast by upland mustards, California sagebrush, toyon chaparral, and ornamental vegetation (Dudek 2016). Project development would include clearing vegetation from the project site. A 0.99-acre buffer along the sides of the development area would be maintained as a brush management zone pursuant to California Public Resources Code Sections 4291 et seq. and California Fire Code Chapter 49, Requirements for Wildland-Urban Interface Fire Areas. Building exteriors would consist of stucco and trespa, a laminate made of wood-based fiber and resin. Approximately 75 percent of the project site would be impervious surfaces, most of which are nonflammable.

The project site is below a steep slope, up to 250 feet high, from nearby FHSZs in the cities of Palos Verdes Estates and Rolling Hills Estates. The rate of wildfire spread on a slope is proportional to the grade upslope; thus, site topography would not exacerbate wildfire risk.

The nearest wind direction information to the project site available from the California Air Resources Board is for King Harbor in the City of Redondo Beach, about two miles northwest of the project site. The prevailing wind at King Harbor is from the west-southwest (CARB 2003). Areas west-southwest of the project site are in VHFHSZs in Palos Verdes Estates and Rolling Hills Estates.

Wildfire hazards in southern California are at their greatest when Santa Ana winds—hot, dry, northeasterly winds—are blowing, usually in autumn. Northeasterly winds would push a wildfire in VHFHSZ west and southwest of the project site further southwest, away from the project site.

Project development would not exacerbate wildfire risks in VHFHSZs upwind from the project site or within the project site, and thus would not expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of wildfire. Impacts would be less than significant.

Impact 5.7-7: Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment. [Threshold H-7]

Project development would not require construction of off-site infrastructure other than a short storm drain, water line, and sewer line segments from the project site to Via Valmonte and a short water line segment from the project site to Hawthorne Boulevard. The off-site infrastructure would be in roadways and would not exacerbate wildfire risks. Once completed, all water and wastewater line improvements in the roadway would be underground, and the roadway would be to its current repaved and expanded per updated project design specifications that would widen frontage roadway segments. During construction, standard conditions placed on encroachment permits that require notification of emergency services, paths of travel, and traffic

management will ensure that the roadways remain available for emergency evacuation. Project development would not involve construction of infrastructure into nearby FHSZs. Impacts would be less than significant.

Impact 5.7-8: Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes. [Threshold H-8]

Project drainage and proposed drainage infrastructure are discussed further in Section 5.8, *Hydrology and Water Quality*, of this DEIR. The proposed project is at the base of steep slopes and is not upslope from developed properties. Slope stability for the proposed project respecting debris falling and rockfall are addressed in Section 5.5, *Geology and Soils*. The project includes rockfall barriers and would not pose a landslide hazard to people or structures downslope of the proposed project based on these and other project design measures. Impacts would be less than significant.

5.7.2.4 CUMULATIVE IMPACTS

The area considered for cumulative impacts regarding wildfire hazards is the Palos Verdes Peninsula (Peninsula). The Peninsula is surrounded by broad urbanized areas of the Los Angeles Basin to the north and east, and by the Pacific Ocean to the south and west, and thus the nearest FHSZs to the Peninsula are about 11 miles to the north in the Community of Westchester in the City of Los Angeles. Therefore, wildfire hazards in the Peninsula would not combine with hazards from nearby areas. Approximately 25 square miles of the Peninsula are designated VHFHSZs by CAL FIRE (CAL FIRE 2011c). Some other projects in the region would exacerbate wildfire hazards due to factors such as slope and prevailing winds. Thus, those projects could expose occupants to pollutant concentrations from a wildfire or the uncontrolled spread of wildfire. Some other projects could extend infrastructure such as roads and overhead power lines through VHFHSZs and thus could exacerbate wildfire risk. Some other projects could cause flooding or debris flows due to post-fire slope instability.

Other projects would be mandated to comply with requirements for building materials and construction methods for buildings in FHSZs set forth in the CBC and CFC; and requirements for defensible space set forth in the CFC and in California Public Resources Code Sections 4290 et seq.

All four incorporated cities on the Peninsula are served by the LACoFD. The majority of the LACoFD's operational budget is funded by property taxes and charges for services. Other projects would pay increased property taxes and charges for services; such payments would reduce cumulative wildfire hazard impacts. Cumulative wildfire hazard impacts would be less than significant, and project impacts would not be cumulatively considerable.

5.7.2.5 EXISTING REGULATIONS AND STANDARD CONDITIONS

State

- California Code of Regulations Title 24, Part 2: 2013 California Building Code
- California Code of Regulations Title 24, Part 9: 2013 California Fire Code
- California Public Resources Code Sections 4290 et seq.: setbacks; defensible space

City of Torrance

- Torrance Municipal Code Sections 81.1.1 et seq.: Building Code
- Torrance Municipal Code Sections 85.1.010 et seq.: Fire Code

5.7.2.6 LEVEL OF SIGNIFICANCE BEFORE MITIGATION

Upon implementation of regulatory requirements and standard conditions of approval, some impacts would be less than significant: 5.7-6, 5.7-7, and 5.7-8.

Without mitigation, the following impact would be **potentially significant**:

- Impact 5.7-5 Construction staging along Via Valmonte and Hawthorne Boulevard could impede emergency access to the surrounding community, and specifically restrict access to residential homes located west and northwest of the project site.

5.7.2.7 MITIGATION MEASURES

Impact 5.7-4

Impact 5.7-5 would be mitigated by implementation of Mitigation Measure TR-1, identified below.

TR-1 Prior to the issuance of grading permits, the project applicant shall prepare a Construction Traffic Management Plan in coordination with the City of Torrance City Traffic Engineer. The Plan, at a minimum, shall include the following:

- All construction vehicles accessing the site shall be of legal weight, length, width and height unless oversize load permits are secured from the City and all other agencies through which loads will be carried.
- All trucks used in the construction of this project shall travel only on Truck Routes as defined in Section 61.9.2 of the Torrance Municipal Code.
- All construction traffic shall enter the site from the north via a right turn from southbound Hawthorne Boulevard. All construction traffic shall exit the site via a right turn onto Via Valmonte and then left turn onto northbound Hawthorne Boulevard. No traffic shall be allowed on Via Valmonte west of the site and no construction truck traffic shall be allowed to travel south on Hawthorne Boulevard.
- No construction vehicle(s) shall be allowed at any time to stage or queue on City streets or rights-of-way. All truck staging or queuing shall take place on-site.
- Vehicle parking for all workers at the site shall be accommodated on-site with no worker parking permitted on City streets. The developer shall provide areas for worker parking at all times during construction.

- Construction trucks shall not travel on any street within the City of Torrance on Saturdays and Sundays. Construction trucks shall not travel on any City street before 8:30 AM or after 4:00 PM on weekdays (Monday through Friday).
- Spillage of material of any kind from trucks is prohibited. All construction vehicles shall be enclosed and sealed to prevent any material spillage onto any street in the City.
- Trucks and truck wheels and tires shall be cleaned before entering City streets from the site to prevent any wheel tracking or deposition of material on any City street.
- Haul trucks entering or exiting public streets shall at all times yield to public traffic.
- If hauling operations cause any damage to existing pavement, street, curb and/or gutter along the haul route, the applicant will be fully responsible for repairs. The repairs shall be completed to the satisfaction of the City Engineer.
- All constructed-related parking and staging of vehicles will be kept out of the adjacent public roadways and parking lots and will occur on-site.
- This Plan shall meet standards established in the current California Manual on Uniform Traffic Control Device (MUTCD) as well as City of Torrance requirements.

5.7.2.8 LEVEL OF SIGNIFICANCE AFTER MITIGATION

The mitigation measures would reduce potential impacts of wildfire hazards to less than significant. Project operation is not anticipated to create adverse impacts; project construction would follow all standards, regulations and best management practices. Applicable mitigation measures would ensure that construction vehicle staging would not impede emergency access to the site and surrounding community. Additionally, no significant unavoidable adverse impacts relating to wildfire hazards have been identified.

5.7.3 References

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