4.12 HAZARDOUS MATERIALS

The *FORA Reuse Plan Final Environmental Impact Report* (FORA FEIR) identified on a program level potentially significant environmental impacts for hazardous materials as related to exposure of people to hazardous and toxic materials and long-term exposure to unexploded ordinance.

Site specific details and project-level information for the EGSP project was not known and not analyzed at the time of the FORA FEIR. New information between the time the FORA FEIR was certified and the release of the Notice of Preparation (NOP) for the currently proposed EGSP project includes changes in land use on the project site, development of a site plan, change in project location, and completion of remediation activities prior to transfer of the site from the Army to the Redevelopment Agency. This section provides additional analysis of potential impacts not previously analyzed in the FORA FEIR.

Several hazardous materials reports were developed as part of the base closure and reuse process for Fort Ord, including those prepared by the U.S. Army (the Army) and its contractors, IT Corporation and Harding Lawson and Associates. Base-wide surveys for human and environmental hazards and remediation feasibility studies were conducted soon after the announcement of base closure. A comprehensive *Finding of Suitability to Transfer* (FOST) was completed in May 2003.

The May 2003 FOST documented the environmental suitability of certain parcels or property at the former Fort Ord (FFO), California for transfer to 15 recipients for a variety of uses including education, mixed-use, and residential development, consistent with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) §120(h) and Department of Defense policy. In addition, the FOST identifies use restrictions, as specified in the Environmental Protection Provisions, necessary to protect human health or the environment. The FOST, which is incorporated by reference into the DSEIR, summarizes in extensive detail the surveys, analysis and clean up activities on individual parcels including those contained within the project site.

Also, as a result of the National Environmental Policy Act (NEPA) requirements for land transfer, the following documents were prepared and used in the preparation of the FOST:

- *Final Environmental Impact Statement Fort Ord Disposal and Reuse* (June 1993)
- *Record of Decision (ROD) for Fort Ord, California, Disposal and Reuse Final Environmental Impact Statement (EIS)* (December 1993)
- *Supplemental Environmental Impact Statement Fort Ord Disposal and Reuse* (June 1996)
- *Record of Decision (ROD) for Fort Ord, California, Disposal and Reuse Final Supplemental Environmental Impact Statement (SEIS) (July 14, 1997)*

4.12.1 Environmental Setting

Hazardous materials at Fort Ord have received considerable attention for many years. The Comprehensive Environmental Restoration Compensation and Liability Act (CERCLA) requires that all remediation of hazardous materials be completed and shown to be effective prior to property transfer from the Army. The agencies responsible for making this determination are the U.S. Environmental Protection Agency (EPA), the California Department of Toxic Substance Control

(DTSC) and the California Regional Water Quality Control Board (RWQCB). These agencies are often referred to jointly as "the regulators."

In 1984 and 1986, investigations were conducted at the Fritzshe Army Airfield Fire Drill Pit and the Fort Ord landfill. This led to Fort Ord being listed for environmental clean up on the National Priorities List in 1990. The facility was listed "fenceline to fenceline," meaning that all 28,000 acres of the Base were included in the listing. A Federal Facilities Agreement (FFA) was signed in July 1990 by the Army, EPA, DTSC, and the RWQCB. Further investigation pinpointed 39 additional sites of concern. The sites of concern included motor pools, vehicle maintenance areas, dry cleaners, sewage treatment plants, firing ranges, hazardous waste storage areas, and unregulated disposal areas. An additional 2 sites were added during the investigation process: 1) a de-fueling area located at the Airfield and 2) a fire drill burn pit in East Garrison. In all, 43 sites were investigated.

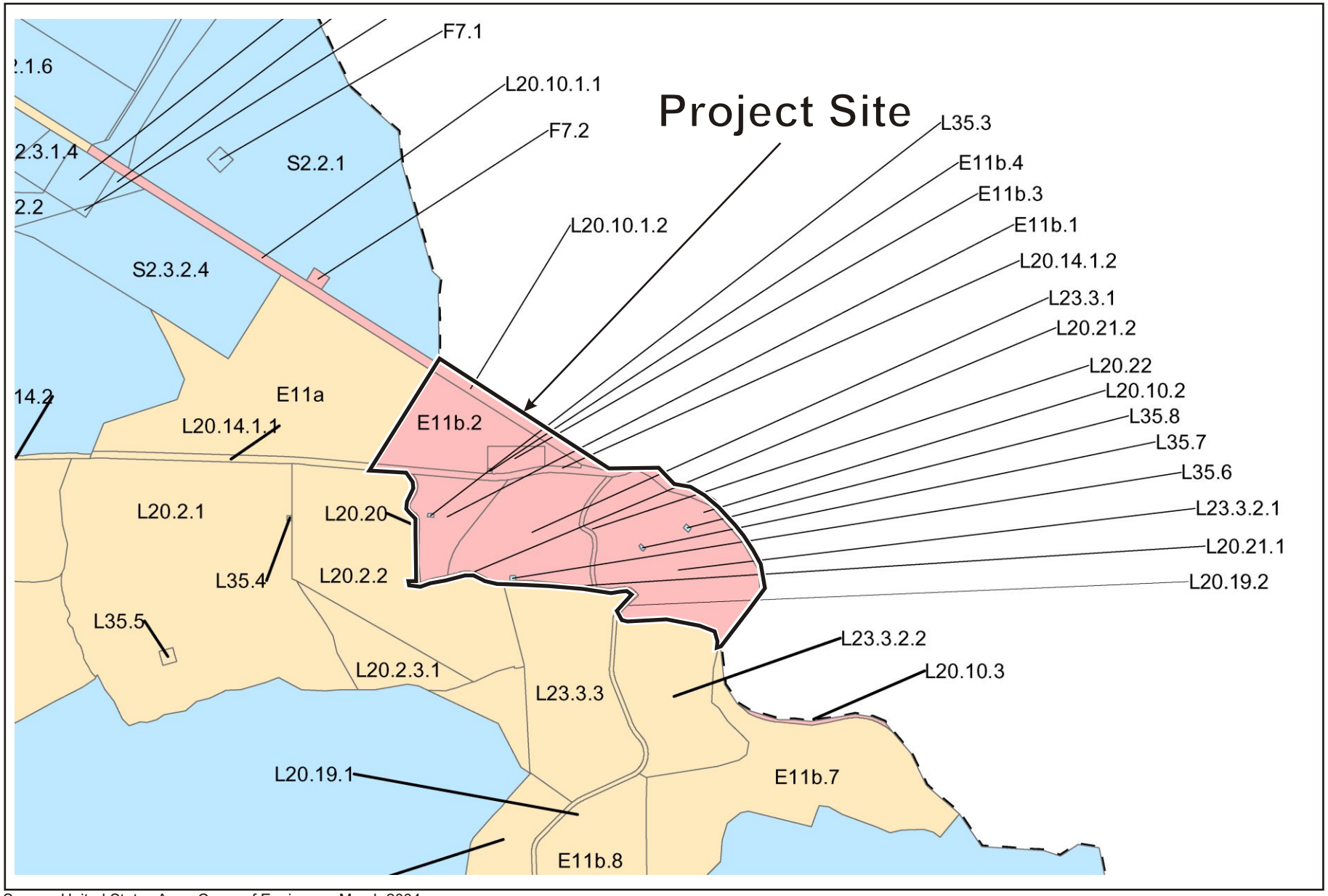
Hazardous materials are sited and catalogued in accordance with land parcel designations, which are then used in the land transfer process. Ownership of all of the land included within the project area will be conveyed from the Army to the Fort Ord Reuse Authority (FORA) in anticipation of further transfer to the Monterey County Redevelopment Agency and subsequently to the developer. The 17 involved parcels shown on Exhibit 4.12-1 are identified by designations devised by the Army and correlate with the designations included in Table 4.12-1.

As identified in Table 4.12-1, the project site includes 5 parcels of land (E11b.1, E11b.2, E11b.3, L23.3.1 and L23.3.2.1), 8 roadway segments (L20.10.1.2, L20.10.2, L20.14.1.2, L20.19.2, L20.20, L20.21, L20.21.1, L20.21.2, and L20.22), and 5 facilities such as pump stations (E11b.4, L35.3, L35.6, L35.7 and L35.8).

Table 4.12-1: EGSP Area Parcels by Land Use

Land Parcels	Roadway Segments	Facilities
E11b.1 24.5 acres	L20.10.1.1	E11b.4 Water Storage
E11b.2 41.7 acres	L20.10.1.2	L35.3 Water Pump
	L20.10.2	
E11b.3 6.2 acres	L20.10.3	L35.6 Ground Storage Tank
L23.3.1 54.4 acres	L20.14.1.2	L35.7 Sewage Pump
L23.3.2.1 85.3 acres	L20.19.2	L35.8 Sewage Pump
	L20.20	
	L20.21	
	L20.21.1	
	L20.21.2	
—	L20.22	—
Source: FOST - Track 0 parcels, May 2003.		

The presence of hazardous materials is directly related to the past and current use of land at Fort Ord. Past land uses of the project site consists of a tent city that housed Army personnel and various support facilities including, but not limited to, motor pools including maintenance areas, firing ranges, sewage treatment plants, miscellaneous fuel storage facilities, etc. There is the potential that these



Source: United States Army Corps of Engineers, March 2004.

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Michael Brandman Associates

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Exhibit 4.12-1
Former Fort Ord Transfer Status Map

past land uses involved the use of hazardous materials. The site currently contains 102 buildings and structures made of wood or concrete. These facilities are listed on Table 4.12-2 below.

Table 4.12-2: List of Buildings and Structures on EGSP Site

Parcel Number	Acreage	Facility Number	Description	Asbestos Present	Lead-Based Paint[1]	Approx. Construct. Date
E11b.1	24.5	No buildings or structures.	Development/ mixed-use	—	—	—
E11b.2	41.7	No buildings or structures.	Development/ mixed-use	—	—	—
E11b.3	6.2	145	Sewage Treatment Plant	No	Yes	1940
		145A	Sewage Pl Dotten tank	Unknown	Unknown	Unknown
E11b.4	0.1	147	Ground Storage Tank	No	Yes	1977
L20.10.1.2	9.2	No buildings or structures.	Reservation Road	—	—	—
L20.10.2	5.2	No buildings or structures.	Reservation Road	—	—	—
L20.14.1.2	7.8	No buildings or structures.	Inter-Garrison Road	—	—	—
L20.20	2.3	No buildings or structures.	West Camp Road	—	—	—
L20.21.1	2.6	No buildings or structures.	Watkins Gate Road	—	—	—
L20.21.2	1.8	No buildings or structures.	Watkins Gate Road	—	—	—
L20.22	2.4	No buildings or structures.	Chapel Hill Road	—	—	—
L23.3.1	54.4	4A75	Latrine	No	Unknown	Unknown
		136	Rapelling Tower	No	No	1986
		138	Vehicle Maintenance	Yes	Yes	1941
		140	Vehicle Maintenance	Yes	Yes	1941
		142	Storehouse	Yes	Yes	1961
		346	Recreation	No	No	1984
		347	Recreation	No	No	1984
		348	Observation Tower	No	No	1984
		351	Recreation	No	No	1984
		352	Recreation	Unknown	No	1984
		353	Observation Tower	No	No	1984
		354	Power Plant	No	No	1984

Table 4.12-2 (Cont.): List of Buildings and Structures on EGSP Site

Parcel Number	Acreage	Facility Number	Description	Asbestos Present	Lead-Based Paint[1]	Approx. Construct. Date
		357	Recreation	No	No	1984
		359	Observation Tower	No	No	1984
		360	Power Plant	No	No	1984
		364	Recreation	No	No	1984
		365	Observation Tower	No	No	1984
		366	Power Plant	No	No	1984
L23.3.2.1	85.3	5	Storehouse	Yes	Yes	1941
		6	Clinic	Yes	Yes**	1941
		7	Administration	Yes	Yes	1941
		8	Storehouse	No	Yes	1940
		9	Lavatory	Yes	Yes	1941
		10	Storehouse	Yes	Yes**	1941
		12*	Lavatory	No	Yes	1940
		13*	Applied Instruction Building	No	Yes	1940
		14*	Administration	Yes	Yes**	1940
		16*	Dining	No	Yes**	1940
		17*	Lavatory	No	Yes	1940
		20	Storehouse	Yes	Yes**	1941
		22	Administration	No	Yes	1941
		23	Storehouse	Yes	Yes	1941
		24	Administration	Yes	Yes	1941
		25	Dining	Yes	Yes	1941
		26	Dining	Yes	Yes	1941
		27*	Warehouse	Yes	Yes	1940
		29*	Dining	Yes	Yes	1940
		30*	Learning Resource Center	Yes	Yes	1940
		33*	Dining	Yes	Yes	1940
		34*	Dining	Yes	Yes	1940
		35*	Dining	Yes	Yes	1940
		36*	Dining	Yes	Yes**	1940
		37*	Dining	Yes	Yes	1940
		38*	Administration	Yes	Yes	1940

Table 4.12-2 (Cont.): List of Buildings and Structures on EGSP Site

Parcel Number	Acreage	Facility Number	Description	Asbestos Present	Lead-Based Paint[1]	Approx. Construct. Date
		54A	Storehouse	Yes	Yes	1942
		55	Salvage and Surplus Property	Yes	Yes	1976
		56	Salvage and Surplus Property	Yes	Yes	1976
		57	Salvage and Surplus Property	Yes	Yes	1976
		58	Salvage and Surplus Property	Yes	Yes	1976
		71	Warehouse	Yes	Yes**	1944
		73	Warehouse	Yes	Yes	1944
		74*	Lavatory	No	Yes	1940
		75*	Storehouse	No	Yes**	1940
		76*	Lavatory	No	Yes	1940
		77*	Lavatory	Yes	Yes	1940
		78*	Lavatory	No	Yes	1940
		79*	Lavatory	No	Yes	1940
		80*	Lavatory	Yes	Yes	1940
		81*	Lavatory	Yes	Yes	1940
		82*	Lavatory	No	Yes**	1940
		83*	Lavatory	Yes	Yes	1940
		85	Administration	Yes	Yes	1941
		86	General Purpose	Yes	Yes	1941
		87	Applied Instruction Building	Yes	Yes	1941
		88	Administration	Yes	Yes	1941
		91*	Exchange Branch	Yes	Yes	1942
		92	Theater	Yes	Yes	1941
		97	General Purpose	Yes	Yes	1941
		98	Applied Instruction Building	Yes	Yes	1941
		99	Det Day Room	Yes	Yes	1941
		100	Deploy Storage Building	Yes	Yes	1941
		101	Storehouse	Yes	Yes	1941
		104	Administration	Yes	Yes	1941

Table 4.12-2 (Cont.): List of Buildings and Structures on EGSP Site

Parcel Number	Acreage	Facility Number	Description	Asbestos Present	Lead-Based Paint[1]	Approx. Construct. Date
		105	Fire Station	Yes	Yes	1941
		106	Det Day Room	Yes	Yes	1941
		107	Det Day Room	Yes	Yes	1941
		108	Det Day Room	Yes	Yes**	1941
		110*	Storehouse	No	Yes	1940
		111*	Storehouse	No	Yes	1940
		112*	Storehouse	No	Yes	1940
		113*	Storehouse	No	Yes	1940
		115*	Storehouse	No	Yes	1940
		116*	Storehouse	No	Yes	1940
		117*	Storehouse	No	Yes	1940
		118*	Storehouse	No	Yes	1940
		120	Storehouse	No	Yes	1940
		121	Storehouse	Yes	Yes	1941
		123	General Purpose	Yes	Yes	1940
		124*	Rod-Gun Club	Yes	Yes	1940
		128	Applied Instruction Building	Yes	Yes	1942
		132	Storehouse	Yes	Yes	1941
		135	Chapel	Yes	Yes	1941
		H091	HWSF Fence Wall	Yes	Unknown	Unknown
		R011	Relocatable Building	No	Unknown	Unknown
		R015	Relocatable Building	Yes	Unknown	Unknown
L35.2	1.7	No buildings or structures.	Future Water Tank	—	—	—
L35.3	0.1	449	Water Pump	No	No	1983
L35.6	0.1	344	Ground Storage Tank	No	Yes	1940
L35.7	0.1	96	Sewage Pump	No	Yes	1940
L35.8	0.1	31	Sewage Pump	No	Yes	1940

[1] The presence or absence of lead-based paint is assumed based on the date of construction.
* East Garrison Historic District contributing building (Parcel L23.3.2.1).
** Limited soil sampling around building (see Section 3.6 of the FOST).
Source: FOST - Track 0 parcels, May 2003.

A determination of the Environmental Condition of the facilities was made based on the *Final Community Environmental Response Facilitation Act Repor*t (April 1994), the *Environmental Baseline Survey for University of California at Santa Cruz Parcel* (March 1994), the *Environmental*

Baseline Survey for California State University of Monterey Bay Parcel (December 1994), the *Environmental Baseline Survey for the Main Garrison Parcels* (September 1997), the *Environmental Baseline Survey for the Surplus II Parcels* (May 1998), and on a visual site inspection performed in August 2001. The information provided in the FOST is the result of an extensive search of EPA, DTSC, and RWQCB agency files during the development of these environmental surveys. A list of documents that provide information on environmental conditions of the property is included in their entirety in the FOST. The presence of hazardous and toxic materials and other environmental conditions on the project site were documented as part of the environmental surveys that were conducted during the preparation of the FOST. On the basis of Environmental Condition, each parcel was placed in 1 of 4 categories as follows:

- **ECP Category 1** - Areas where no release or disposal of hazardous substances or petroleum products has occurred, including no migration of these substances from adjacent areas. Parcels: E11b.1, E11b.2, L20.10.1.2, L20.20, L20.10.2, L20.14.1.2, L35.3, and L20.10.3.

- **ECP Category 2** - Areas where only release or disposal of petroleum products has occurred. No parcels meet the criteria this category.

- **ECP Category 3** - Areas where release, disposal, and/or migration of hazardous substances has occurred, but at concentrations that do not require a removal or remedial response. Parcels: L20.10.1.1 and L35.6.

- **ECP Category 4** - Areas where release, disposal, and/or migration of hazardous substances has occurred, and all removal or remedial actions to protect human health and the environment have been taken. Parcels: E11b.3, E11b.4, L20.19.2, L20.21.1, L20.21.2, L20.22, L23.3.1, L23.3.2.1, L35.7, and L35.8.

STORAGE, RELEASE, OR DISPOSAL OF HAZARDOUS MATERIALS

A variety of hazardous materials were stored at the project site when Fort Ord was operational. Since the closure of Fort Ord, all hazardous substance storage operations have been terminated onsite and necessary response actions have been taken, as described in the FOST. A compete inventory of all the structures onsite was conducted to determine the presence or absence of hazardous substances, including asbestos and lead-based paint (LBP); the findings are summarized in Table 4.12-3 below.

Defense Reutilization Marketing Office

According to the FOST and supporting environmental documents, there was a release and subsequent clean up of affected soil at the Hazardous Waste Container Storage Unit (SWCSU) within the Defense Reutilization and Marketing Office (DRMO), which is a portion of Installation Restoration Program (IRP) Site 29 located on parcel L23.3.2.1 in the project area. As documented in the FOST, the EPA and the DTSC have provided concurrence of no further remedial action for Site 29 as found in the EPA correspondence to the Army dated September 25, 1995 and correspondence to the Army from the DTSC dated October 10, 1995. Closure activities for this site were completed under the Resource Conservation and Recovery Act (RCRA) and consisted of a soil boring investigation, excavation, and removal of soils affected with polychlorinated biphenyls (PCBs) and motor oil. RCRA closure was granted by the DTSC on January 25, 2001.

Table 4.12-3: Hazardous Material Storage, Release, or Disposal on EGSP Site

Location	Material Stored/ Quantity	Regulatory Synonym	CASRN*	RCRA Waste Number	Duration	Release/ Disposal
Parcel E11b.3						
IA Site 32 (SWMU - FTO-011), East Garrison Sewage Treatment Plant	Liquid and solid sewage/1,200 to 3,400 cubic meters per month of hydraulic load.	—		—	1930s - 1996	Yes/Yes (See Table 3 in the FOST, Parcel E11b.3)
Parcel L23.3.1						
IA Site 30, Area A	Residue (listed below) from grease rack operations.				Unknown	Yes/No (see Table 3 in the FOST, Parcel L23.3.1)
Grease Rack	Beryllium/Unknown	—	N/A	N/A		
	Chromium/Unknown	—	7440473	None assigned		
	Lead/Unknown	—	7439921	None assigned		
	Zinc/Unknown	—	7440666	None assigned		
	Carbon disulfide/ Unknown	—	75150	PO22		
	Oil and Grease	—	N/A	N/A		
IA Site 39A, Study Area 4	Chemicals (listed below) released at the site, quantity released is unknown.				1960s - 1994	Yes/No
	Lead	—	7439921	None assigned		
	Arsenic	—	7440382	None assigned		
	Indeno (1,2,3-cd)pyrene	Indenopyrene	193395	U137		
	Benzo(a)pyrene	Benzopyrene	50328	U022		
	Benzo(a)anthracene	Benzanthracene	56553	U018		
Parcel L23.3.2.1						
SWMU - FTO-008 (DRMO)	Chemicals (listed below) released at the site.				1973 - 1994	No/No
	Chromic acid/42 lbs.	—	11115745	None assigned		
	Sulfuric acid/2,227 lbs.	—	7664939	None assigned		
	Hydrofluoric acid/ 576 lbs.	Hydrogen fluoride	7664393	U134		

Table 4.12-3 (Cont.): Hazardous Material Storage, Release, or Disposal on EGSP Site

Location	Material Stored/ Quantity	Regulatory Synonym	CASRN*	RCRA Waste Number	Duration	Release/ Disposal
	Ethylene glycol (antifreeze)/37,190 lbs.	—	107211	None assigned		
	Ammonia/284 lbs.	—	7664417	None assigned		
	Asbestos/168,060 lbs.	—	1332214	None assigned		
	Lead (batteries)/3,169 lbs.	—	7439921	None assigned		
	Mercury (batteries & waste medical)/3,230 lbs.	—	7439976	U151		
	Nickel (NiCad batteries)/4,069 lbs.	—	7440020	None assigned		
	Cadmium (NiCad batteries)/4,069 lbs.	—	7440439	None assigned		
	Lead (lead-acid batteries)/65,334	—	7439921	None assigned		
	Calcium hypochlorite	—	7778543	None assigned		
	Waste solvents/7,231 lbs.	—	Multiple	—		
	1,1,1-Trichloroethane	Ethane, 1,1,1-trichloro-	71556	U226		
	Trichloroethylene	Ethene, trichloro-	79016	U228		
	Xylene	Benzene, dimethly-	1330207	U239		
	Toluene	Benzene,methyl	108883	U220		
	Methylene chloride	Dichloromethane	75092	U080		
	Diazinon/30 lbs.	—	333415	None assigned		
	Ferric chloride solution/1,936 lbs.	—	7705080	None assigned		
	Formaldehyde solution/320 lbs.	—	50000	U122		
	Lindane/88 lbs.	γ-BHC	58899	U129		
	Waste oil/94,491 lbs.	—	Multiple	—		
	Waste paints, thinners and lacquers/32,510	—	Multiple	—		
	PCB contaminated electrical components/ 4,218 gallons	Aroclors	1336363	None assigned		

Table 4.12-3 (Cont.): Hazardous Material Storage, Release, or Disposal on EGSP Site

Location	Material Stored/ Quantity	Regulatory Synonym	CASRN*	RCRA Waste Number	Duration	Release/ Disposal
	POL contaminated fluids and solids/185,521 lbs. per year	N/A	N/A	N/A		
	Sodium nitrate/4,720 lbs.	—	7632000	None assigned		
	DDT contaminated soil/2,382 lbs.	Benzene, 1,1'-(2,2,2-triichloroethylidene)bis[4-chloro-	50293	U061		
SWMU - FTO-009 (Building T-111)	PCB and material containing PCB/3,000 kg annually	Aroclors	1336363	None assigned	1985 - 1995	No/No
Building 91	Super Tropical Bleach / Unknown	—	Multiple	—	1986-1989	No/No
	DS-2/Unknown	—	Multiple	—	1986-1989	No/No
DRMO Hazardous Waste Container Storage Unit (IRP Site 29)	Chemicals released at the site/Quantity released is unknown				1973 - 1994	Yes/No (See Table 3 in the FOST, Parcel L23.3.2.1)
	Aroclor-1016	PCB	12674112	None assigned		
	Aroclor-1254	PCB	11097691	None assigned		
	Aroclor-1260	PCB	11096825	None assigned		
	Total petroleum hydrocarbons (motor oil)	—	Multiple	—		

* Chemical Abstract Service Registry Number (a unique identifying number used in public and private databases)
Source: FOST - Track 0 parcels, May 2003.

Solid Waste Management Units

Two former solid waste management units (SWMU), FTO 009 and FTO-011 were located within the boundaries of the project area. They include a PCB storage building and a sewage treatment plant. Identified as former hazardous waste storage or disposal areas during a 1988 Army Environmental Hygiene Agency (AEHA) investigation, neither of these sites indicated evidence of release. In 1993, a SWMU verification and update was completed. No evidence of release was observed.

Site characterization activities at both sites included soil gas surveys, soil sampling, and monitoring well installation and sampling. The sites were categorized as interim action (IA) sites based on the results of site characterization activities. IA sites, by definition, have limited surficial soil contamination that can be addressed by excavation and follow-up confirmation sampling. The

selected interim actions completed at these sites addressed immediate, imminent, and/or significant risks to human health and the environment posed by limited contaminated soil.

SWMU FTO-009, located within Parcel L23.3.2.1, (DRMO PCB Storage Building T-111) was a California hazardous waste interim status storage unit. Hazardous waste stored at this site was primarily waste oil containing more than five parts per million (ppm) PCB. According to the FOST, closure of this site, which was conducted under RCRA, was accepted by the DTSC on October 24, 2003.

SWMU FTO-011, The East Garrison Sewage Treatment Plant, is located in Parcel E11b.3. It was built in the 1940s as the primary treatment plant to serve the East Garrison. Sanitary sewage was treated at the plant, which consisted of sludge beds, a percolation pond, and Dotten sedimentation tanks. Soil and groundwater samples were collected from soil borings drilled near the former sludge beds, percolation pond, and sewage outfall in 1990, 1992 and 1996. Soil was excavated near the sewage outfall and at the unlined percolation pond. As part of the clean up, all waste sludge (approximately 7,160 cubic yards) associated with the plant was removed as part of the IRP. All reports related to this process are referenced as the "Site 32 Interim Action (IA)." Additionally, the treatment plant Dotten tanks (sludge settling tanks) were emptied and sealed with concrete.

The IA for the East Garrison Sewage Treatment Plant was completed in 1997 and included excavation and removal of soil containing hydrocarbons, pesticides, and metals at a sewage outfall and at an unlined percolation pond. The *Site 32 IA Confirmation Report* was submitted to the regulatory agencies in March 1998. The EPA and DTSC concurred that no further action is necessary at Site 32 (EPA letter dated March 19, 1998 and DTSC letter dated October 23, 2002).

Groundwater Contamination

Two plumes of contaminated groundwater underlie portions of Fort Ord approximately 1,000 feet from the project site and are being remediated in accordance with the FOST. However, there is no groundwater contamination in the EGSP area. On January 4, 1996 and July 3, 2002, the Army received concurrence from the EPA that the pump-and-treat system for remediation of groundwater plumes are in place and operating "properly and successfully." The *Baseline Risk Assessment* for the groundwater plume indicated that the groundwater does not pose a threat to occupants of the project site, as long as groundwater from the contaminated aquifers is not used as a drinking water source. Water for the project site will be supplied by Monterey County Water District (MCWD) and no ground water will be used on the project site. A deed restriction for groundwater applicable to all of the parcels will be provided to the grantee. Well drilling, except for the express purpose of monitoring potential environmental impacts, and use of groundwater in any manner will be prohibited.

Storage, Release, or Disposal of Petroleum Products

According to the FOST, there is no evidence that petroleum products were stored, released, or disposed of on the project site as the result of non-underground storage tank/above ground storage tank petroleum activities.

A geophysical survey to evaluate the presence of buried metal drums within Parcel L23.3.2.1 was completed. The investigation was undertaken on the basis of a report made to the RWQCB that metal drums might have been buried in open areas between Buildings 29, 30, 33, 34, 35, and 36. The metal drums were detected by looking for magnetic anomalies. Metal drums identified from the survey

were excavated and soil samples were collected and submitted for chemical analysis. No drums or other potential containers of contaminants were found within the excavated anomaly locations. Sampling results indicated chemicals detected were below Preliminary Remediation Goals. Based on these results, no further action was recommended. The draft *Data Summary Report* for this investigation was submitted to the RWQCB, EPA, and DTSC in January 2001. In a letter dated May 4, 2001, the RWQCB concurred with the reports recommendation of no further action at the East Garrison magnetic anomaly sites. The EPA and DTSC agreed that no further action was necessary in the February 7, 2002 BRAC Clean Up Team meeting.

Above Ground and Underground Storage Tanks

Nine storage tanks are located in the project area, as indicated on Table 4.12-3. There is no evidence of release from these tanks. Seven tanks have been removed leaving 2 storage tanks onsite. The project area contains both above ground storage tanks (AST) and underground storage tanks (UST).

A former Driver Training Area located within parcel L23.3.1 in the project area included a former gas station that operated from an unknown time until 1961. Two USTs associated with the former gasoline station were removed in 1976. Reportedly, piping associated with these USTs is to have been left in place. Soil samples collected in 1992 were below analytical reporting limits. The Army prepared a document titled *Remedial Action Confirmation Report, Site 31 Remedial Action Basewide Remediation Report, Former Fort Ord* (April 1999). This report presented a risk assessment for the chemicals that may be present in soil at this site. The results of the risk assessment provided by the Army indicated that the remedial objectives were met and that no further remedial action or assessment was necessary. The data was accepted by the DTSC in its memorandum dated June 3, 1999 and by the EPA in its letter dated September 1999.

Table 4.12-4: Storage Tanks by Parcel, Product Storage, and Remedial Action

Parcel Number	Tank Number	Product Type	Date of Storage, Release, or Disposal	Remedial Action
L23.3.1	139.1	Gasoline	UST of unknown size and unknown duration of use.	UST removed in 1976. Soil borings completed as part of IRP Site 30 investigation. Closure granted by the Monterey County Department of Health (MCDOH) in January 1997.
	139.2	Gasoline	UST of unknown size and unknown duration of use.	Undocumented UST removal in 1976. Soil borings completed as part of IRP Site 30 investigation. Closure granted by the MCDOH in April 1994.
L23.3.2.1	64	Gasoline	50-gallon AST operated between 1960s and 1995. No evidence of petroleum release.	AST removed; no remedial action necessary.
	93.1	Gasoline	4,600-gallon UST operated between 1941 and 1991. No evidence of petroleum release.	UST removed in March 1991. Closure granted by the MCDOH in April 1994.
	93.2	Gasoline	5,500-gallon UST operated between 1941 and 1991. No evidence of petroleum release.	UST removed in March 1991. Closure granted by the MCDOH in April 1994.

Table 4.12-4(Cont.): Storage Tanks by Parcel, Product Storage, and Remedial Action

Parcel Number	Tank Number	Product Type	Date of Storage, Release, or Disposal	Remedial Action
	128.1	Unknown	UST of unknown contents and unknown duration of use.	UST removed in March 1991. Closure granted by the MCDOH in April 1994.
L35.1	3107A.1	Diesel	4,000-gallon UST operated between 1976 and 1992. No evidence of petroleum release.	UST removed in January 1992. Closure granted by the MCDOH in January 1994.
	3108.1	Propane	Existing 25,000-gallon AST. Not in use.	None.
	3108.2	Propane	Existing 300-gallon AST. Not in use.	None.
Source: FOST - Track 0 parcels, May 2003.				

Polychlorinated Biphenyls

There are no polychlorinated biphenyls (PCB)-containing transformers currently on the project site and no evidence of un-remediated releases from PCB-containing equipment. Based on a review of existing records and available information, PCB-containing light ballasts may be present in onsite buildings. Fluorescent light ballasts manufactured or installed prior to 1978 may contain PCBs in the potting material. Regardless, managed properly, PCB-containing light ballasts do not pose a threat to human health and the environment.

Pesticides and Herbicides

According to available pesticide application records, the application of pesticides and herbicides was routine around the residential areas of Fort Ord. Pesticides used in residential areas of Fort Ord are listed below. As stated by the Army in the FOST, with the exception of Diazinon, which is no longer in use, the listed pesticides are considered safe for outdoor or residential use.

- Carbamates-methykcarbamates (Ficam, Baygon), carbaryl (Sevin); proxur (Terminate)
- Chloropyfifos (Dursban, Empire)
- Diazinon
- Herbicide: glyuphosphate (Round-up, Rodeo), 2-4D, Amitrole, sulfometuron methyl (Oust)
- Propetamphos (Safrotin)
- Pyrethhrum and synthetic Pyrethroids pyrethrin, resmethrin, cypermethrin (Demon), cyfluthrin (Tempo)
- Rodenticides: chlorophacinone, strychnine, brodificoum; sinc phosphide
- Thurgicide (Dipel)

Radiological Materials

Two buildings (16 and 87) on parcel L23.3.2.1 are confirmed to have been used for storage or use of radioactive commodities (e.g., compasses, watches, gun sights, moisture/density testers, chemical

agent monitors, etc.). The use of radioactive commodities at FFO was limited to those under the control of a specific Nuclear Regulatory Commission license, or those authorized and managed under Department of the Army authorization.

A radiological survey of buildings 16 and 87 was performed in 1994 by the U.S. Army Environmental Hygiene Agency (AEHA)[1]. Wipe-sample results from the buildings were below the established release criteria. In addition to the buildings with documented use or storage of radioactive commodities, other FFO buildings were suspected to have been used for storage or use of radioactive commodities in the past. Of the 230 buildings suspected of having been used for the storage of radioactive materials, 20 percent were randomly sampled by the AEHA. No radiological health hazards were identified in the 20 percent sampled, and it was recommended that all 230 buildings be released for unrestricted use; thus, in a memorandum dated October 1, 1997, the California Department of Health Services (CDHS) released all buildings with documented or suspected use or storage of radioactive commodities for unrestricted use.

Radon

Radon levels were measured during a 1990 survey at Fort Ord. In accordance with the FOST, no radon levels above the applicable threshold standards were detected and no further testing for radon was necessary.

Ordnance and Explosives

Based on a review of existing records and available information as referenced in the FOST, none of the buildings or surrounding land within the project area are known to contain ordnance and explosives (OE).[2] All parcels included in the project area lie on property identified as non-OE areas, or areas at the FFO that contain no evidence of OE and have never been suspected as having been used for OE-related activities of any kind. An appropriate No Action Record of Decision addressing the parcels in the project site was signed on July 2, 2002.

However, just to the south of the project site (south of Track 0 parcels E11b.1, L23.3.1, L23.3.2.1, and L35.6) a potential hazard site (Site OE-5) was established because a scrap 3.5" rocket motor was found in the branches of an oak tree in the area. No known range for rocket firing was located in this area. An ordnance removal contractor sampled this site for OE and did not find evidence of ordnance use. Site OE-5 will undergo additional evaluation in the OE *Remedial Investigation/Feasibility Study* (RI/FS).

East Garrison Ranges

The following discussion is based on a personal communication with Kristie Reimer, Principal, Levine, Fricke, and Reimer, September 8, 2004. A special investigation was conducted for the former East Garrison Ranges, which were designated Site 39A in the IRP. Portions of Site 39A are located in parcels L20.2.2 and L23.3.3, which are on the southern side of Watkins Gate Road, south of the project site. Categorized as an Interim Action (IA), Site 39A had limited surficial soil contamination that was addressed by excavation and follow-up confirmation sampling. The selected

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[1] Currently known as the U.S. Army Center for Health Promotion and Preventive Medicine.

[2] Applicable references include the *Active Search Report* (ASR), *ASR Supplement No. 1* and *Draft Revised ASR* (December 1993, November 1994 and December 1997, respectively), *Site 39 Data Summary Work Plan* (February 1994), the *Draft Final Literature Review Report* (January 2000), Track 0 Technical Memorandum (January 2000), Ordnance and Explosives (OE) contractor after-action reports, working maps, Fort Ord Training Facilities Maps, and associated interviews from various ordnance-related community relations activities.

IA completed at the site addressed immediate, imminent, and/or significant risks to human health and the environment posed by limited soil contamination.

The IA at Site 39A within Parcel L23.3.1 (on the project site) was completed in 1998 and included excavation and removal of soil impacted by the use of the site as a trap and skeet range. Prior to the IA, the former trap and skeet range had soils containing lead, arsenic, and polynuclear aromatic hydrocarbons (PAHs) exceeding Federal Preliminary Remediation Goals (PRG), resulting from accumulation of lead shot and clay pigeon fragments.

According to the *Interim Action Confirmation Report, Site 39A - East Garrison Ranges, Former Fort Ord, California* (October 16, 1998), soil containing elevated concentrations of lead and PAHs was excavated and transported off site. The Site 39A IA Confirmation Report was submitted to the regulatory agencies in October 1998. The EPA concurred that no further action was necessary at Site 39A (letter dated February 5, 2002). As part of a follow up site visit, the DTSC observed an area within Site 39A that contained accumulations of clay pigeon fragments greater than 6 inches in depth. The DTSC submitted comments on the Site 39A *Interim Action Confirmation Report* on July 17, 2002. In response to the observations of the DTSC and the comments, the Army conducted the removal of clay pigeon fragments in 3 areas where the debris was deeper than 6 inches in October 2002. The clay pigeon debris was removed from these 3 areas down to native soil and laterally out to where debris remaining did not exceed a depth of approximately 2 inches. Approximately 65 cubic yards of debris and soil were removed.

Sampling conducted as part of the characterization of Site 39A concluded that PAHs (a component of clay pigeons) were not detected in soil in areas containing accumulations of clay pigeon fragments of 4 inches or less, except where the clay pigeons are powdered (*Draft Final Site Characterization, Site 39A - East Garrison Ranges, Fort Ord, California* [May 16, 1997]). As discussed above, PAHs in soil exceeding PRGs were removed during the IA conducted at Site 39A. On March 11, 2003, the Army submitted a letter addressing the DTSC's concerns expressed in the June 17, 2002 comment letter. The Army response letter included documentation of the removal of "significant clay pigeon fragments" observed by the DTSC during their site visit.

Based on correspondence between the Army and the DTSC, the DTSC requested additional excavation of clay pigeon fragments prior to issuing a letter stating concurrence with the proposed transfer of parcel L23.3.1. In 2003, the Army developed a detailed plan for excavating soil containing clay target debris and lead shot for the impacted area - approximately 4 acres. Post excavation sampling was required, which included analysis for lead (USEPA Test Method 6010B) and PAHs (USEPA Test Method 8310).

The excavation activities at the former trap and skeet range were performed in the summer of 2004 and involved the removal of approximately 9,000 cubic yards of soil. According to the Army, preliminary analytical results show that the excavation activities have been completed and that the post cleanup sampling is below the PRG as established and agreed upon by DTSC. A summary of these activities and the results of confirmation sampling is currently being prepared and will be presented in a letter to DTSC.

The Army will work with DTSC to gain concurrence for transfer of the parcel with no land use controls (LUCs). The only LUCs that will be imposed on the property will be in connection with restrictions on water well construction as specified in Monterey County Ordinance No. 04011. The Army will evaluate the remaining monitoring wells in the East Garrison area. If these wells are not

needed for continued groundwater monitoring, the Army may list them for destruction, if it has not already done so. The removal of any monitoring well requires the approval of regulatory agencies that are part of the BRAC Cleanup Team. These include the USEPA, the DTSC, and the Regional Board.

Asbestos

Based on the *Asbestos Survey Report, Fort Ord Installation* (April 26, 1993*),* asbestos containing materials (ACM) were identified within buildings on the project site. Detailed descriptions of the asbestos type, location, and condition rating (at the time of survey) are provided in the *Asbestos Survey Report* and are summarized in the *Fort Ord CERFA Report*, and in the *Environmental Baseline Surveys* (EBSs). Table 4.12-3 identifies buildings that have ACM.

Some of the buildings contain easily crumbled or friable ACMs that may pose a health risk if not managed properly. Friable ACMs can be effectively managed in place, provided the proper precautions are taken to minimize or eliminate exposure of personnel to airborne asbestos.

Lead-Based Paint

Based on the age of the buildings that were constructed before 1978, or because their construction date is unknown, most buildings on the property are presumed to contain lead-based paint (LBP). Limited sampling for lead within the buildings on the project site has occurred. Additional sampling for lead-based paint was conducted in former barracks buildings located on FFO property. One or more of the former barracks interior and/or exterior surface components (e.g., walls, doors, window sills, door frames, etc.) tested positive for LBP. Those barracks sampled were of the same construction type and were constructed in the same period as those on the project site.

Limited sampling for lead in soil has occurred on the property. Twenty-nine composite soil samples were collected and analyzed for lead from several locations around 10 buildings (6, 10, 14, 16, 20, 36, 71, 75, 82, and 108) on Parcel L23.3.2.1 within the project site**.** This sampling was conducted at the request of the Army to assess the presence of lead in soil associated with LBP. The buildings selected for sampling were chosen because the condition of the painted surfaces of these buildings was observed to be among the worst of the buildings on the parcel. Samples were collected from soil beneath the building drip lines and 10 feet out from the drip lines from each of the above buildings. Total lead was detected in 27 of the 29 composite samples. Average concentrations detected in soil beneath the drip lines ranged from 21.6 to 1,065 milligrams per kilogram (mg/kg). The average concentration detected in soil samples collected 10 feet out from the drip line ranged from 13.5 to 111 mg/kg. The yard-wide average lead concentration in soil—calculated by averaging the results from the drip line and 10 feet away from the drip line—ranged from 31 to 582 mg/kg. For comparison, the maximum background concentration for lead in soil at Fort Ord is 51.8 mg/kg (*Draft Final Basewide Background Soil Investigation, Fort Ord, California* [March 15, 1993]), and the PRG for residential non-play area bare soil is 1,200 mg/kg.

4.12.2 Project Impact and Mitigation Measures

THRESHOLDS OF SIGNIFICANCE

Implementation of the proposed project would have a significant impact if it were to:

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

- 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;

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

METHODOLOGY

As noted previously, several hazardous materials reports were prepared as part of the base closure and reuse process, including reports prepared by IT Corporation and Harding Lawson and Associates. A comprehensive FOST was completed in May 2003. These reports and the FOST include the following methods for assessing the impact of hazardous materials at the project site:

- Base-wide surveys for human and environmental hazards, including visual site inspections, military and regulatory agency database records searches, lead and asbestos surveys for all buildings, hazardous materials storage area surveys, surveys and documentation of underground and aboveground storage tanks, and surveys of areas potentially containing ordnance and explosives;

- Analysis of hazardous materials sites, including lead, asbestos, groundwater, and soil testing;

- Remediation feasibility studies, and;

- Descriptions of clean up activities on individual parcels at the project site.

Findings and information developed in these reports and the FOST were incorporated into this DSEIR. Information concerning hazards and hazardous materials included in the *Fort Ord Disposal and Reuse FEIS, Subsequent FEIS Record of Decision, Fort Ord Disposal and Reuse (June 1996) Supplemental Environmental Impact Statement* (SEIS), and *Subsequent SEIS Record of Decision* (June 1997) were also reviewed for this section.

IMPACT ANALYSIS AND MITIGATION MEASURES

Long-term Exposure to Hazardous Materials and Toxic Conditions

Impact 4.12-A	**Past storage, release, and disposal of hazardous materials and substances at the project site may have the potential to expose future residents and/or visitors of the EGSP area to toxic conditions. (Less than Significant)**

While various hazardous materials were stored, released and disposed of at FFO during its use by the Army, all known potentially hazardous sites and toxic conditions within the project area have been remediated, or have been identified as requiring further removal of potentially hazardous materials (i.e., clay pigeon fragments). As explained earlier in Section 4.12.1, Environmental Setting, the IRP successfully removed and/or remediated all solvents, solid waste management units, ground water contamination, petroleum products, ASTs/USTs, pesticides/herbicides, radiological materials, radon, and ordnance and explosives on the project site. The FOST, which attests to the sufficiency of the IRP, has been meticulously reviewed and approved by technical experts in the EPA and the DTSC. The transfer of federal property by the County for development of the project is prohibited unless and until all potentially hazardous conditions have been remediated as identified by the FOST. Accordingly, all potential impacts associated with long-term exposure to hazardous materials and

toxic conditions, as characterized above, would be considered less than significant with implementation of the proposed project.

Mitigation Measures

4.12-A-1 No mitigation measures are necessary.

Significance After Mitigation

Less than significant.

Short-term Exposure to Hazardous Materials During Construction

Impact 4.12-B	**There is the potential for construction personnel and populations within the proximity of the project site to be exposed to hazardous materials (lead-based paint and asbestos) as a result of the demolition of onsite structures and the offsite transportation of debris and demolition materials during the construction phase. (Less than Significant After Mitigation)**

Existing structures within the project area are known to contain potentially hazardous materials, such as asbestos and lead-based paint (LBP). During the demolition of structures and removal of debris, potentially contaminated with lead and asbestos, the possible exposure to humans or the environment during demolition and/or transport represents a potentially significant impact.

The California Division of Occupational Safety and Health (DOSH) and the federal Occupational Safety and Health Administration (OSHA) define safe exposure thresholds for all construction work where an employee may be exposed to lead, including lead-based paints and coatings. Regulations include procedures to be followed based on anticipated exposure resulting from construction activities. Since demolition in the EGSP area may involve potential worker exposure above the DOSH action level for lead, the requirements of Title 8, CA Code of Regulations, § 1532.1 (T8 CCR 1532.1) must be followed.

The DTSC has indicated continuing concern associated with demolition activities of older structures impacted by LBP and potential elevated lead levels in soil surrounding the buildings. In order to eliminate the need to impose land use controls on the transfer documents (deed restrictions) the project applicant has decided to address this issue prior to conveyance by initiating a pre-conveyance demolition program to be presented to the Army and regulatory agencies. As part of this program, soil samples were collected adjacent to the buildings of concern to assess the presence of lead in soil prior to building demolition. The analytical results of these samples were evaluated and summarized, and the findings were transmitted to the DTSC. Based on this analysis and in consultation with the DTSC, the following mitigation measures have been recommended:

Mitigation Measures

4.12-B-1 The applicant shall hire a certified hazardous materials consultant to conduct pre-demolition soil removal at one building, perform post demolition soil sampling, and remove hot spots identified in the post-demolition sampling. The applicant shall prepare a Demolition Plan for the abatement and disposal of materials impacted by LBP and asbestos, and for the disposal of building debris. This Demolition Plan will meet permitting and regulatory notification requirements (i.e. Monterey Bay Unified Air Pollution Control District [MBUAPCD], U.S. Army, DTSC, California Department of Health Services [CDHS], and California Division of Occupational Safety and Health [DOSH]). Further, safe demolition of existing structures at the

EGSP area will be reviewed and approved by the Monterey County Planning & Building Inspection Department prior to the issuance of demolition permits.

4.12-B-2 The Demolition Plan shall include a program of air monitoring for dust particulates and attached contaminants that addresses dust control and suspension of work during dry windy days.

4.12-B-3 Prior to the issuance of a demolition permit, a lead and asbestos survey shall be conducted in accordance with the requirements set forth by the MBUAPCD.

4.12-B-4 All transportation of hazardous or contaminated materials from the project site shall be performed in accordance with a *Demolition Plan and Removal Action Workplan* approved by the Environmental Health Division of the Monterey County Health Department. The Demolition Plan shall be prepared by a qualified environmental professional and shall address both on-site worker protection and off-site resident protection from both chemical and physical hazards.

4.12-B-5 All contaminated building materials shall be tested for contaminant concentrations and shall be disposed of at appropriately licensed landfills. Prior to demolition of contaminated buildings, hazardous building materials such as peeling, chipping and friable LBP and asbestos containing building materials shall be removed in accordance with all applicable guidelines, laws and ordinances.

For the impact of flaking and peeling LBP the requirements of Title 8, California Codeof Regulations, §1532.1 must be followed. These include, but are not limited to, the following:

- Loose and peeling LBP shall be removed prior to building demolition. Workers conducting removal of must receive training in accordance with the regulations.
- The LBP removal project shall be designed by CDHS certified project designer, project monitor or supervisor.
- Workers conducting removal of LBP must be certified by a CDHS certified lead project designer.
- Workers that may be exposed above the DOSH action level for lead must have their blood lead levels tested prior to commencement of lead work and at least quarterly thereafter for the duration of the project. Workers that are terminated from the project shall have their blood lead levels tested within 24 hours of termination.
- A written exposure assessment must be prepared in accordance with the regulations.
- Any amount of lead waste generated from painted building components must be characterized for proper transportation and disposal in accordance with Title 22, §66261.24.

Significance After Mitigation

Less than significant.