

C.4 ENVIRONMENTAL CONTAMINATION

C.4.1 ENVIRONMENTAL BASELINE AND REGULATORY SETTING

The proposed alignment of the SCWC Bolsa Chica Water Transmission Line traverses areas utilized for a variety of uses including: residential housing, commercial uses, military uses, and manufacturing and industrial activities. Land uses, existing and past, are used as potential indicators of hazardous material storage and use. For example, many industrial sites, historic and current, are known or suspected to have soil or groundwater contamination by hazardous substances. Other hazardous materials sources include leaking underground tanks in commercial and industrial areas, contaminated surface runoff, and migration of groundwater plumes from contaminated sites to the pipeline route.

Sites with known or suspected contamination were identified along or near the proposed pipeline route to better define the areas where hazardous waste may impact construction activities. The primary issues are worker health and safety as well as public exposure to hazardous materials during construction and waste handling. Potential impacts on air quality and traffic during waste transport must also be considered. Where encountered, contaminated soil may qualify as hazardous waste and thus require handling and disposal according to local, state, and federal regulations.

C.4.1.1 Environmental Baseline

Land Use

Land use activities associated with hazardous substances along or near the proposed pipeline route include military, industrial, and commercial (such as automotive repair and gas stations). Land uses of concern were identified along the proposed route by review of regulatory agency databases and visual reconnaissance along the route. Following is a general discussion of the land use concerns along the proposed pipeline route. The proposed pipeline would be located in existing roads or utility rights-of-way (ROWs).

North of Lampson Avenue on the proposed route, the alignment is bounded primarily by single-family residences on the east, and the Naval Base Golf Course on the west. The Los Alamitos Armed Forces Reserve Center is located just west of the Naval Base Golf Course. Between Lampson Avenue and the I-405 freeway properties on both sides of the alignment are residential. The central portion of the alignment, from the I-405 freeway to Edinger Avenue, consists of the U.S. Naval Weapons Station along the entire eastern edge and predominantly residential properties along the western edge, with the exception of the large Boeing facility and office complex located along Bolsa Chica Road between Rancho Road and Bolsa Avenue. South of Edinger Avenue, the route is bounded primarily by residential properties on the east and residential and commercial properties on the west. The Los Patos Avenue section of the route has large single-family residences on the north and undeveloped open land on the south (Bolsa Chica Mesa). Commercial properties are scattered along the proposed route, concentrated at

and near the major intersections. Generally, at least one active or former gas station site is located at each major intersection.

Potential Environmental Contamination Analysis

A preliminary environmental assessment was conducted to identify potential sites that could affect construction due to the presence of toxic or hazardous substances, principally contaminated soil and groundwater. The preliminary assessment consisted of a database search, review of agency records, data review and screening, field check of potentially contaminated sites and synthesis of the data.

Searches of Federal, State, and local regulatory agency listings of sites with known or suspected hazardous material contamination were performed by Environmental Data Resources (EDR), dated October 18, 1999. Data were compiled for potentially contaminated sites within a 2,000-foot wide corridor along the proposed route (1,000 feet either side of the alignment). Similar data were compiled for the alternative pipeline routes (see Section D). The principal regulatory directories reviewed for this study, including the date last updated, are listed below:

Federal:

- National Priority List (NPL), May 1999
- Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS), April 1999
- Emergency Response Notification System (ERNS), December 1998
- Resource Conservation and Recovery Act Information System (RCRIS) (includes RCRA Generators), July 1999
- RCRA Corrective Action Sites (CORRACTS), March 1999.

California State:

- Annual Work Plan (AWP, formerly Bond Expenditure Plan, by Cal EPA), March 1999
- CALSITES (formerly ASPIS, Cal EPA), July 1999
- CORTESE - Hazardous Waste Substance Site List, April 1998
- Leaking Underground Storage Tanks Information System (LUST, by SWRCB); June 1999
- Underground Storage Tank Registration Database (UST, by RWQCB; and FID, by CalEPA), October 1990 and October 1994
- Solid Waste Information System (SWIS), June 1999
- Hazardous Waste Information System (HAZNET, by CalEPA), December 1997.

Local:

- Orange County Underground Storage Tank Cleanups (LUST), June 1999
- Orange County Underground Storage Tank Facilities (UST), May 1999
- Leaking Underground Storage Tanks Report (LUST, by RWQCB Region 8), April 1999
- Spill, Leaks, Investigation, and Clean-Up List (SLIC, by RWQCB Region 8), October 1997.

A visual reconnaissance of the project area was performed by Geotechnical Consultants, Inc. The assembled data was analyzed for indicators of environmental contamination with the objective of determining the potential impacts to the project and the need for additional environmental assessment. Table C.4-1, presents the criteria used to evaluate the potential environmental impact of sites listed in the EDR database.

Table C.4-1 Contaminated Properties Impact Criteria

Impact Potential	Criteria
High	Sites within or immediately adjacent to the project route where site assessment efforts are reported to be in progress.
	Sites within or immediately adjacent to the project route where remediation/cleanup efforts are reported to be in progress.
Medium	Sites within or immediately adjacent to the project site where the number and/or status of underground storage tanks on site is not reported.
	Sites within or immediately adjacent to the project site with active underground storage tanks.
	Sites within 500 feet of the project route where preliminary assessment/remediation efforts are reported to be in progress.
Low	Sites more than 500 feet from the project route where preliminary assessment/remediation efforts are reported to be in progress.
	Sites where underground storage tanks have been removed.
	Sites which generate large quantities of hazardous materials.
	Sites where historic or current use may be associated with large quantities of hazardous materials.
None	UST and Generator Sites outside of or physically separated from (by roads) the project site.
	Sites within or immediately adjacent to the project site which generate small amounts of hazardous materials.
	Sites within or immediately adjacent to the project site where no further action is required.
	Sites within or immediately adjacent to the project site where case has been closed following site remediation/cleanup.

Existing Contamination Sites Along the Pipeline ROW

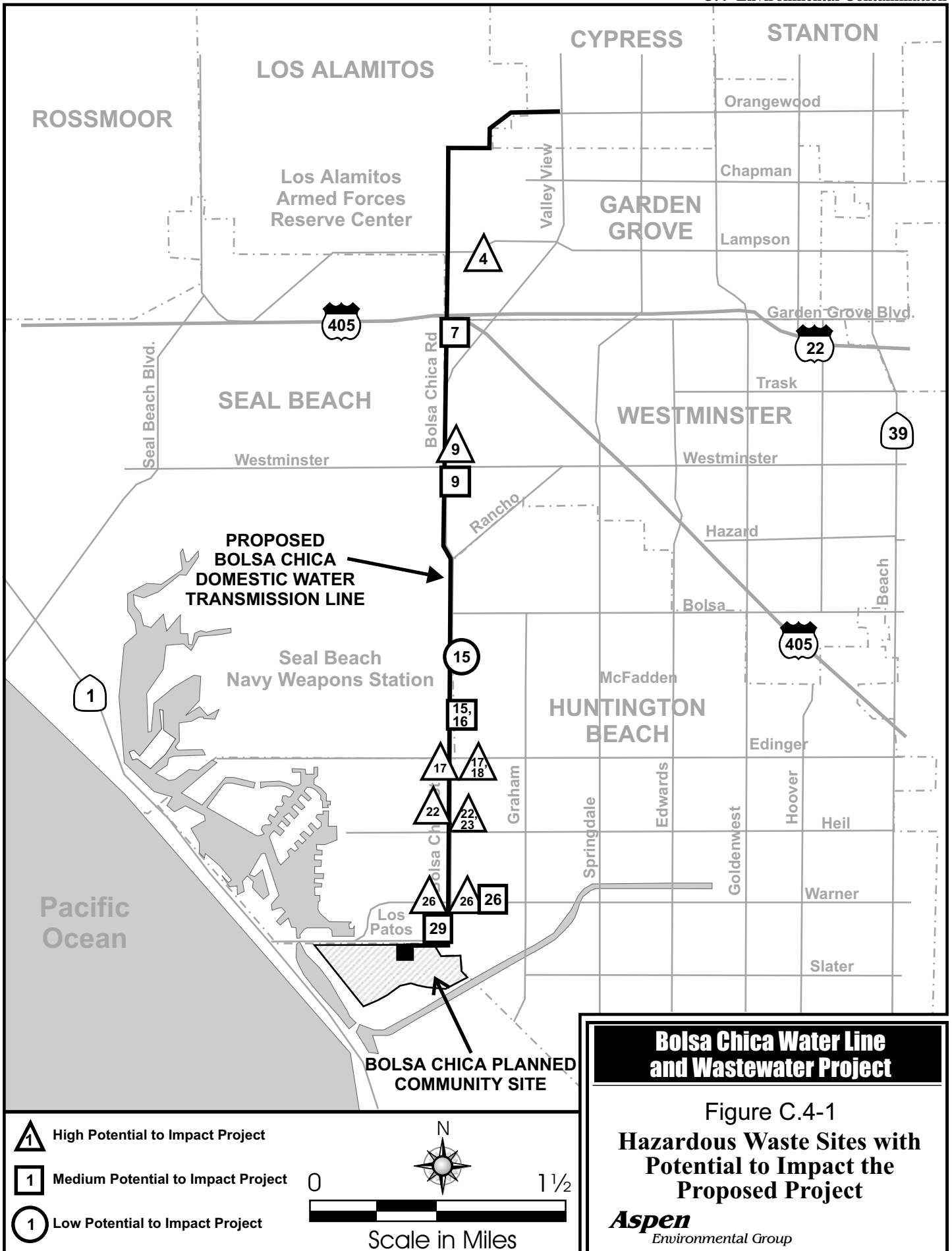
Using the foregoing screening criteria and information acquired during the visual site reconnaissance, agency listed active hazardous waste sites within the study corridor for the proposed project route were ranked based on their potential to cause environmental impacts due to contamination. Sites with high, medium, and low ranking are presented in Table C.4-2 and site locations are illustrated in Figure C.4-1. Regulatory agency listed sites requiring no further action and sites ranked as no potential for environmental impact are not presented in the table. Table C.4-2 lists 14 sites along the proposed pipeline route that could cause environmental impacts.

Table C.4-2 Hazardous Waste Sites With Potential To Impact the Proposed Project

EDRID ¹	Site Name	Address	List ²	Status ³	Potential to Impact Project	Notes
4	Arco Station #301	5262 Lampson Avenue	GEN UST LUST	SmGen NR PA	High	Site is currently a vacant lot. Site reported to have four gasoline USTs and one waste oil UST.
7	Los Alisos Ranch Co.	13070 Old Bolsa Chica Rd.	GEN UST LUST	?Gen Active CC	Medium	Site reported as having two diesel USTs and two gasoline USTs. A large, aboveground storage tank was noted onsite, contents unknown.
9	Unocal Stn. #6449	5000 Westminster Blvd.	GEN UST LUST	?Gen Active CC	Medium	Site reported as having two gasoline USTs and one waste oil UST.
9	Mobil Stn. #18-G6Y	13982 Bolsa Chica Road	GEN UST LUST	SmGen NR PA	High	Site is currently a vacant lot with evidence of ongoing remediation.
15	Great Western Grinding	15292 Bolsa Chica Street	GEN	?Gen	Low	Primarily metal dust and metal sludge
15/ 16	Century Moving/ Valley North American	15752 Bolsa Chica Street	UST LUST	NR CC	Medium	Reported as having one gasoline UST.
17/ 18	Chevron Station	5002 Edinger Avenue	GEN UST LUST	SmGen Active PA	High	Site is currently a vacant lot. Site reported to have three gasoline USTs and one waste oil UST.
17	Shell Oil	16001 Bolsa Chica Street	UST LUST	Active RA	High	Site reported to have four gasoline USTs. Monitoring wells located near tanks.
22	Unocal #5169	16471 Bolsa Chica Street	GEN UST LUST	?Gen NR PA	High	Active station with monitoring wells noted onsite.
22/ 23	Arco Station #1812	16502 Bolsa Chica Street	GEN UST LUST	?Gen Active PA	High	Site reported to have four gasoline USTs and one waste oil UST. Monitoring wells noted onsite.
26	Mobil/Import Auto Repair	4995 Warner Avenue	GEN UST LUST	SmGen Active RA	High	Site reported to have two gasoline USTs and one waste oil UST. Site currently occupied by Import Auto Repair. Mobil station has been gone for 14 years. Monitoring wells noted onsite.
26	Conoco (Kayo Oil/JET)	5002 Warner Avenue	UST LUST	Active RA	High	Site is currently a vacant lot with evidence of ongoing remediation (extraction wells).
26	Scher Tire #12	5062 Warner Avenue	GEN UST	?Gen Active	Medium	Number and contents of UST(s) not reported. Site currently occupied by Goodyear Tire.
29	GTE	17111 Bolsa Chica Street	GEN UST LUST	SmGen NR CC	Medium	Status, number, and contents of UST(s) not reported.

Notes:

- 1) Environmental Data Resources (EDR) Environmental Information Data Site I.D. Number (1999).
- 2) Regulatory Agency Listing:
LUST = Leaking Underground Storage Tanks, includes leaking tanks listed under LUST Information System, Cal EPA, CORTESE, and other Local agencies
UST = Registered Underground Storage Tanks, including tanks listed with state and local agencies
GEN = Hazardous Waste Generator, includes CORTESE Hazardous Waste Information System Listings and other local agencies
- 3) Status Codes:
CC = Case closed, remediation completed or not deemed necessary
PA = Preliminary assessment underway
RA = Remedial assessment/action underway
NR = Status not reported
Active = Underground Storage Tank in service
?Gen = Amount of hazardous waste generated per month not specified
LgGen = Large Generator generates at least 1000 Kg/month of non-acutely hazardous waste or 1 Kg/month of acutely hazardous waste.



Although not listed in the database, there are three sites along the alignment that also merit mention: (1) the Los Alamitos Armed Forces Reserve Center, (2) the U.S. Naval Weapons Station, and (3) the Boeing Company Huntington Beach Facility. Although no environmental contamination was revealed by the database search at any of these sites, due to the type of materials used and stored at these facilities, future or unknown environmental contamination is possible.

C.4.1.2 Regulatory Setting

Hazardous substances are defined by state and federal regulations to protect public health and the environment. Hazardous materials have certain chemical, physical or infectious properties that cause it to be considered hazardous. The California Code of Regulations (CCR), Title 22, Chapter 11, Article 2, Section 66261 provides the following definition:

A hazardous material is a substance or combination of substances which, because of its quantity, concentration, or physical, chemical or infectious characteristics, may either (1) cause, or significantly contribute to, an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness; or (2) pose a substantial present or potential hazard to human health or environment when improperly treated, stored, transported or disposed of or otherwise managed.

According to Title 22 (Chapter 11 Article 3, CCR), substances having a characteristic of toxicity, ignitability, corrosivity or reactivity are considered hazardous. Hazardous wastes are hazardous substances that no longer have a practical use, such as material that has been abandoned, discarded, spilled, contaminated or is being stored prior to proper disposal.

Toxic substances may cause short-term or long-lasting health effects, ranging from temporary effects to permanent disability, or death. For example, toxic substances can cause eye or skin irritation, disorientation, headache, nausea, allergic reactions, acute poisoning, chronic illness, or other adverse health effects if human exposure exceeds certain levels (the level depends on the substance involved). Carcinogens (substances known to cause cancer) are a special class of toxic substances. Examples of toxic substances include most heavy metals, pesticides, and benzene (a carcinogenic component of gasoline). Ignitable substances are hazardous because of their flammable properties. Gasoline, hexane, and natural gas are examples of ignitable substances. Corrosive substances are chemically active and can damage other materials or cause severe burns upon contact. Examples include strong acids and bases such as sulfuric (battery) acid or lye. Reactive substances may cause explosions or generate gases or fumes. Explosives, pressurized canisters, and pure sodium metal (which reacts violently with water) are examples of reactive materials.

Other types of hazardous materials include radioactive and biohazardous materials. Radioactive materials and wastes contain radioisotopes, which are atoms with unstable nuclei that emit ionizing radiation to increase their stability. Radioactive wastes mixed with chemical hazardous wastes are referred to as "mixed wastes." Biohazardous materials and wastes include anything derived from living organisms. They may be contaminated with disease-causing agents, such as bacteria or viruses.

Soil that is excavated from a site containing hazardous materials would be a hazardous waste if it exceeded specific CCR Title 22 criteria. Remediation (cleanup and safe removal/disposal) of hazardous wastes found at a site is required if excavation of these materials is performed; it may also be required if certain other activities are proposed. Even if soil or groundwater at a contaminated site do not have the characteristics required to be defined as hazardous wastes, remediation of the site may be required by regulatory agencies. Cleanup requirements are determined on a case-by-case basis by the agency taking lead jurisdiction.

Hazardous Waste Requirements. The federal Resource Conservation and Recovery Act of 1976 (RCRA) established a program administered by the U.S. Environmental Protection Agency (EPA) for the regulation of the generation, transportation, treatment, storage, and disposal of hazardous waste. RCRA was amended in 1984 by the Hazardous and Solid Waste Act (HSWA), which affirmed and extended the "cradle to grave" system of regulating hazardous wastes. The use of certain techniques for the disposal of some hazardous wastes was specifically prohibited by HSWA.

Individual states may implement hazardous waste programs under RCRA with EPA approval. California has not yet received this EPA approval; instead, the California Hazardous Waste Control Law (HWCL) is administered by the California Environmental Protection Agency (CALEPA) to regulate hazardous wastes. While the HWCL is generally more stringent than RCRA, until the EPA approves the California program, both the state and federal laws apply in California.

The HWCL lists 791 chemicals and about 300 common materials that may be hazardous; establishes criteria for identifying, packaging and labeling hazardous wastes; prescribes management controls; establishes permit requirements for treatment, storage, disposal and transportation; and identifies some wastes that cannot be disposed of in landfills.

Hazardous Material Worker Safety. The California Occupational Safety and Health Administration (Cal/OSHA) is the primary agency responsible for worker safety in the handling and use of chemicals in the workplace. Cal/OSHA standards are generally more stringent than federal regulations. The employer is required to monitor worker exposure to listed hazardous substances and notify workers of exposure (8 CCR Sections 337-340). The regulations specify requirements for employee training, availability of safety equipment, accident-prevention programs, and hazardous substance exposure warnings.

C.4.2 ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

The principal environmental impacts involving hazardous waste are the excavation and handling of contaminated soil resulting in exposure of workers and the general public. A wide variety of contaminants including petroleum hydrocarbons, solvents, polynuclear aromatic compounds (PNAs), heavy metals, and herbicides may be present along the pipeline route. Contaminant types, concentrations and location cannot be accurately predicted without site-specific information. Hazardous materials in the construction area may require special handling as hazardous waste and create an exposure risk to workers and the general public during excavation and transport. Contaminated soil exceeding regulatory limits for trench backfilling will require on-site treatment or transport to off-site processing facilities; contaminated soil removed from the construction area must be transported

according to state and federal regulations and be replaced by import soil approved for backfilling. Similar issues pertain to contaminated groundwater, although none is anticipated at average pipeline excavation depths (5 to 7 feet) throughout most of the proposed pipeline route.

Sites that are physically separated from the pipeline route would have little or no potential to affect the project. The remaining adjacent sites are ranked as high, medium, or low potential to impact pipeline construction according to site conditions, regulatory status, and review of agency records.

C.4.2.1 Significance Criteria

Impacts of the Proposed Project on the environment would be considered significant if:

- Pipeline construction causes soil contamination, including flammable or toxic gases, at levels exceeding federal, State and local hazardous waste limits established by 40 CFR Part 261 and Title 22 CCR 66261.21, 66261.22, 66261.23 and 66261.24.
- Construction activities would result in mobilizing contaminants, creating potential pathways of exposure to humans and/or other sensitive receptors.

The presence of contaminated soil and/or groundwater within the proposed pipeline route would be considered significant if:

- Workers and/or the public would be exposed to contaminated or hazardous materials during pipeline construction activities and such exposure exceeds permissible exposure levels set by the California Occupational Safety and Health Agency (CAL-OSHA) in CCR Title B and the Federal Occupational Safety and Health Administration (OSHA) in Title 29 CFR Part 1910.

Based on these criteria, the screened database was reviewed to identify sites with potential to contaminate the construction area. Sites are ranked as high, medium or low according to their potential to cause environmental impacts by exposing workers and the public to hazardous waste along the pipeline route. Transport of contaminants to the pipeline route from high or medium potential sites results in a significant, but mitigable (Class II) impact. Sites that are assessed as having low potential for environmental contamination are not likely to have contaminants and are therefore considered adverse but not significant (Class III) impacts.

Active hazardous waste sites physically separated from the pipeline route by roads or other facilities would have a low potential to cause hazardous substances along the pipeline route. These physical barriers provide a buffer that would restrict surface migration of contaminants from the source and inhibit unauthorized waste disposal along the pipeline route. Subsurface migration of contaminants within the unsaturated soil zone is predominantly vertical downward and is not likely to reach the pipeline route from buffered sites.

Subsurface migration of mobile contaminants within groundwater may provide a conduit to the project area. However, the water table is below the planned excavation depth throughout most of the proposed

pipeline route, and contaminated groundwater below the excavation is not expected to impact construction. Groundwater may be encountered at bored railroad, street, freeway interchange, and channel crossings.

C.4.2.2 Construction Impacts

Table C.4-2 in Section C.4.1.1 lists eight sites with high, five sites with medium, and two sites with low potential to cause environmental impacts due to contamination. All of the high potential sites are LUST listed sites with hydrocarbon contamination, four undergoing preliminary assessment and four undergoing remediation. Four of the medium potential sites are former LUST sites that still have active underground storage tanks.

The presence of hazardous waste sites along the pipeline route represents a potential significant impact (**Class II**) due to the potential health hazards to construction workers and the public. The following mitigation measures would provide an assessment of actual or potential site contamination, resulting in the development of appropriate safeguards and methods to reduce potential risk prior to construction. The mitigation measures outlined below must be accomplished prior to construction to allow development of appropriate worker protection and waste management plans that discuss proper handling, treatment and storage of hazardous waste from the project (prior to construction).

Three mitigation measures (EC-1, EC-2 and EC-3, following this section) are proposed, corresponding to the three ranks (low, medium, high) of potential to cause environmental impact (Table C.4-1). Procedures for evaluating sites with low, moderate, and high impact potential have been developed. A fourth mitigation measure (EC-4) is proposed to address any unexpected contamination that may be discovered during construction of the pipeline. While the existence of hazardous sites along the project corridor is a potentially significant impact, the application of the following mitigation measures would reduce that impact to a level that is not significant (**Class II**) because excavation, handling and treating of contaminated soil will be accomplished under pre-approved plans designed to protect the workers, public and the environment. Any clean up of environmental contamination that is accomplished during construction of the pipeline alignment could be considered a beneficial effect (**Class IV**).

Impact: Workers and/or the public could be exposed to contaminated soil and/or groundwater during excavation of hydrocarbon contaminated sites (**Class II**).

Mitigation Measures:

EC-1 SCWC shall re-evaluate “low” potential sites where construction parameters (trench location and depth) vary from the typical (typical is considered vertical excavation 5 to 7 feet deep, 3 feet wide, work area of up to 50 feet wide). The purpose of this re-evaluation is to determine whether the identified “low” potential sites need to be reclassified as medium or high impact potential sites. A qualified and approved environmental consultant shall perform the review and evaluation,

and the results reviewed and approved by the appropriate County Health Department or DTSC prior to construction.

- EC-2** For “medium” potential sites, SCWC shall thoroughly review current agency records followed by site-specific visual inspection of the pipeline route by a qualified and approved environmental consultant. Record review shall identify data confirming no off-site contamination to the pipeline route, adequate remediation of the pipeline route, or agency certified closure of the site. Visual inspection of the unpaved surface and shallow subsurface (with the aid of a spade or probe) should verify no evidence of off-site discharge, surface stains, or unauthorized dumping. Results of the record review or visual inspection that indicate contamination is present in the pipeline route shall cause medium potential sites to be treated as high potential.
- EC-3** SCWC shall review current agency records of "high" potential sites to design an investigation program to assess surface waste or debris and underlying soil. The review shall be performed by a qualified and approved environmental consultant. Record review of these potential sites must determine that the horizontal limits of soil contamination do not extend near the proposed trench area. Where the limits of contamination are uncertain a soil vapor survey or soil sampling should be conducted along the affected length of the proposed excavation and surface disturbance areas. Laboratory test results from these site investigations should be reported to DTSC or the County Health Department and to other relevant agencies, and include an assessment of the contamination potential in the trench area. Subsurface investigation for high potential sites shall determine appropriate worker protection, hazardous material handling, and disposal procedures appropriate for the subject site. The feasibility of on-site treatment methods shall be evaluated in the hazardous materials handling and disposal plans. Treatment options should include, but not be limited to; soil washing, chemical stabilization/fixation, vapor extraction, thermal oxidation, and bioremediation.

Areas with contaminated soil determined to be hazardous waste shall be excavated by personnel who have been trained through the OSHA recommended 40-hour safety program (29CFR1910.120) with an approved plan for excavation, control of contaminant releases to the air and off-site transport or on-site treatment. Health and safety plans, prepared by a qualified and approved industrial hygienist, shall be developed to protect the general public and all workers in the construction area. Health and safety plans shall be reviewed and approved by the County Health Department or California DTSC prior to construction. This documentation should also be made available to cities along the alignment to review, at their request. Mitigation Measure EC-4 addresses unknown contaminants concerns.

Impact: Possible exposure of workers and the public to previously undiscovered contaminated soil and/or groundwater (**Class II**).

Mitigation Measure:

- EC-4** SCWC shall assign trained personnel during active trenching to observe visual evidence of contamination and perform monitoring with appropriate testing equipment (photoionization or

flame ionization detectors), sampling and direct laboratory testing as necessary to identify areas of previously unknown soil contamination within the excavation. These personnel should meet the federal OSHA requirement for 40-Hour Training for Hazardous Waste Operations and Emergency Response (29CFR1910.120) and be familiar with the calibration and operation of the testing equipment.

The monitoring personnel shall have authority to implement an approved contingency plan when hazardous materials are encountered. Contingency plans, developed and approved by the County Health Department or California DTSC prior to construction, shall present specific alternatives for action to be taken in the event contaminated soils are encountered. The plan shall specify procedures for monitoring, identifying, handling, and disposing of hazardous waste, including contamination from unanticipated tanks or pipelines within the excavation. The contingency plan shall include a health and safety plan prepared by a Certified Industrial Hygienist specifying site monitoring and personal protective equipment.

C.4.2.3 Operational Impacts

The Proposed Project will not contribute to existing levels of environmental contamination. The project could cause a beneficial impact (**Class IV**) from clean up of contaminated sites along the pipeline route. However, this clean up would also cause a minor adverse impact (**Class III**) by adding to the regional hazardous material transportation, treatment, and disposal systems. An additional Class III impact could result if future remediation efforts near the pipeline were limited by the presence of an operational pipeline.

C.4.2.4 Impact and Mitigation Summary

A summary of impacts to the proposed pipeline route from environmental contamination and the applicable mitigation measures is presented below in Table C.4-3.

Table C.4-3 Impact and Mitigation Summary – Environmental Contamination

Impact	Class	Mitigation Measure
Workers and/or the public would be exposed to contaminated soil and/or groundwater during excavation of hydrocarbon contaminated soils.	II	EC-1, EC-2, EC-3
Possible exposure of workers and the public to previously undiscovered contaminated soil and/or groundwater.	II	EC-4

C.4.3 REFERENCES

EDR (Environmental Data Resources). 1999. The EDR Corridor Study Report, Bolsa Chica Waterline #1. October.