5.5 HAZARDS AND HAZARDOUS MATERIALS

This section evaluates the potential impacts of the 2012 Modified Project on human health and the environment due to exposure to hazardous materials or conditions associated with the Proposed Project Site, project construction, and project operations. Potential project impacts and appropriate mitigation measures or standard conditions are included as necessary. The analysis in this section is based, in part, upon the following sources:

- *Orange County Great Park EIR*, City of Irvine, May 2003
- *Orange County Great Park EIR, City of Irvine, Addenda 1 through 8, May 2006 through October 2011*
- *2011 SEIR to the 2003 Orange County Great Park EIR, City of Irvine, September 2011*.

In addition, numerous reports relating to hazards and hazardous materials have been prepared concerning the Proposed Project Site, including:

County of Orange. August 2001.*MCAS El Toro Community Reuse Plan FEIR, Volume 2B.*

Earth Tech Inc. April 2003. *Draft Final Environmental Baseline Survey, Former Marine Corps Air Station, El Toro, California.*

Earth Tech Inc. September 2003. *Final Environmental Baseline Survey, Former Marine Corps Air Station, El Toro, California.*

ENGEO Incorporated. October 2011. *Phase I Environmental Site Assessment. TCA Property, Heritage Fields, Irvine, California.*

Leighton and Associates, Inc. December 2006. *Residual Organochlorine Pesticide Soil Sampling Report, Transportation Oriented District, Proposed Heritage Fields Development at the Former Marine Corps Air Station El Toro, City of Irvine, California.*

_____. December 2006. *Aerially Deposited Lead Investigation, Transportation Oriented District, Proposed Heritage Fields Development at the Former Marine Corps Air Station El Toro, City of Irvine, California.*

Weston Solutions, Inc. 2004. *Draft Radiological Release Report, IRP Sites 3 and 5 (including APHO 46), Anomaly Area 3, and Building 244, Former Marine Corps Air Station, El Toro, California.*

U.S. Department of the Navy. September 1997b. *Final Record of Decision, Operable Units 2A and 3A, No Action Sites, Marine Corps Air Station El Toro, California*. Southwest Division, Naval Facilities Engineering Command, San Diego, California.

_____. June 2001. *Final Record of Decision, Operable Unit 3B, No Action Sites 7 and 14, Marine Corps Air Station, El Toro, California*. Southwest Division, Naval Facilities Engineering Command, San Diego, California.

_____. May 2002a. *Base Realignment and Closure Business Plan for Marine Corps Air Station, El Toro, California*. Southwest Division, Naval Facilities Engineering Command, San Diego, California.

_____. June 2002b. *Record of Decision for Operable Unit 1, Site 18 – Regional Volatile Organic Compound Groundwater Plume, Operable Unit 2A – VOC Source Area, Former Marine Corps Air Station, El Toro, California*.

_____. 2004. *Final Finding of Suitability to Lease for Carve-outs Within Parcels I, II, and III, Former Marine Corps Air Station, El Toro, California.*

_____. 2004. *Final Finding of Suitability to Transfer (Parcel IV and Portions of Parcels I, II, and III), Former Marine Corps Air Station, El Toro, California.*

_____. 2005. *Final Finding of Suitability to Transfer #2 (Portions of Parcels II and III), Former Marine Corps Air Station, El Toro, California.*

_____. April 2006. *Final Record of Decision, Operable Units 2A – Site 24, VOC Source Area Vadose Zone, Former Marine Corps Air Station El Toro, California*. Southwest Division, Naval Facilities Engineering Command, San Diego, California.

_____. 2007a. *Final Record of Decision, Operable Unit 3A, Sites 8, 11, and 12, Marine Corps Air Station, El Toro, California.*

_____. 2008. *Final Finding of Suitability to Transfer#3 (Carve-outs I-C and II-U), Former Marine Corps Air Station, El Toro, California.*

_____. 2009. *Final Finding of Suitability to Transfer #4 for Carve-Outs I-B, I-E, I-G, I-H, I-I, I-J, I-L, I-M, I-P, II-G, II-I, II-P, and III-D, Former Marine Corps Air Station, El Toro, California.*

_____. 2010. *Final Finding of Suitability to Transfer #5 for Carve-Outs I-F, I-K, I-N, I-O, I-S, II-E, II-L, II-M, II-R, and Building 746, Former Marine Corps Air Station, El Toro, California.*

_____. 2011. *Final Finding of Suitability to Transfer #6 for Carve-Outs I-D, I-Q, I-R, II-B, II-K, II-N, II-O, III-B-1, III-B-2, III-E, and III-F, Former Marine Corps Air Station, El Toro, California.*

The data used for the analysis in this Section is based on the data used in the Hazards and Hazardous Materials Chapter of the 2003 OCGP EIR as updated and expanded upon by the above listed references.

5.5.1 Environmental Setting

The following discussion of environmental setting is adapted from the 2011 Certified EIR and updated to reflect current conditions on the Proposed Project Site. The operation of many facilities located in Existing PA 51 historically involved the use, storage, transfer, and disposal of hazardous materials. No facilities historically involved in the use, storage, transfer, and disposal of hazardous materials were located in PA 30. The following discussion summarizes information from the Base Realignment and Closure Business Plan for MCAS El Toro, dated May 2002 (DON 2002a), and other sources that informed the 2003 OCGP EIR, as well as other relevant sources prepared after the 2003 OCGP EIR, including the Final Finding of Suitability for Transfer ("FOST") 1 through FOST 6 documents. As described below, those six FOSTs document that all necessary remediation has been completed to protect

human health and the environment on 3329.7 acres of the former MCAS El Toro. Information concerning remediation is subject to periodic change as additional information is generated from cleanup programs and activities that are being planned for, or are in progress. This information may be found at the MCAS El Toro Information Repository Collection located both at the Heritage Park Regional Library in Irvine, California, and at the former MCAS El Toro library.

The military mission at the former MCAS El Toro commenced towards the end of World War II and concluded with the closure of the air station in 1999. During the approximate 55 years of military operation, the air station activities and operation and maintenance of military aircraft and automotive vehicles, required the use of a large variety of hazardous materials. These hazardous materials consisted of petroleum-based products such as aviation and vehicular fuels, engine and lubricating oils, solvents, cleaners, paints, thinners, pesticides and herbicides; chlorinated/halogenated compounds, including trichloroethylene ("TCE") and polychlorinated biphenyls ("PCB"); some radioactive materials; ordnance munitions; and propellants. Use of these materials typically involves the generation of hazardous byproducts and waste. A risk of explosion is associated with some of these materials. Oil-water separators ("OWS") were located throughout the former air station at various facility locations. Wastewater from aircraft wash areas and vehicle wash racks passed through OWSs to the sanitary sewer and storm drainage systems. Materials recovered from the OWSs were handled as hazardous waste. Fuel storage areas also generated hazardous waste when fuel storage tanks were cleaned and sludge was pumped out, or when fueling/defueling or loading/unloading operations resulted in spills. Permitted hazardous waste storage areas were located throughout the former air station and held hazardous, flammable, and unused chemical material and wastes. Ordnance munitions were used, handled, stored, and disposed of in PA 51. Pesticides and herbicides historically were used at the former air station to control rodents, vectors, and weeds, as well as on agricultural parcels leased to farming operations. PCB transformers were in use throughout the former air station.

Although a total of 1,114 buildings have been surveyed, abated, and demolished since certification of the 2003 OCGP EIR, there are approximately 180 buildings (both residential and non-residential) remaining on the former MCAS El Toro site. Many of these remaining buildings and facilities may contain hazardous building materials such as asbestos-containing building materials ("ACM") and lead-based paint ("LBP"). ACM is associated with respiratory ailments, including cancers, which are caused by inhaling asbestos fibers, as well as with gastro-intestinal disease associated with ingestion of ACM.. Lead is known to have adverse effects on the human body, particularly in children. Exposure is usually through ingestion and inhalation. Both ACM and LBP were in common use prior to 1980 when many of the structures in Existing PA 51 were built. Prior to demolition of any of the remaining buildings, all asbestos-containing materials (1% asbestos), all assumed ACM ("AACM"), and all asbestos-containing construction materials ("ACCM"; >0.1% to 1%) will be abated in conformity with all applicable federal, State and local laws and regulations.

Many of the existing public streets in the vicinity of the Proposed Project Site were probably used by vehicles transporting hazardous materials and waste to and from Existing PA 51 and the region, which would have resulted in the potential for hazardous spills. Rail cars on the railroad tracks that traverse the Proposed Project Site may also have transported hazardous materials. Hazardous materials (jet fuel and natural gas) were also transported onto the former MCAS El Toro site by pipeline. There is an existing fuel pipeline in the railroad right-of-way along the southern boundary of the Proposed Project Site.

Site Evaluation and Risk Assessment Methods

The site evaluation and cleanup method(s) selection under CERCLA is generally referred to as the Remedial Investigation and Feasibility Study process ("RI/FS"). The RI covers site assessment activities under which lead agencies evaluate the nature and extent of site contamination, general site conditions, and begin to identify possible cleanup methods. Considerations for remedial action objectives are provided in Title 40 Code of Federal Regulations Section 300.430(e)(2)(i), which states that remedial actions selected must attain a degree of cleanup and control further releases so as to, at a minimum, assure protection of human health and the environment. In the FS process, comprehensive cleanup options are developed and evaluated to select alternatives. Permanent solutions are preferred as opposed to mere containment or re-disposal of contaminated materials. The USEPA and individual states approve cleanup plans, including cleanup standards, in a formal document called a Record of Decision ("ROD"). Final cleanups should reduce contamination to levels that meet federal Clean Water Act and Safe Drinking Water Act standards as well as potentially more stringent Applicable or Relevant and Appropriate Requirements ("ARAR") standards.

All Installation Restoration Program (IRP) sites on military installations follow the comprehensive, step-by-step CERCLA RI/FS process. Although some sites may require interim remedial actions, permanent cleanup follows the signing of a ROD. For evaluated sites that are determined to not have any contamination or have insignificant levels of contamination, no feasibility study is conducted and the process is completed with a No Further Action ROD. Some sites may require the implementation of interim remedial actions.

As lead agency, the Department of the Navy ("DON" or "Navy") is responsible for the establishment of cleanup goals. The DON's approach to the former MCAS El Toro site has been to evaluate and identify remediation strategies that allow for unrestricted use of as much of the land and resources as possible.

Prior to issuance of any grading permits, the Applicant will demonstrate to the City that the development will not create any increased risk to human health and the environment.

In September 2006, soil samples were collected throughout the areas currently zoned 3.2 TOD to assess the potential presence of residual organochlorine pesticide contamination and evaluate any potential human health risk that may result from the residual pesticides. In total, 38 soil samples were collected and analyzed for organochlorine pesticides by EPA Method 8081A. Sample results were compared to EPA, Region 9 Preliminary Remediation Goals (PRGs) and California Human Health Screening Levels (CHHSLs) for residential and industrial soil. No concentrations of organochlorine pesticides were detected above the EPA's PRGs or CHHSLs for residential and industrial soil (Leighton and Associates 2006).

In October 2006, soil samples were collected to assess the potential presence of aerially deposited lead (ADL) in the soils adjacent to the Caltrans right-of-way. The data was collected to determine the best deposition of soils that would be disturbed during proposed construction. ADL is the result of tetra ethyl lead, which was added to gasoline as an anti-knocking agent. The lead was present in vehicle exhaust emissions and can now be found in soils adjacent to major thoroughfares. In total, 20 soil samples were collected and analyzed for the presence of lead by EPA Method 6010. Sample results were compared to Federal (RCRA) and State (Title 22) Hazardous Waste Criteria. None of the soil samples analyzed had contaminant concentrations in excess of total threshold limit concentrations or concentrations of at least ten times the listed Soluble Threshold Limit Concentration or in excess of the California Human Health

Screening Level of 80 milligrams per kilogram (mg/kg); therefore, the soil is not considered hazardous waste (California CFR, Title 22, 2006) (Leighton and Associates 2006).

In addition to the RI/FS and pesticide and ADL sampling activities, a Phase I Environmental Site Assessment ("ESA") was conducted in October 2011 for the 11 acres located between the current western boundary of Existing PA 51 and SR-133 between Trabuco Road and Irvine Boulevard. This property is being proposed for inclusion into the 2012 Modified Project to create a cohesive development governed by a unified set of land use development regulations. The Phase I ESA concluded that the site reconnaissance and records review did not find documentation or physical evidence of soil or groundwater impairments associated with the use of the property; review of regulatory databases maintained by county, state, and federal agencies found no documentation of hazardous materials violations or discharge on the property; review of regulatory agency records and available databases did not identify contaminated facilities within the appropriate search distances that would be expected to impact the property; and assessment of surface soil did not identify any impact associated with former pesticide use or aerially deposited lead. No further environmental studies were recommended as a result of the Phase I ESA (ENGEO Incorporated 2011).

Environmental Restoration Programs at MCAS El Toro

Installation Restoration Program

The Installation Restoration Program (IRP) for the former MCAS El Toro was authorized in 1984, and the Initial Report was completed in 1986. The IRP outlined hazardous remediation needs and identified 24 sites (Sites 1-22, 24, and 25) for investigation at the former MCAS El Toro. The IRP sites were originally divided into two categories: No Further Action sites (Table 5.5-1) and Action Required sites (Table 5.5-2). The IRP Sites identified as Action Required sites are depicted on Figure 5.5-1, *Installation Restoration Program Sites*. The Action Required IRP sites that are located within the Proposed Project Site include Anomaly Area 3, and IRP Sites 3, 5, 8, 12, 16, 18, and 24.

Table 5.5-1
No Further Action IRP Sites and Zoning

IRP Site	IRP Site Description	Existing Zoning District	Proposed Zoning District
4	Ferrocene Spill Area	8.1 TTOD	8.1 TTOD
6	Drop Tank Drainage Area No. 1	8.1 TTOD	8.1 TTOD
7	Drop Tank Drainage Area No. 2	1.9 Great Park	1.9 Great Park
9	Crash Crew Pit No. 1	1.9 Great Park	1.9 Great Park
10	Petroleum Disposal Area	1.9 Great Park	1.9 Great Park
13	Oil Change Area	1.9 Great Park	1.9 Great Park
14	Battery Acid Disposal	1.9 Great Park	1.9 Great Park
15	Suspended Fuel Tanks	1.9 Great Park	1.9 Great Park
19	Aircraft Expeditionary Refueling	8.1 TTOD	8.1 TTOD
20	Hobby Shop	8.1 TTOD	8.1 TTOD
21	Materials Management Group	6.1 Institutional	6.1 Institutional
22	Tactical Air Fuel Dispensing System	1.9 Great Park	1.9 Great Park

Sources: Cotton/Bridges/Associates 2002, updated by Weston 2012.

Table 5.5-2
Action Required IRP Sites and Zoning – 2012 Modified Project

IRP Site	IRP Site Description	Existing Zoning District	Proposed Zoning District
Proposed Project Site			
3	Original Landfill	1.9 Great Park/8.1 TTOD	1.9 Great Park/8.1 TTOD
5	Perimeter Road Landfill	1.9 Great Park	8.1 TTOD
8	DRMO Storage Yard	6.1 Institutional/3.2 TOD	6.1 Institutional/8.1TTOD
12	Sludge Drying Beds	6.1 Institutional	6.1 Institutional
16	Crash Crew Pit No. 2	1.9 Great Park	1.9 Great Park
18	Groundwater Regional	1.9 Great Park/6.1 Institutional/3.2 TOD	6.1 Institutional/1.9 Great Park/8.1 TTOD
24	VOC Source Area	6.1 Institutional/1.9 Great Park/3.2 TOD	6.1 Institutional/1.9 Great Park/8.1 TTOD

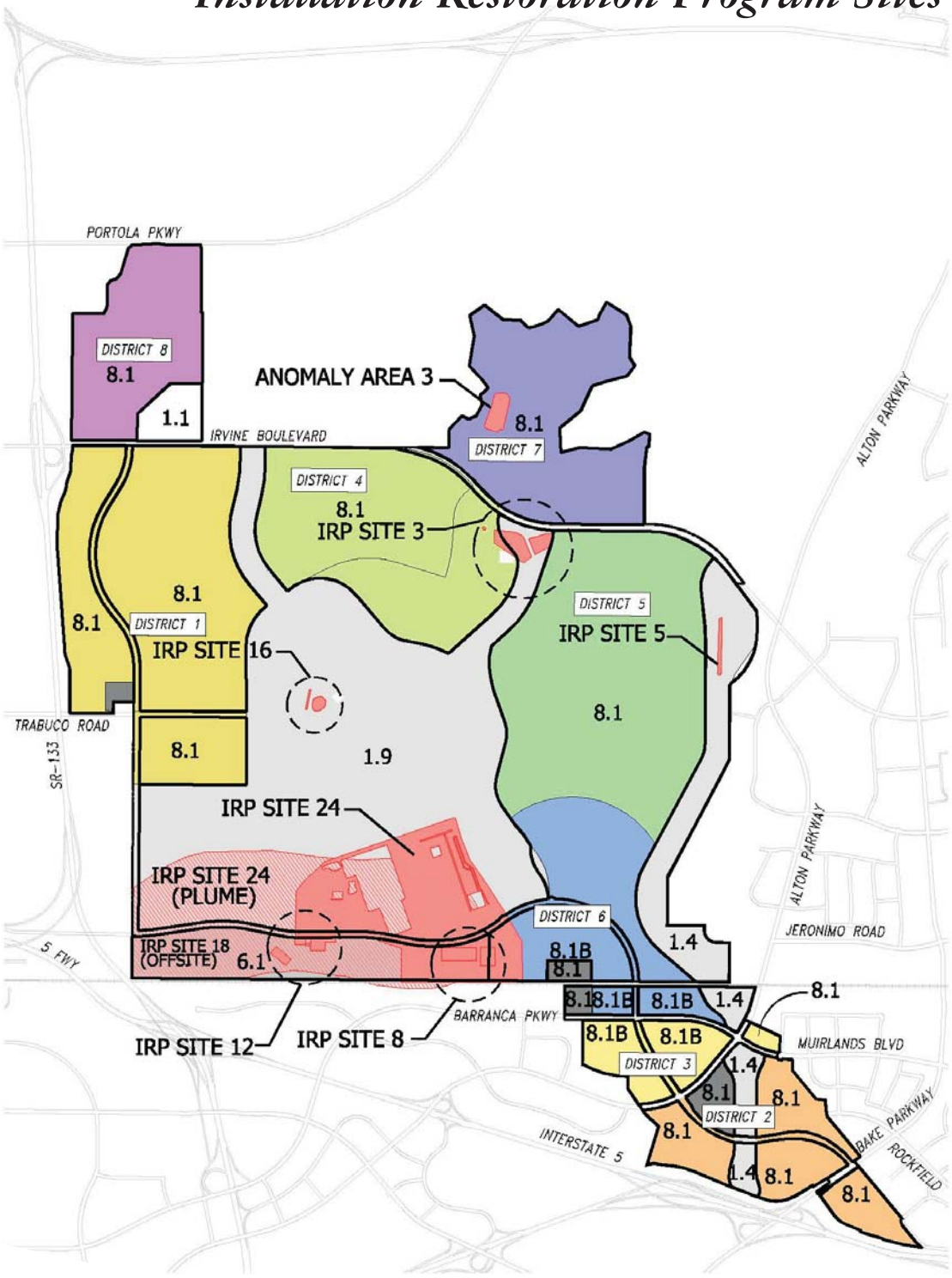
Sources: Cotton/Bridges/Associates 2002, updated by Weston 2011.

The Action Required sites and Anomaly Area 3 are currently at various stages of remedial investigation and/or cleanup. The four IRP Action Required sites that have the highest priority are Sites 18 and 24 (VOC groundwater and soil contamination) and former landfill Sites 3 and 5.

IRP Sites 18 (Groundwater-Regional) and 24 (VOC Source Area and Shallow Groundwater Unit). The two most wide spread contamination issues emanate from Sites 18 and 24. Aircraft and support vehicle maintenance that utilized industrial solvents was conducted at Site 24 (potential VOC source area) from the mid-1940s to the mid-1970s. Solvents, including TCE and other VOCs, were used for degreasing parts, painting, stripping, and aircraft and vehicular washing. Site 18 is a VOC plume caused by VOC contaminants leaching from Site 24 through the subsurface soils (vadose zone) into the shallow aquifer and then to the deeper aquifer, which flows generally to the northwest. Site 18 currently extends roughly from Site 24 down-gradient approximately three miles (west and northwest) into the City of Irvine.

Remediation for Sites 18 and 24 is a two-step process**.** Soil remediation of Site 24 by soil vapor extraction ("SVE") was planned to prevent or significantly minimize further impact to the groundwater. The interim ROD for Site 24 was signed in 1997, and SVE treatment commenced in 1999. Testing of the vadose zone was completed in 2000 and a draft closure report was issued in 2001. For Site 18, the DON, the Orange County Water District ("OCWD"), and the Irvine Ranch Water District ("IRWD") negotiated an agreement to construct and operate a joint water supply treatment project that would remove contaminants from the groundwater to levels acceptable to the regulatory agencies (the "Irvine Desalter Project").

Installation Restoration Program Sites



In addition to the interim ROD issued for the contaminated soil on Site 24, a final ROD for groundwater contamination at Sites 18 and 24 was signed in June 2002. Please refer to the Final Record of Decision, Operable Unit 1, Site 18 – Regional Volatile Organic Compound Groundwater Plume, Operable Unit 2A, Site 24 – VOC Source Area, Former MCAS El Toro, California (DON 2002b) for additional information. Pursuant to a settlement agreement, the Final ROD selected a groundwater extraction and VOC treatment remedy to address the TCE contamination that incorporated a modified version of the Irvine Desalter Project. The OCWD, IRWD, and the settling federal agencies, comprised of the Department of Justice ("DOJ") and the DON, reached an agreement documenting that the Modified Irvine Desalter Project, operated by OCWD/IRWD, would accept and treat VOC-impacted groundwater from IRP Site 24 (DOJ 2001). A Draft Final (100-Percent) Design Submittal for the Irvine Desalter Project was submitted in May 2005 (Tetra Tech 2005). The Final 100-Percent Design Submittal finalized the engineering design and specifications for the Site 24 Shallow Groundwater Unit ("SGU") remedial action at IRP Site 24 (Weston 2005). The ongoing groundwater remedy of extracting and treating VOC-impacted groundwater began in 2006. A Final Performance Monitoring and Sampling and Analysis Plan ("PMP") for OU-1 and OU-2A Groundwater Remedy was submitted in August 2007 (Earth Tech 2007). A Final Operating Properly and Successfully ("OPS") Report for IRP Site 24 was submitted on July 13, 2010 (Weston 2010a). E-mail concurrences were provided on that OPS Report by the RWQCB on July 2, 2010, and the DTSC on July 6, 2010. The USEPA concurred with the OPS Report on September 9, 2010 (USEPA 2010). Current groundwater plume information can be obtained from the IRP Site 24 Groundwater Monitoring Report (Weston 2010b).

IRP Sites 3 (Original Landfill) and 5 (Perimeter Landfill). IRP Site 3 (Original Landfill) covers approximately 20 acres and operated between 1943 and 1955. It was the original former MCAS El Toro landfill, which was operated as a cut-and-fill disposal facility. IRP Site 5 (Perimeter Landfill), which covers approximately 1.5 acres, operated between 1955 and the late-1960s as a cut-and-fill disposal facility. Typical of municipal landfills, Sites 3 and 5 contain a variety of materials disposed at assorted locations within the respective landfills. Please refer to the Final Remedial Design/Remedial Action Work Plan, Operable Unit 2C, IRP Sites 3 and 5, Former Marine Corps Air Station El Toro, California (Shaw, 2009), for additional information.

The initial phase of the Site 3 investigation is complete and the results are presented in the Final Technical Memorandum (Earth Tech 2005). The preliminary results indicated that waste placement areas on Site 3 were significantly smaller in size than previously reported in the RI. In addition, the investigation identified waste placement that occurred outside the previously demarcated boundaries. Further investigation activities were conducted to characterize the site. IRP Site 3 (including the approximate 100-foot buffer zone) was assigned an Environmental Condition of Property ("ECP") area type of Category 6 because releases of hazardous substances were identified and response actions were required.

A Draft ROD was issued for Sites 3 and 5 in 1999. However, the Draft ROD was not finalized at that time due to the need to incorporate information from radiological investigations. Subsequent investigations were performed as a first step in the landfill cover remedial design and to assess potential radiological ("RAD") contamination at Sites 3 and 5. The Final ROD (Navy, 2008) presents the selected remedial action for Sites 3 and 5 and has been updated to reflect results of the FS Addendum (Earth Tech, 2006) for Sites 3 and 5. The Navy and USEPA co-selected the following remedial actions:

- No action for groundwater at Sites 3 and 5
- No action for soil at Site 3, Units 2 and 3
- Further action for soil at Site 3, Units 1 and 4, and at Site 5

Site 3, Unit 4 and Site 3, Unit 1 Waste Areas B through F were recommended for unrestricted reuse after wastes from those areas are consolidated into Site 3, Unit 1 Waste Area A.

Based on the comparative ranking of alternatives presented within the FS Addendum (Earth Tech, 2006), the Navy and USEPA co-selected "Alterative 4d" as the remedy of choice for Sites 3 and 5. In accordance with the Final ROD (Navy, 2008), the selected alternative for remediation at Sites 3 and 5 consists of the following primary components:

- A single-barrier cap with a flexible membrane liner ("FML") will be used to prevent contact with landfill materials and reduce the infiltration into landfill contents.

- Land-use restrictions applying to the landfill areas and extending approximately 100 feet beyond the waste boundaries will be used to protect the landfill covers, ensure that the containment remedy and contents of the landfills are not disturbed without approval of the FFA signatories, and allow the Navy and other agencies to access the sites for maintenance and monitoring. Construction of structures within the 100-foot buffer zone will require concurrence of the FFA signatories and the California Integrated Waste Management Board ("CIWMB").

A Final Remedial Design/Remedial Action Work Plan dated August 2009 and Operation and Maintenance/Long-Term Monitoring Plan dated November 2010 have been prepared and approved by the DTSC and the field construction activities have been completed. A Removal Action Completion Report is due to the DTSC in 2012.

IRP Sites 8 and 12. IRP Site 8 is the former Defense Reutilization and Marketing Office (DRMO) Storage Yard where PCB-containing transformer fluids were released. It operated from the mid-1970s to early 1999. Wastewater sludge was spread on land at two locations adjacent to IRP Site 12 (Sludge Drying Beds) from 1943 to 1972. Site 12 also includes former sewage and industrial wastewater treatment plant sites. The HRA Report also identified IRP Sites 8 and 12 as potentially associated with the storage or disposal of radium paint residues. According to information in the HRA Report, IRP Site 8 may have received, for temporary storage waiting for disposal, empty radium paint containers and debris from the demolition of the Radium Paint Shop at Building 296. IRP Site 12 may have received sludge contaminated with Radium 226 from the sanitary sewage treatment plant that resulted from the disposal of radium paint into the sanitary sewer system.

Investigations conducted at Site 8 include Phase I and II RIs, during which shallow soil samples were collected. These investigations indicated that VOCs, SVOCs, PAHs, PCBs, pesticides, petroleum hydrocarbons, and target analyte list metals above background levels are present in shallow soil at Site 8. Results of the sampling were used to perform risk calculations. Based on the results of risk calculations, a Draft ROD was issued that recommended No Further Action for Units 1, 2, and 4 of Site 8 (DON 1999b). Further Action was recommended for Units 3 and 5 of Site 8, due to excess risk caused by PCB and PAH concentrations. Pursuant to comments received on the Draft ROD, risk calculations were conducted, based on updated toxicity and exposure values provided by the USEPA and Cal/EPA, and the Navy issued a Final Technical Memorandum Risk Reevaluation for Sites 8 and 12 (Earth Tech 2003c). Based on additional analytical results, IRP Site 8, Unit 5 (Units 1 through 4 are located within Navy leased area CO III-B-3) was determined to require No Further Action.

IRP Site 8, Units 1 and 4 were selected for further response action under CERCLA. The development and evaluation of remedial action alternatives for Ra-226-impacted soil at IRP Site 8, Units 1 and 4 was

conducted in a FS Addendum for IRP Site 8 (Earth Tech, 2006), which was finalized in February 2006. Following finalization of the applicable ROD (DON, 2007), and prior to issuance of the RD/RA Work Plan (Accord, 2008a), pre-excavation sampling was conducted to refine the lateral and vertical extents of non-radiological COCs exceeding their respective target cleanup goals at IRP Site 8, Unit 3 and IRP Site 12, Unit 3. Remediation of Sites 8 and 12 through excavation in accordance with the applicable ROD (DON, 2007) has been completed by the Navy and both sites are awaiting closure from regulatory agencies.

IRP Site 16. Aviation fuels (JP-5, AVGAS), chlorinated solvents, hydraulic fluid, crankcase oil, white phosphorus, magnesium phosphate, and napalm were burned in unlined pits for fire training at IRP Site 16 (Crash Crew Pit No. 2) from 1972 to 1985. A Phase I Remedial Investigation was conducted for this site. A ROD documenting the selected remedy, namely monitored natural attenuation for groundwater with institutional controls, was signed in 2003 (DON 2003). A Final OPS Report was completed in September 2007 (DON 2007) and received regulatory agency concurrence (U.S. EPA 2007, DTSC 2007, RWQCB 2007). In accordance with CERCLA Section 120(h)(3), once an OPS determination has been granted, the Navy can transfer the property subject to the covenants in CERCLA Section 120(h)(3). The Draft Remedial Action Completion Report ("RACR") (DON, 2011) prepared for Site 16 documents that the deep vadose zone (from 10 feet below ground surface [bgs] to groundwater, which is present at approximately 170 feet bgs) response action (i.e., monitoring) is complete and No Further Action is required for the deep vadose zone at Site 16. The Draft RACR Report meets the requirements of a Closure Report as specified in the Final ROD (DON 2003). The Final ROD documented No Further Action for surface and shallow soil (0 – 10 feet bgs) at IRP Site 16. Based on the results of soil gas monitoring, petroleum corrective actions including SVE and MPE remediation, and modeling results, it is unlikely for VOCs to further impact groundwater (due to infiltration) at concentrations exceeding drinking water standards. As a result, it has been recommended that the requirement for positive drainage within the Main Pit on Site 16 be eliminated. An Explanation of Significant Differences ("ESD") will be prepared to document the change in Land Use Controls ("LUCs") and will be submitted to the Administrative Record File for Site 16.

Anomaly Area 3

Anomaly Area 3 ("AA3") is an approximately 13-acre site located in the northwest section of the Proposed Project Site near Pusan Way and adjacent to the Agua Chinon Wash in zoning district designation 8.1 TTOD. AA3 is considered a former refuse disposal area for construction debris. To date, the DON has conducted a geophysical investigation, exploratory trenching, radiological screening, and installed monitoring wells and vadose zone wells. Preliminary results indicated the presence of buried metallic and construction debris, along with plastics, asbestos, pipes, wood and concrete. The 2000 HRA showed that radiological readings in the soil were at or below background levels. AA3 has therefore been considered to meet the radiological criteria for unrestricted use. Some groundwater samples exceeded the maximum contaminant levels and will be subject to further investigation. Soil levels for arsenic, total petroleum hydrocarbons, lead, and benzo(a)pyrene exceed industrial and residential Preliminary Remedial Goal standards.

The 2008 RI/FS Report presents results from the remedial investigation conducted to characterize environmental conditions at AA3 and to estimate potential risks to human health and the environment. The FS presents an evaluation of remedial alternatives. The final remedy for the site selected in the Final ROD, approved by DTSC on September 2, 2010, includes waste consolidation, grading of the existing cover, and construction of a finger dike to control storm water in the vicinity of Agua Chinon Wash. The

selected remedy includes institutional controls which are identified in the Proposed Plan (DON, 2008). The remedial alternatives are expected to be completed by the end of 2012.

Jet Fuel Distribution System

The Defense Fuel Supply Point Norwalk Pipeline was used as a jet fuel distribution system in support of the military mission at the former MCAS El Toro. The pipeline originated in Norwalk, California, entered the Proposed Project Site near the existing commissary located adjacent to Irvine Boulevard, and ran through the former air station housing to the former storage tank facilities. A portion of the pipeline was located in Carve-out II-U. In May 1999, all the jet fuel was purged from the entire pipeline using a pigging process and was replaced with an inert gas (nitrogen). The pipeline was removed in 2006, with the exception of approximately 100 feet that remains in place under the Agua Chinon Wash. That 100-foot section of the pipeline was closed off in place. The property associated with the pipeline in Carve-out II-U was conveyed to the Applicant in FOST #3 (DON 2008).

Resource Conservation and Recovery Act Facility Assessment

A RCRA Facility Assessment ("RFA") was conducted for the former MCAS El Toro between 1990 and 1993. The purpose of the RFA was to identify SWMUs and TAAs where there was an actual, or potential for, release of hazardous waste into the environment, and whether further actions might be required. The RFA was finalized on May 31, 1996. It presents results, recommendations and closure strategies for SWMUs and TAAs. Some of these sites are incorporated in the IRP; others are handled under alternative regulatory procedures. The RCRA sites must meet current environmental compliance requirements. The State of California considers any site from which hazardous constituents may migrate to be a SWMU, but corrective action can be addressed through the Federal Facilities Agreement for the former MCAS El Toro or through responses to petroleum releases with oversight provided by the RWQCB. DTSC has determined that all corrective action obligations required under RCRA for the property subject to FOSTs 1, 2, 3 and 4 (a total of 2854.8 acres) are complete. Final RCRA Corrective Action Complete Determination Packages are documented in FOSTs 1 through 4. Because of continuing groundwater monitoring at FOST 5 and 6 sites, RCRA corrective actions have not been determined to be complete for those sites.

Compliance Program Sites and Other Locations of Concern

A number of compliance programs are in effect at the former MCAS El Toro which cover different types of locations of concern, including USTs, less-than 90-day accumulation areas, PCB transformers, and OWSs. Many of these facilities were used to support operations on the former air station.

A storage tank assessment was conducted at former MCAS El Toro to address compliance and closure issues related to USTs/ASTs. The September 2003 Final EBS provides the most recent and comprehensive assessment of the status of storage tanks at the former MCAS El Toro. The Orange County Health Care Agency ("OCHCA") oversees tank closure and ensures that the proper locations are sampled when tanks are removed. The RWQCB oversees site assessments, site remediation, and groundwater remediation associated with releases of hazardous substances from USTs. Based on the April 2003 Draft Final EBS, a total of 404 USTs were in use at the former air station. Of those USTs, 357 have been remediated and have received findings of No Further Action from the appropriate regulatory authority. Of a total of 39 ASTs used in support of the military mission at the former MCAS El Toro, 36 have been remediated and have received findings of No Further Action.

The DTSC states that the former MCAS El Toro contains two hazardous waste management units ("HWMU"). The HWMUs include a hazardous waste container storage area and an open burn/open detonation ("OB/OD") hazardous waste treatment unit. A hazardous waste facility permit (a RCRA-equivalent permit) to operate the hazardous waste container storage area designated as Building 673-T3 was issued in August 1993 by the DTSC. The permit allowed the storage of hazardous wastes for longer than 90-days in Building 673-T3. In March 1996, the closure certification report was accepted by the DTSC and the container storage area was considered closed.

Emergency Plans

The former MCAS El Toro (PA 51 and 30) is a potential emergency response staging area in the event of a large regional catastrophe (e.g. a severe earthquake) because of its capacity for processing and storing large quantities of cargo. The County of Orange, in coordination with all other local jurisdictions and emergency service providers in the County, is responsible for the preparation, maintenance, and implementation of emergency response plans and emergency evacuation plans for the County. The "Orange County Emergency Plan" is the official emergency plan for the County. That Plan is a basic reference and training document for emergency preparedness, response, recovery, mitigation, and provides the authority and basis for the development of more detailed departmental and functional standard operating procedures. It also incorporates the standardized emergency management system and national incident management system ("SEMS/NIMS") established by the California Emergency Management Agency ("Cal EMA"). The SEMS/NIMS standardizes the response to emergencies involving multiple jurisdictions or agencies.

Wildland Fires

The Approved Wildlife Corridor Feature, and residential areas in the northeastern portion of PA 51 would be exposed to the highest level of fire risk from wildfires because these areas are adjacent to the NCCP Reserve which is currently defined as having high risk for wildland fires.

5.5.2 Thresholds of Significance

Based on Appendix G of the CEQA Guidelines, the City has determined that a project would normally have a significant effect on the environment if the project would:

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.

H-5 For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would result in a safety hazard for people residing or working in the project area.

H-6 For a project in the vicinity of a private airstrip, result in a safety hazard for people residing or working in the project area.

H-7 Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

H-8 Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to the urbanized areas or where residences are intermixed with wildlands.

Chapter 8, Impacts Found Not to Be Significant, substantiates the City's determination in the Initial Study for the 2012 Modified Project (Appendix A to this DSSEIR), substantiates that the following impacts would be less than significant: H-1, H-2, H-3, H-5, H-6, and H-7. Therefore, these impacts will not be addressed in the following analysis. Impact areas H-4 and H-8 are discussed in detail below.

5.5.3 The 2011 Approved Project

Hazardous Materials and Wastes

The 2003 OCGP EIR analyzed the impacts of hazardous materials and wastes associated with the Approved Project Site. Several addenda have further refined uses within Existing PAs 30 and 51. The 2011 SEIR included revised analysis based on changes to the proposed residential and non-residential uses within Existing PAs 30 and 51. The combination of these documents and addenda comprise the 2011 Certified EIR which identified no significant impacts associated with the No Further Action IRP sites. The 2011 Certified EIR disclosed the following significant impacts of developing the Approved Project Site with the 2011 Approved Project:

- Construction activities involving demolition and possible substantial remodeling of existing structures in the Approved Project Site as the Approved Project Site develops could result in the disturbance of structures and soils containing asbestos-containing building materials (ACM) and lead-based paint.

- IRP Site 24 is located in the 6.1 Institutional, 1.9 Great Park, and 8.1 TTOD zoning districts. The site may be conveyed with temporary restrictions on use..

- Future uses of IRP Sites 3 and 5 may be potentially constrained by the implementation of institutional controls.

- IRP Site 16 (Crash Crew Pit No. 2) is located in the 1.9 Orange County Great Park zoning district. The site may be conveyed with temporary restrictions on use that are not appropriate for recreational land uses.

Emergency Plans

The 2011 Certified EIR determined that the 2011 Approved Project would not be expected to interfere with emergency response and evacuation plans on the basis that other sites within Orange County are already designated as emergency staging areas and portions of the Approved Project Site would remain available for use by non-aviation emergency response equipment. Accordingly, the 2011 Certified EIR concluded that the while major portions of the Approved Project Site would be developed; sufficient acreage is expected to remain within preservation areas and the Great Park to allow for emergency staging operations. Therefore, residential and non-residential uses were found to not result in a significant impact related to emergency response and evacuation plans.

Wildland Fires

The 2011 Certified EIR concluded that the NCCP Reserve, Approved Wildlife Corridor Feature, and Recreational areas in the northeastern portion of Existing PA 51 would be exposed to the highest level of fire risk from wildland fires under the 2011 Approved Project, and that reuse of existing buildings require inspection for conformance to fire life safety code requirements. However, due to project design features included as part of the 2011 Approved Project, the 2011 Certified EIR concluded that the wildland fire hazard impacts would be less than significant.

5.5.4 Environmental Impacts of the 2012 Modified Project

Existing Plans, Programs, and Policies

The following measures are existing plans, programs, or policies ("PPPs") that apply to the 2012 Modified Project which will help to reduce and avoid potential impacts related to hazards and hazardous materials:

PPP 5-1 If any underground storage tanks ("USTs") are encountered during site grading and excavation activities, they shall be removed in accordance with the existing standards and regulations of, and oversight by, the Orange County Health Care Agency ("OCHCA"), based on compliance authority granted through the California Code of Regulations, Title 23, Division 3, Chapter 16, Underground Tank Regulations. The process for UST removal is detailed in the OCHCA's "Underground Storage Tanks: The Basics." Soil samples from areas where storage tanks have been removed or where soil contamination is suspected shall be analyzed for hydrocarbons including gasoline and diesel in accordance with procedures set forth by OCHCA. If hydrocarbons are identified in the soil, the appropriate response/remedial measures will be implemented as directed by OCHCA with support review from the Regional Water Quality Control Board until all specified requirements are satisfied and a Tank Closure Letter is issued. Any aboveground storage tank ("AST)" in existence at the commencement of site development shall be removed in accordance with all applicable regulations under the oversight of Orange County Fire Authority. Compliance requirements relative to the removal/closure of storage tanks are set forth through the California Health and Safety Code, Sections 25280 through 25299.

PPP 5-2 During demolition, grading, and excavation, workers shall comply with the requirements of Title 8 of the California Code of Regulations, Section 1532.1, which provides for exposure limits, exposure monitoring, respiratory protection, and good working practice by workers

exposed to lead. Lead-contaminated debris and other wastes shall be managed and disposed of in accordance with the applicable provision(s) of the California Health and Safety Code.

PPP 5-3 Prior to approval of a conditional use permit, project applicants shall prepare a Fire Master Plan for submittal to the Orange County Fire Authority ("OCFA") consistent with OCFA Guideline B-09 (Fire Master Plans for Commercial and Residential Development).

PPP 5-4 Federal law requires compliance with Rule 29 of the Code of Federal Regulations ("CFR") Part 1926. Prior to site demolition activities, building materials shall be carefully assessed for the presence of lead-based paint, and its removal, where necessary, must comply with state and federal regulations, including Occupational Safety and Health Administration ("OSHA") 29 CFR Part 1926. The OSHA rule establishes standards for occupational health and environmental controls for lead exposure. The standard also includes requirements addressing exposure assessment, methods of compliance, respiratory protection, protective clothing and equipment, hygiene facilities and practices, medical surveillance, medical removal protection, employee information and training, signs, recordkeeping, and observation of monitoring. Furthermore, the requirements of California Code of Regulations, Title 17, Division 1, Chapter 8, identify procedures that must be followed for accreditation, certification, and work practices for lead-based paint and lead hazards. Section 36100 thereof specifically sets forth requirements for lead-based paint abatement in public and residential buildings.

PPP 5-5 Prior to site demolition activities, building materials must be carefully assessed for the presence of asbestos-containing materials ("ACM"), and removal of this material, where necessary, must comply with state and federal regulations, including SCAQMD Rule 1403, which specifies work practices with the goal of minimizing asbestos emissions during building demolition and renovation activities, including the removal and associated disturbance of ACMs. The requirements for demolition and renovation activities include asbestos surveying; notification; ACM removal procedures and time schedules; ACM handling and cleanup procedures; and storage, disposal, and landfill disposal requirements for asbestos-containing waste materials.

PPP 5-6 During site decommissioning and demolition activities, hazardous wastes must be managed in accordance with the requirements of Title 22, Division 4.5 of the California Code of Regulations. Title 22 sets forth the requirements with which hazardous-waste generators, transporters, and owners or operators of treatment, storage, or disposal facilities must comply. These regulations include the requirements for packaging, storage, labeling, reporting, and general management of hazardous waste prior to shipment. In addition, the regulations identify standards applicable to transporters of hazardous waste such as the requirements for transporting shipments of hazardous waste, manifesting, vehicle registration, and emergency accidental discharges during transportation.

PPP 5-7 During demolition, grading, and excavation, workers shall comply with the requirements of Title 8 of the California Code of Regulations, Section 1529, which provides for exposure limits, exposure monitoring, respiratory protection, and good working practices by workers exposed to asbestos. Asbestos-contaminated debris and other wastes shall be managed and disposed of in accordance with the applicable provision(s) of the California Health and Safety Code.

PPP 5-8 Evidence of soil and/or groundwater contamination (e.g., chemical odors, staining) unrelated to above/underground storage tank releases may be encountered during site development. The appropriate agency (e.g., OCHCA, DTSC, or the RWQCB) shall be notified if these conditions are encountered during construction or grading activities. With their oversight, an environmental site assessment shall be completed and a determination shall be made as to whether cleanup is required. Cleanup activities are required to be consistent with all applicable federal, State and local rules, regulations, and laws. A cleanup would not be considered complete until confirmatory samples of soil and/or groundwater reveal levels of contamination below the standards established by the oversight agency. Alternatively, a risk assessment may be prepared for the site to determine that there are no human or environmental risks associated with leaving contamination below specific levels in place. Construction in the impacted area shall not proceed until a "no further action" clearance letter or similar determination is issued by the oversight agency, or until a land use covenant is implemented.

Project Design Features

There are no project design features that apply to the 2012 Modified Project to help to reduce and avoid potential impacts related to hazards and hazardous materials.

Impact Threshold Analysis

The following analysis focuses on the potential public health and safety impacts associated with implementation of the 2012 Modified Project, as compared to the 2011 Approved Project. As detailed above, the information made available since the 2003 OCGP EIR relates to additional remedial actions, investigations and risk assessments supporting new regulatory "No Further Action" determinations, thereby reducing potential adverse impacts related to hazardous materials that may have existed at the time the 2003 OCGP EIR was prepared. As indicated below, the differences between the 2012 Modified Project and the 2011 Approved Project do not increase the potential impacts associated with hazardous materials because the property the Navy and regulators have determined to be suitable for residential use will not result in unacceptable exposures under any density scenario.

IMPACT 5.5-1: THE 2012 MODIFIED PROJECT WOULD BE LOCATED ON A SITE WHICH IS INCLUDED ON A LIST OF HAZARDOUS MATERIALS SITES COMPILED PURSUANT TO GOVERNMENT CODE SECTION 65962.5. [IMPACT H-4]

Impact Analysis: As is the case for the 2011 Approved Project, the 2012 Modified Project is located on a site which is included on the "Cortese List" of hazardous materials sites compiled pursuant to Government Code Section 65962.5. But, that fact does not in and of itself indicate that the 2012 Modified Project will create a significant hazard to the public or the environment. This discussion of Impact 5.5-1 evaluates the active IRP sites which have not yet received a formal "No Further Action" determination from the relevant regulatory agencies in order to determine whether the underlying conditions which have resulted in portions of the Proposed Project Site remaining on the Cortese List create a significant hazard to the public or environment. Those active sites are depicted in Figure 5.5-2.

Figure 5.5-1 depicts the zoning districts of the 2012 Modified Project in relation to the active IRP sites. The potential impacts of the active sites are analyzed in the discussion that follows. At each of these sites,

substantial progress has been made toward achieving regulatory closure since the 2003 OCGP EIR was prepared.

IRP Sites 18 and 24 (VOC Contamination)

Remediation of contaminated soils at IRP Site 24 began in spring of 1999 and was completed in 2001. IRP Site 24 is located in zoning districts categorized as 6.1 Institutional (current), 1.9 Great Park (current), and 8.1 TTOD (proposed). The DON's human health risk assessment for Site 24 indicates that neither a recreational or institutional land use of the Proposed Project Site would result in a higher than acceptable risk. The Final ROD addressing Site 24 was issued by the DON in June 2002. The ROD selected a groundwater extraction and VOC treatment remedy addressing the TCE plume in the shallow groundwater unit. The groundwater remedy of extracting and treating VOC-impacted groundwater was implemented in 2006. A Final OPS Report for Site 24 was submitted on July 13, 2010. The USEPA concurred with the OPS Report on September 9, 2010. The DON intends to remediate the existing contamination of the shallow groundwater at Site 24 to an unrestricted standard. This remediation process will likely take a period of years to complete and during this time the DON has implemented institutional controls to limit access to groundwater and related activities to portions of Site 24. The Draft Final FOST #6 (DON, 2010) identifies institutional controls that the DON must implement and enforce in the form of land use or activity restrictions to be implemented for a portion of Site 24. These institutional controls are as follows:

- The DON will provide OCWD/IRWD access to the property for implementation of the Irvine Desalter Project. Lease of the property to the Applicant will contain provisions for continuing access, rights-of-way licenses, and easements as necessary for such remediation activities.

- The DON has informed the Applicant that a groundwater treatment system will be operating as prescribed and that the operator has the right to collect soil samples to confirm that the Applicant's operations have not released hazardous substances that could impact the treatment system.

- OCWD/IRWD will provide reasonable access to the DON, USEPA, and the DTSC to sample pretreated and treated groundwater as necessary.

- Land-use restrictions will be implemented through two legal instruments: 1) Environmental Restriction Covenant and Agreements addressing on-Station real property containing the IRP Site 24 groundwater plume and associated buffer zone and 2) quitclaim deeds between the transferee and the DON conveying on-Station real property containing the IRP Site 24 groundwater plume and associated buffer zone.

- OCHCA and IRWD will assure that permits are applied for and obtained for any new water wells in the on-Station VOC groundwater plume and will take necessary enforcement action to assure permits are obtained and complied with.

- The DON shall provide annually copies of permit applications and permits that it has received from OCHCA and IRWD during the previous year, beginning one year from the issuance of the OU1 and OU2A ROD, and ending when remediation has been completed.

- The DON shall monitor and inspect the status of compliance with the land-use restrictions in the Environmental Restriction Covenant and Agreements and quitclaim deeds protecting on-Station extraction, injection, and monitoring wells, and associated piping and equipment concurrently with inspections of such engineering controls and equipment.

- If a violation of land-use restrictions is identified and/or documented by either the DON or the DTSC, the identifying entity will provide notification to all appropriate regulatory agencies within 10 working days.

IRP Site 18 is a plume of TCE that extends below the ground surface into the aquifer system located off-site of the former MCAS El Toro and outside of the Proposed Project Site. The institutional controls that the DON must implement and enforce for IRP Site 18 are as follows:

- Any person planning to construct a water well within the off-Station VOC plume must apply for and obtain a permit for construction.

- The DON will be provided with copies of any well permit applications received or permits issued within the geographic scope of the off-Station groundwater plume until remediation of the plume has been completed.

- The DON shall provide annually updated maps delineating the VOC groundwater plume until remediation has been completed.

The DON shall annually provide copies of permit applications and permits that it has received during the previous year, beginning one year from the issuance of the OU1 and OU2A ROD, and ending when remediation has been completed. Implementation of the institutional controls described above will reduce any potential exposures from VOC Sites 18 and 24 such that implementation of the 2012 Modified Project would have a less than significant impact. In recognition of the importance of the above-described institutional controls to the environmental remediation program and to human health and safety, this DSSEIR specifies compliance with them as mitigation measures, as did the MMRP for the 2011 Approved Project even though such compliance would otherwise be legally required (see Mitigation Measure HH 2 below).

IRP Sites 3 and 5 (Landfills)

Issues relating to IRP Sites 3 and 5 (landfills), including settling, are not expected to constrain proposed land uses within the Proposed Project Site. Possible exposure issues due to the potential presence of radioactive materials in the former landfills resulting from the disposal of radium paint residues were identified in the HRA report. As a result, the DON conducted site specific radiological investigations for the presence of radioactive materials and proceeded with the remedies described in the discussion that follows.

IRP Site 3 (Original Landfill) is located in the proposed zoning districts designated as 1.9 OCGP and 8.1 TTOD. The remediation for this site, consisting of the installation of a synthetic liner and implementation of institutional controls, has been completed. Due to the use of institutional controls in the form of land use controls, Site 3 and the associated buffer zone surrounding it will not be available for immediate reuse activity.

IRP Site 5 (Perimeter Road Landfill) is located in the proposed zoning district designated as 1.4 Preservation. The remediation for this site, consisting of the installation of a synthetic liner and implementation of institutional controls, has been completed. Due to the use of institutional controls in the form of land use controls, Site 5 and the associated buffer zone surrounding it will not be available for immediate reuse activity. The former landfill area has been capped and can accommodate shallow-rooted plants. The proposed native grasses for the Relocated Wildlife Corridor Feature meet the "shallow-rooted" restriction. The Navy has published an Operations and Monitoring/Long Term Monitoring Plan which defines land use restrictions. Per this plan, the Relocated Wildlife Corridor Feature is an acceptable use of the capped landfill, and all land use restrictions associated with this area can, and will be followed in developing the Relocated Wildlife Corridor Feature. The planting restrictions apply only to the footprint of the capped landfill (less than 10 acres), and will not affect the overall flora and fauna of the Relocated Wildlife Corridor Feature.

Implementation of the institutional controls described above will reduce any potential exposures from the landfill Sites 3 and 5 such that the 2012 Modified Project would have a less than significant impact. In recognition of the importance of these institutional controls to the environmental remediation program, this DSSEIR specifies compliance with them as mitigation measures, as did the MMRP for the 2011 Approved Project, even though such compliance would otherwise be legally required (see Mitigation Measure HH-2 below).

IRP Site 8

IRP Site 8 is located in zoning district designations 6.1 Institutional (current) and 8.1 TTOD (proposed). As mentioned previously, information in the HRA Report indicates that IRP Site 8 may have received empty radium paint containers and debris from the demolition of the Radium Paint Shop at Building 296 for temporary storage awaiting disposal. The remediation of this site, consisting of excavation and proper disposal of shallow soil contamination, confirmation sampling, and site restoration, has been completed. The site is still awaiting official closure documentation. Once that documentation is received, the DON intends to convey the site as suitable for unrestricted use. Therefore, no significant impacts are anticipated to be associated with this site.

IRP Site 12

IRP Site 12 (Sludge Drying beds) is located in a zoning district designation 6.1 Institutional. Site 12 may have received sludge contaminated with Radium 226 from the sanitary sewage treatment plant due to the disposal of radium paint into the sanitary sewer system. Remediation at Site 12, consisting of excavation and proper disposal of shallow soil contamination, confirmation sampling, and site restoration, has been completed. The site is still awaiting official closure documentation. No significant impacts are anticipated to be associated with this site.

IRP Site 16

IRP Site 16 (Crash Crew Pit No. 2) is located in zoning district designation 1.9 Great Park. Because of the potential risks associated with the existing groundwater contamination, the DON may restrict use of the site until the groundwater is remediated to an appropriate risk level, at which time the site would be released for unrestricted use. This remediation process will likely take multiple years to complete, and during this time various institutional controls could be implemented to limit certain activities and unauthorized access to the site. Those institutional controls are likely to be similar to those specified for

IRP Sites 18 and 24, described above. Implementation of those institutional controls will reduce any potential exposures from IRP Site 16 such that the Modified Project would have a less than significant impact. In recognition of the importance of these institutional controls to the environmental remediation program, this DSEIR specifies compliance with them as mitigation measures, as did the MMRP for the 2011 Approved Project, even though such compliance would otherwise be legally required (see Mitigation Measure HH-2 below).

Anomaly Area 3

Anomaly Area 3 is an approximately 13-acre site located in the northwest section of the Proposed Project Site near Pusan Way and adjacent to the Agua Chinon Wash in zoning district designation 8.1 TTOD. This site is considered a former refuse disposal area for construction debris. To date, the DON has conducted a geophysical investigation, exploratory trenching, radiological screening, installed monitoring wells and vadose zone wells and has started implementing its Proposed Plan. Preliminary results indicate the presence of buried metallic and construction debris, along with plastics, asbestos, pipes, wood and concrete. Radiological readings in the soil were at or below background levels. Some groundwater samples exceeded the maximum contaminant levels and are subject to further investigation. Soil levels for arsenic, total petroleum hydrocarbons, lead, and benzopyrene exceed industrial and residential PRG standards. Remedial actions under implementation at the site include limited site grading, minor waste consolidation, construction of a finger dyke, placement of riprap, implementation of institutional controls, and long-term monitoring. The proposed institutional controls put in place by the DON prohibit the following without prior approval from Navy regulators:

- Residential use of the sites and construction of hospitals for humans, schools for persons under 21 years of age, day care centers for children or any permanently occupied human habitation on the sites;

- Construction of facilities, structures, or appurtenances; excavation; or any other land-disturbing activity into or on the surface of the landfills that may involve adverse impacts upon the performance of the cap or affect the drainage and/or erosion controls;

- Construction of structures within 100 feet of the edge of the landfill until such time as monitoring demonstrates that contamination is not migrating;

- Planting deep-rooted plants that have the potential to interfere with the performance of the landfill cap in minimizing infiltration;

- Irrigating the surface of the landfill except when it is used for establishment, repair, and maintenance of vegetative cover required for effective performance of the cap;

- Alteration, disturbance, or removal of any component of a response action, including but not limited to a landfill cap (if constructed), monitoring wells, or survey monuments;

- Removal of or damage to security features or to monitoring equipment and associated pipelines and appurtenances.

Due to the use of institutional controls, Anomaly Area 3 and a possible buffer site surrounding it will not be available for immediate reuse activity. Implementation of the institutional controls described above

will reduce any potential exposures from Anomaly Area 3 such that the 2012 Modified Project would have a less than significant impact. In recognition of the importance of these institutional controls to the environmental remediation program, this DSSEIR specifies compliance with them as mitigation measures, as did the MMRP for the 2011 Approved Project, even though such compliance would otherwise be legally required (see Mitigation Measure HH 2 below).

Jet Fuel Distribution System

The Norwalk Pipeline was used as a jet fuel distribution system in support of the military mission at the former MCAS El Toro. As detailed above, the entire pipeline was flushed and filled with an inert gas, and the majority of it was removed in 2006, with the exception of approximately 100 feet that was closed off and left in place under the Agua Chinon Wash. The presence of the pipeline that remains is considered a less than significant impact because it contains inert material.

Mitigation Program and Net Impact

Although the 2012 Modified Project is located on a site which is included on the "Cortese List" of hazardous materials sites compiled pursuant to Government Code Section 65962.5, as is the 2011 Approved Project, the active sites described above will not create a significant impact. As indicated above, the Navy has established institutional controls for many of the sites and this DSSEIR specifies compliance with those institutional controls as mitigation measures, as did the MMRP for the 2011 Approved Project, even though such compliance would otherwise be legally required (see Mitigation Measure HH 2 below). The conclusions about the potential impacts of the 2012 Modified Project set forth in this discussion of Impact 5.5-1 are the same conclusions as those in the 2011 Certified EIR about the 2011 Approved Project. Impacts due to the 2012 Modified Project being located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 will be less than significant for the reasons set forth above.

IMPACT 5.5-2: THE 2012 MODIFIED PROJECT COULD EXPOSE PEOPLE OR STRUCTURES TO A SIGNIFICANT RISK OF LOSS, INJURY OR DEATH INVOLVING WILDLAND FIRES, INCLUDING WHERE WILDLANDS ARE ADJACENT TO URBANIZED AREAS OR WHERE RESIDENCES ARE INTERMIXED WITH WILDLANDS. [THRESHOLD H-8]

There is a potential impact resulting from exposure of people and structures to wildland fires. The Relocated Wildlife Corridor Feature and residential areas in the northeastern portion of Combined PA 51 will be exposed to the highest level of fire risk from wildfires because these areas are adjacent to the NCCP Reserve which is currently defined as having high risk for wildland fires under the updated Fire Hazard Map. Though not considered a high wildland fire hazard area, the Relocated Wildlife Corridor Feature will be subject to fuel modification requirements within its boundary, as described in PDF 10-1. Therefore, similar to the conclusions of the 2011 Certified EIR, the wildland fire hazard impacts under the 2012 Modified Project would remain less than significant.

5.5.5 Cumulative Impacts

The assessment of potential cumulative impacts with regard to hazards and hazardous materials refers to the potential for on-site and off-site hazardous materials to have a cumulative effect on the health and well-being of project occupants. The hazardous materials study area considered for cumulative impacts consists of (1) the area that could be affected by 2012 Modified Project activities, and (2) the areas affected by other off-site projects where activities could directly or indirectly affect the presence or dispersion of hazardous materials onto the Proposed Project Site. In general, only projects occurring adjacent or very close to the Proposed Project Site are considered to potentially have a cumulative impact due to the limited impact area associated with releases of hazardous materials. A number of the areas adjacent to the Proposed Project Site have been developed since the 2003 OCGP EIR. In addition, substantial portions of the Proposed Project Site which may have posed cumulative impacts to 2012 Modified Project development have been remediated and released for unrestricted use. The DON process has addressed and remediated the potential instances between the site and adjacent areas where possible impacts where identified. Finally, the cumulative impacts of Sites 18 and 24 have been reduced by the remediation processes initiated in 2006. The 2012 Modified Project is consistent with a residential development and will involve the use of limited amounts of hazardous materials. In addition, the contribution of hazardous materials use and hazardous waste disposal with implementation of the project is minimal. With implementation the institutional restrictions imposed by the DON that are described above, the other PPPs described previously, and the mitigation measures imposed on the 2011 Approved Project, the cumulative impact of hazardous materials releases or emissions from the 2012 Modified Project and past, present, and reasonably foreseeable projects in the vicinity will be less than significant.

5.5.6 Applicable Mitigation Measures from the 2011 Certified EIR

Each mitigation measure specified for implementation in the 2011 Certified EIR and associated MMRP is set forth below. All hazards and hazardous materials Mitigation Measures are the same for the 2012 Modified Project as for the 2011 Approved Project. This DSSEIR proposes to make two minor modifications to Mitigation Measure HH-2 and HH-3 adopted by the City for the 2011 Approved Project. The modification to HH-2 is being made to update the reference to this DSSEIR. The modification is being made to HH-3 is to note that the high fire hazard maps are occasionally updated and does not affect the substance of the mitigation measure. Modifications to the original mitigation measure are identified in ~~strikeout~~ text to indicate deletions and <u>underlined</u> to signify additions.

HH-1 For any remaining structures known to contain ACMs that will be renovated and/or demolished, HF shall ensure that all asbestos is removed and disposed of in accordance with applicable federal, state and local regulatory requirements.

Prior to occupancy, renovation or demolition of any remaining structures constructed before October 1988, and in which the presence of ACMs is unknown, an asbestos survey shall be conducted by Heritage Fields. This requirement can be waived if an architect or project engineer responsible for the construction of the structure or an accredited asbestos inspector signs a statement that no ACM was specified as a building material, and to the best of their knowledge, no ACMs were used as a building material. If the asbestos survey identifies ACMs, the applicant shall ensure that all asbestos is removed and disposed of in accordance with applicable federal, state and local regulatory requirements.

Any existing structures in which ACMs have been identified and which will remain in use shall be addressed in an Operation and Maintenance Plan and must be managed in accordance with applicable laws.

Any renovation and/or LBP abatement activities on residential units at former MCAS El Toro, shall be conducted in accordance with all applicable federal, state and local regulatory requirements.

HH-2 The portions of the Proposed Project Site located on the active Installation Restoration Program ("IRP") Sites listed in Table 5.5~~4~~-2, Action Required IRP Sites and Zoning – 2012 Modified Project, of the D~~S~~SEIR for the 2012 Modified Project shall be used only in accordance with the requirements of the applicable Final FOST or Finding of Suitability to Lease, including in strict compliance with all lease restrictions (such as restrictions against soil or groundwater disturbance without approval from the Navy and regulators) and all institutional controls (such as restrictions against disturbing the integrity of physical remedial components like caps or groundwater treatment systems and other restrictions imposed by the Navy).

HH-3 The Community Development Department, in coordination with the Orange County Fire Authority ("OCFA"), will be responsible for review of all development plans, which would include evaluation of very high fire severity zones, special fire protection plans, and any requirements for fuel modification zones. Projects potentially impacted by wildland fire hazards will be subject to OCFA Guidelines for "Development Within and Exclusion from Very High Fire Severity Zones" and "Fuel Modification Plans and Maintenance." Additionally, all demolition, renovation, and construction activities in the project area will be subject to review by OCFA to ensure adequate fire protection, water flow, emergency access, design features, etc., according to the standards of the Uniform Fire Code and the California Fire Code. Due to the implementation of these standard fire protection procedures and based on the revised Fire Hazard Maps, the 2012 Modified Project is not anticipated to result in significant short- or long-term adverse impacts related to fire hazards.

HH-4 Prior to issuance of occupancy permits of any existing structure at the former MCAS El Toro, a fire life-safety evaluation of the structure including recommendations for improvements required for compliance with current Building Codes for use of existing structures adopted by the City and plans for any required improvements shall be submitted to the Chief Building Official for review and approval.

HH-5 Prior to the issuance of a grading permit, the applicant shall prepare and the Director of Community Development shall approve a protocol plan (including but not limited to worker training, health and safety precautions, additional testing requirements, and emergency notification procedures) in the event that unknown hazardous materials are discovered during grading, construction, and/or related development activities. Additionally, said protocol plan will be revised should the discovery of previously unknown hazardous materials be made during any of the above mentioned development activities. The applicant and/or property owner that discovers contamination due to past military operations not previously identified by the DON shall be responsible for notifying the DON, appropriate regulatory agencies, and the Director of Community Development of the City in a timely manner. Additionally, said Protocol Plan shall be revised should the discovery of previously unknown hazardous materials be made during any of the above mentioned development activities.

HH-6 The City shall develop and maintain the location and status, as well as other pertinent information, of all monitoring wells on the former MCAS El Toro in a geographic information systems database ("GIS"). The City will review all permit applications on the former air station for monitoring well locations that may be affected by a permit, and require applicants to maintain appropriate access. Access to monitoring wells will be limited to authorized personnel.

5.5.7 Level of Significance Before Additional Mitigation

Upon continued implementation of regulatory measures, the PPPs identified above and the mitigation measures adopted in the MMRP for the 2011 Approved Project, impacts associated with the 2012 Modified Project would be less than significant without the additional mitigation**.**

5.5.8 Additional Mitigation Measures for the 2012 Modified Project

No additional mitigation measures are required because the mitigation measures identified in the 2011 Certified EIR and associated MMRP would reduce hazards and hazardous materials impacts of the 2012 Modified Project to a level of less than significant.

5.5.9 Level of Significance After Additional Mitigation

With implementation of the existing regulations, PPPs and mitigation measures outlined above from the 2011 Approved Project, potential impacts of the 2012 Modified Project associated with hazards and hazardous materials would be reduced to a level that is less than significant. Therefore, no significant impacts relating to hazards and hazardous materials have been identified.

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