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PHASE I ENVIRONMENTAL SITE ASSESSMENT

PLANNING AREA 1
(ORTEGA GATEWAY)
Ortega Highway at Antonio Parkway
San Juan Capistrano, California

May 1, 2003
(Revised February 2004)

EEI Project No. V030305-38A-PA1

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Phase I Environmental Site Assessment

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Site Location:

PLANNING AREA 1
(ORTEGA GATEWAY)
Ortega Highway at Antonio Parkway
San Juan Capistrano, California

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1.0 INTRODUCTION

1.1 Purpose

The purpose of this Phase I Environmental Site Assessment (ESA) was to assess the possible presence of *recognized environmental conditions* within the Planning Area One (Ortega Gateway) portion of Rancho Mission Viejo, located along Ortega Highway and Antonio Parkway east of the City of San Juan Capistrano, California (**Site Location Map, Figure 1**). *Recognized environmental conditions* include those property uses that may indicate the presence or likely presence of an existing, historical, or threatened release of any hazardous substances or petroleum products into structures, soil, and/or groundwater beneath the property. The term *recognized environmental conditions* is not intended to include *de minimus* conditions that generally do not present a material risk of harm to public health or the environment.

This ESA was performed in general conformance with the American Society for Testing and Materials (ASTM) *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process,* designation E1527-00.

1.2 Scope of Services

The scope of services outlined below was performed in accordance with the Agreement for Professional Services dated February 12, 2003 (Proposal 39A), between Morgan Lewis, & Bockius, LLP, and EEI.

- A review of available documents for topographic, geologic, and hydrogeologic data affecting the site.
- A review of available maps, aerial photographs and other documents to estimate historical site usage and development.
- A review of previous investigations conducted by EEI.
- A review of federal, state, county, and city documents concerning hazardous material storage, generation, and disposal, active and inactive landfills, nearby environmental concerns, and associated permits.
- Interviews with individuals having knowledge of the site.
- A site reconnaissance to ascertain the current condition of the site.
- The preparation of this report which presents our findings, conclusions, and recommendations.

1.3 Reliance

This ESA has been prepared for the sole use of Morgan Lewis, & Bockius, LLP, and Rancho Mission Viejo. This assessment should not be relied upon by other parties without the express written consent of EEI, Morgan Lewis, & Bockius, LLP, and Rancho Mission Viejo. Therefore, any use or reliance upon this assessment by a party other than Morgan Lewis, & Bockius, LLP, and Rancho Mission Viejo, shall be solely at the risk of such third party and without legal recourse against EEI, its employees, officers, or directors, regardless of whether the action in which recovery of damages is brought is based upon contract, tort, statute or otherwise.

This assessment should not be interpreted as a statistical evaluation of the site, but is rather intended to provide a preliminary indication of on-site impacts from previous site usage or the release of hazardous materials. If no significant indicators of the presence of hazardous materials are encountered during this search, this does not preclude their presence.

The findings in this report are based upon a review of published geologic and hydrogeologic information, information (both documentary and oral) provided by Rancho Mission Viejo, Orange County Planning/Building and Safety Department, Orange County Fire Authority, Orange County Health Care Agency, Orange County Agricultural Commissioner, First Search (an environmental database retrieval program), various state and federal agencies, and field observations. Some of these data are subject to change over time. Some of these data are based on information not currently observable or measurable, but recorded by documents or orally reported by individuals.

2.0 PROPOSED PROJECT

2.1 Overall Description of Proposed Project

As proposed by Rancho Mission Viejo, the project includes 22,815 acres general planned and zoned for development of up to 14,000 dwelling units in nine planning areas and other uses and open space within four planning areas. Other uses include 91 acres of urban activity center uses, 240 acres of business park uses, 50 acres of neighborhood retail uses, up to four golf courses and approximately 15,576 acres of open space area which includes a proposed 1,034 acre regional park. Within the nine planning areas proposed for development, approximately 7,694 acres would be developed. Ranching and other agricultural activities would also be retained within a portion of the proposed open space area. Infrastructure would be constructed to support all of these uses, including road improvements, utility improvements and schools. The Planning Area Location Map (**Plate 1**) illustrates the boundaries of the proposed project.

2.2 Description of Planning Area

Planning Area One is located east of the City of San Juan Capistrano boundary in the vicinity of Antonio Parkway and Ortega Highway. This planning area would encompass approximately 810 acres and provide a mix of residential, urban activity center, and open space uses. Approximately 540 acres of residential development is proposed, with construction of 1,020 dwelling units. Approximately 89 gross acres of urban activity center are also proposed as an overlay land use category within this same area. The overlay land uses would support approximately 1,190,000 square feet of urban activity center development, consisting of office space and 180,000 square feet of retail development. Within this planning area there would also be 148 acres of open space. This open space, together with the 540 acres to be developed with urban uses, would be designated I-B-Suburban Residential on the Orange County General Plan. A 122-acre portion of the proposed Rancho Mission Viejo Regional Park also is included in this planning area and would be designated 5-Open Space on the General Plan. Existing authorized land uses would continue until the commencement of any new proposed land use for the affected areas.

3.0 PHYSIOGRAPHIC SETTING

3.1 Site Description

The subject property is located at the intersection of Antonio Parkway and Ortega Highway, and encompasses the lots identified by assessors parcel numbers (APNs) 125-171-52 and 125-171-63, and portions of the lots identified by APNs 125-171-07, -10, -43, -51, -59, -61, -62, -64, -65, and -66 (**Assessor's Parcel Maps, Appendix A**). Access to the property is from several roads, including Ortega Highway, Antonio Parkway, La Pata Avenue, and several ranch access roads.

The property is bounded by undeveloped open land to the north, southeast, and east, and residential property to the west and southwest. San Juan Creek traverses the property from the eastern margin to the southwest margin. Ortega Highway traverses across the southern portion of the subject property from west to east, and Antonio Parkway/La Pata Avenue traverses the eastern portion of the subject property, from north to south. According to the Orange County Planning Department, the site is zoned A-1 (general agriculture). A copy of the County Zoning Map is included in **Appendix B**.

The subject property is currently occupied by various commercial, industrial, and agricultural businesses, the Rancho Mission Viejo headquarters, a few residences, and open fields including the following (**Site Plan, Figure 2**):

- The former Joan Irvine-Smith Pasture (northwest corner Ortega Highway and Antonio Parkway) encompasses approximately 60 acres in the northern portion of the subject property. The site includes a small wooden shed, a grazing field, and an above ground diesel tank;

- The former Les Thompson Transportation lease area (28811-A Ortega Highway) encompasses approximately one acre in the northern portion of the subject property, and includes a large wooden structure and several trailers;

- Lemon groves encompass approximately 150 acres in the western and central portions of the property, and along San Juan Creek south of Ortega Highway. A small supplies shed and three small unlabeled above-ground tanks are located in the western portion, and several electric windmills are located in the grove along San Juan Creek;

- The Rancho Mission Viejo Headquarters (28811 Ortega Highway) area includes approximately 15 acres in the central portion of the subject property. The site includes an office building, a recreation/conference complex, a residential unit (28881 Ortega Highway);

- The Oaks horse corrals (28650 Ortega Highway) encompasses approximately one and a half acres in the southern portion of the subject property. The site is occupied by horse corrals;

- A maintenance shop area (28672 Ortega Highway) which encompasses approximately one acre in the southern portion of the subject property. The site includes two shop buildings, a large garage, and parking lots (gravel and asphalt-covered);

- Residential units (28652 and 28632 Ortega Highway) along Ortega Highway in the southern portion of the subject property;

- The Oaks Polo Fields and Sierra Soils (southwest corner of La Pata Avenue and Ortega Highway) encompass approximately 60 acres in the southern portion of the subject property. The polo fields area is described as a large, multi-function facility that hosts events such as polo, soccer, car shows, and rodeos, and Sierra Soils is a small soil compost processing facility;

- D&M Nursery (29001 and 29813 Ortega Highway) encompasses approximately 22 acres in the southwestern portion of the subject property. The site is currently occupied by a commercial nursery, and includes an office, maintenance shop, storage buildings, greenhouses, various sheds and trailers. In addition, the property contains one source pond, and a water filtration/blending station;

- Miramar Nursery (29813 Ortega Highway) encompasses approximately 25 acres in the southwestern portion of the subject property. The site is currently occupied by a commercial nursery, and includes an office, storage building, greenhouses, shade houses, various sheds, and trailers;

- Miramar Cellular On Wheels (C.O.W.) site encompasses less than one acre at the southeast corner of Ortega Highway and La Pata Avenue. The site is currently used for storage of potted plant stock;

- Open space encompasses approximately 400 acres in the northern and western portions of the property.

EEI previously conducted environmental site assessments on the Oaks Polo Fields and Sierra Soils; D&M Nursery; Miramar Nursery; the former Les Thompson lease; the Former Joan Irvine-Smith Pasture; and The Oaks horse corrals. A brief summary of each ESA is included below in section 4.6.

3.2 Topography

The site is located along San Juan Creek, in a gently sloping, east-west trending alluvial valley. The site elevation ranges from 500 feet above mean sea level (amsl) in the northwestern portion to 120 feet amsl along the San Juan Creek. The topographic gradient in the site vicinity ranges from 0.17 feet per foot to the west (in the southern and eastern areas) to 0.31 feet per foot to the east-southeast (in the northern area). Surface drainage from the site flows into San Juan Creek, then eventually into the Pacific Ocean, approximately 6 miles to the southwest.

Based on the Flood Zone Map published by the Federal Emergency Management Agency (FEMA), portions of the subject property along San Juan Creek lie within an area designated as a 100-year flood plain, while the majority of the property lies within an area designated Zone X (i.e. outside a 500-year flood plain).

3.3 Regional and Local Geology

The site is located in an alluvial valley (San Juan Creek) on the southwestern slopes of the Santa Ana Mountains (Norris and Webb, 1990). The Santa Ana Mountains form the northwest margin of the Peninsular Ranges Geomorphic Province, and are comprised principally of granitic, metavolcanic, and sedimentary rocks of Jurassic to Pliocene age. The mountains are the result of relatively slow, late-Quaternary uplift which has shaped the range into a dissected horst block.

Sedimentary deposits in the site vicinity are a homoclinal sequence of marine and nonmarine formations including the Pliocene Capistrano and Monterey Formations, the Miocene Topanga Formation, the Eocene Sespe and Santiago Formations, the Paleocene Silverado Formation, and the Upper Cretaceous Williams and Ladd Formations (Morton, 1974). These deposits lie unconformably upon the older metamorphic and volcanic rocks, including the Jurassic Santiago Peak Volcanics and the Bedford Canyon Formation.

Quaternary alluvial soils, derived primarily from weathering of the Santa Ana Mountains, form the gently sloping river terraces in the site vicinity.

Soils in the northern portion of the subject property have been identified by the United States Department of Agriculture - National Resource Conservation Service as clays and clay loams of the Alo, Bosanko, and Sorrento Series (USDA, 1978). Soils in the Alo and Bosanko associations are typically well drained, and form on uplands and foothills from material weathered from calcareous sandstones and shales. These soils are slowly permeable, steep to strongly sloping, the runoff is medium to rapid, and the erosional hazard is moderate to high. Soil in the Sorrento association is typically found alluvial fans and floodplains, in material weathered from sedimentary rocks. The soils are well drained, moderately permeable, nearly level, with a slight to moderate erosional hazard and a slow to medium runoff.

Structural deformation in the vicinity of the site is related to the Elsinore Fault Zone, a major northwest-southeast trending strike-slip fault zone located approximately 19.5 miles to the northeast. Motion along the Elsinore Fault Zone is primarily right-lateral, although a vertical component may also be present. The Elsinore Fault Zone is considered active, with major ruptures occurring roughly every 250 years at magnitudes of between 6.5 - 7.5 (SCEC, 1998). Other major faults in the vicinity of the site include the Cristianitos Fault (traverses the eastern portion of the property), the Mission Viejo Fault (east of the site) and the Newport-Inglewood Fault (southwest of the site).

3.4 Regional and Local Hydrogeology

According to the Basin Plan published by the San Diego Regional Water Quality Control Board (SDRWQCB, 1994), the site lies within the Ortega Hydrologic Subarea of the San Juan Hydrologic Unit. In general, groundwater in this area has been designated as beneficial for domestic/municipal, agricultural, and industrial uses. Groundwater levels in the vicinity of the site are seasonally variable, but generally occur at between 5 and 50 feet below ground surface (EEI, 1999).

The Ortega Hydrologic Subarea is located within the San Juan Creek watershed. Cañada Chiquita Creek, San Juan Creek (in the central portion of the site), Trampas Canyon (east of the site), and Cañada Gobernadora (northeast of the site) are the major drainages within this watershed. According to the SDRWQCB, the drainages within this watershed are exempt from municipal use, but have been designated as beneficial for agricultural, industrial, warm water habitat, cold water habitat, wildlife habitat, and recreational 1 and 2.

4.0 SITE BACKGROUND

4.1 Site Ownership

Information regarding site ownership was provided by Rancho Mission Viejo. The current owner is listed as the DMB San Juan Investment North, LLC. The owners address is listed as PO Box 9, San Juan Capistrano, California, 92693.

4.2 Site History

EEI reviewed available information sources to evaluate historic land use in and around the property. Aerial photographs, United States Geological Survey maps, Sanborn Maps, City Directories and other sources were researched.

4.2.1 Aerial Photograph Review

Aerial photographs were reviewed to identify historical land development and any uses which may have impacted the site. Photographs dating from 1952 to 1999 were reviewed at Continental Aerial Photo in Los Alamitos, California. In addition, EEI reviewed an aerial photograph dating from 2002 (EDAW). **Table 1** summarizes the results of the aerial photograph review. A copy of a 2000 aerial photograph is included in **Figure 3**.

TABLE 1
Summary of Aerial Photograph Review

Year	Photo ID	Comments
1959	261-8-29-114[(1)]	The area in the central portion of the site was cleared and there were six structures (residential and barns) in the present-day headquarters area. Joan Irvine-Smith pasture area was present, along with the barn at the southwest corner of the pasture, and the property north of the pasture was vacant open space. The western portion of the property (present-day lemon groves, west of the ranch headquarters) was cleared but vacant. The portion of the property south of Ortega Highway and north of San Juan Creek was occupied by six structures that appeared to be residential buildings and barns. The southern portion (present-day polo fields) was cleared and vacant. The area currently occupied by D&M and Miramar Nurseries was vacant (covered by thick vegetation) except for the area adjacent and southeast of San Juan Creek, and north of Ortega Highway, which was cleared and occupied by several trailers and a small fenced area. The remainder of the subject property was noted as vacant and covered by thick vegetation.
1967	2-169[(1)]	Lemon groves were present in the area south of Ortega Highway and north of San Juan Creek (in their current location). The present-day Oaks Polo Fields area appears cultivated, and the Sierra Soils area was vacant and covered with thick vegetation. The present-day Miramar Nursery area was cleared but vacant. No other pertinent changes were noted to the subject property since the previous photograph.
1970	61-9-214[(1)]	A barn was noted west of the Former Joan Irvine-Smith pasture in the former Les Thompson lease area, and a pond was noted in the northwest corner of the subject property, adjacent to the present-day lemon groves. The western portion of D&M Nursery was noted as cleared and vacant. The eastern portion of D&M Nursery, the area occupied by present-day Miramar Nursery, and the area that underlies the present-day Antonio Parkway were occupied by orchards. No other pertinent changes were noted to the subject property since the previous photograph.

TABLE 1 (continued)
Summary of Aerial Photograph Review

Year	Photo ID	Comments
1973	132-12-17[(1)]	The Oaks Corrals (south of Ortega Highway) was noted in its present location. A pond was noted in the central portion of the property. The headquarters area was occupied by orchards and a small residential unit in the southeast corner. The western portion of the property was partially covered by orchards and partially cleared or tilled. The northwestern corner (near pond) was cultivated. The former Les Thompson lease area was occupied by several small structures. The open space areas in the northern portion are cleared and vacant. No other pertinent changes were noted to the subject property since the previous photograph.
1977	181-13-25[(1)]	No pertinent changes were noted to the subject property since the previous photograph.
1981	13-21[(1)]	The present-day headquarters office building, conference facility, and helipad were noted in their current configurations. The western portion of the property was occupied by orchards, appearing similar to the configuration of the orchards in the present-day. A small structure was noted adjacent to the former Les Thompson lease area. No other pertinent changes were noted to the subject property since the previous photograph.
1983	218-13-25[(1)]	The former Joan Irvine-Smith Pasture area appears cultivated, and the current structure in the former Les Thompson lease area was noted. Orchards were noted on the D&M and Miramar Nurseries properties. The Oaks Polo Fields area appears cultivated. No other pertinent changes were noted to the subject property since the previous photograph.
1987	F290/F-289[(1)]	D&M and Miramar Nurseries were no longer occupied by orchards, and appear in their current configuration with the exception of Antonio Parkway which was not present in 1987. The Oaks Polo Fields area was cleared but vacant in the eastern portion, and vacant in western portion. Two small structures were noted along Ortega Highway (the northern margin of the polo fields). The property south of Ortega Highway was noted in its current configuration. The Oaks Corral area was present and it was unclear whether the corrals were present or the area was only cleared. In addition, four small structures were present along San Juan Creek and five small structures were noted in the central portion. The western portion of the property was partially occupied by orchards and partially cleared. The pond in the northwest corner was noted, and the area around the pond was cultivated. No other pertinent changes were noted to the subject property since the previous photograph.
1992	C85-16-13[(1)]	Two medium-size buildings were noted along San Juan Creek in the Oaks Polo Field lease area, and Sierra Soils was present in the southern portion. No other pertinent changes were noted to the subject property since the previous photograph.
1993	C90-5-147/148[(1)]	No pertinent changes were noted to the subject property since the previous photograph.
1995	C101-43-30[(1)]	Several small structures were noted along the northwest margin of the Oaks Polo Fields area, and a storage area was noted along the northern margin. The western portion of the property was predominantly covered by lemon groves, except for the area on the hillside, which appears terraced and vacant. The former Joan Irvine-Smith Pasture area appeared cultivated and tilled. Three small trailers or storage units were noted north of the headquarters area and adjacent to the former Les Thompson lease area. Open space area north of former Joan Irvine- Smith Pasture was cleared and vacant. No other pertinent changes were noted to the subject property since the previous photograph.
1997	C117-43-48/47[(1)]	Antonio Parkway was under construction and stockpiled soil, large vehicles, and equipment are present on and adjacent to the road, especially along the eastern side of the road. The D&M Nursery area was noted in its current configuration. The landscape of The Oaks Polo Fields was dotted with a small circular feature, possibly small ponds. Two medium buildings and eight small buildings were noted along the southwest margin of the fields. No other pertinent changes were noted to the subject property since the previous photograph.

TABLE 1 (continued)
Summary of Aerial Photograph Review

Year	Photo ID	Comments
1999	C-136-43-150/151[1]	The western portion of the property was occupied by lemon groves, in its current configuration. The former Les Thompson lease area was occupied by a large barn and was also being used to park large trucks. Former Joan Irvine-Smith Pasture area was covered in grass and approximately 30 small structures (possibly water tanks for cattle). The area north of the pasture was vacant open space. D&M Nursery was present on both sides of Antonio Parkway, north of Ortega Highway. The Miramar Nursery lease property was cleared and sectioned, however, there did not appear to be any cultivated plants on the property. Sierra Soil was present in its current location, south of the polo fields. The Oaks Polo Fields lease area was present in its current configuration of corrals and fields, however there were no stables. No other pertinent changes were noted to the subject property since the previous photograph.
2002	EDAW - Ortega Gateway[2]	Several rows of horse stables were noted along the northwest margin of the Oaks Polo Fields area, along San Juan Creek. Truck and trailers were noted on the former Les Thompson lease area. No other pertinent changes were noted to the subject property since the previous photograph.

[1] Aerial Photograph viewed at Continental Aerial Photographs, Los Alamitos, California
[2] Aerial Photograph obtained from EDAW

4.2.2 Historic Maps

EEI reviewed topographic maps dating from 1942 to1988 at the University of California at Santa Barbara, Map and Imagery Laboratory. All of the maps reviewed were published by the United States Geological Survey, with the exception of the 1942 map, which was published by the U.S. Army Corp of Engineers. Only partial coverage of the site was available on the 1948, 1968, 1975, and 1980 maps (the western portion is not covered).

The 1942 map notes the presence of two small structures located along the ranch access road near the headquarters area, a small structure located south of San Juan Creek in the D&M Nursery area, and four small structures in the current Oaks Corrals area. Ortega Highway is present traversing the subject property, along with San Juan Creek Haul Road and a dirt road south of former Joan Irvine-Smith pasture. No other pertinent items were noted.

No changes were noted on the 1948 map.

The 1968 map notes the presence of a well in the former Joan Irvine-Smith Pasture. No other pertinent changes were noted.

No changes were noted on the 1975 map.

The 1980 map notes the presence of La Pata Avenue. No other pertinent changes were noted.

The 1988 map notes the presence of orchards in the headquarters area, in the D&M Nursery and Miramar Nursery areas, and in the current lemon groves south of Ortega Highway. The map notes the presence of a small structure in the former Joan Irvine-Smith Pasture area, and a structure in the former Les Thompson area. An irregular surface feature is noted on the D&M property west of Antonio Parkway.

4.2.3 City/County Directories

EEI reviewed available Criss Cross and Haines City/County Directories for Orange County at the Main Library in Santa Ana, California. Within the subject property there are at least 12 addresses along Ortega Highway: 28632, 28650, 28651, 28652, 28653, 28672, 28691, 28731, 28811, 28813, 28881, 29001, and 29813. Most of the addresses associated with the subject property were either not listed in the directories reviewed by EEI, or were residential listings. **Table 2** summarizes the information reviewed in the directories for the non-residential addresses.

TABLE 2
Summary of Historical Tenants

Year	Subject Property Addresses - Ortega Highway				
	28650	**28672**	**28811**	**28881**	**29001**
1952	Rancho Mission Viejo (No Street Address)				
1972	No Listing	Rancho Mission Viejo	No Listing	Rancho Mission Viejo La Casa	No Listing
1976	Horst Horse Ranch	Rancho Mission Viejo	No Listing	Rancho Mission Viejo La Casa	No Listing
1980	Capistrano Saddle Club	Rancho Mission Viejo	Bayshore Construction	Rancho Mission Viejo La Casa	No Listing
1985	Capistrano Riding Club	Delane Kendall	Rancho Mission Viejo	Rancho La Casa	D&M Nurseries
1990	The Oaks	No Listing	Rancho Mission Viejo	Rancho Mission Viejo	D&M Nurseries
1996	The Oaks	No Listing	Rancho Mission Viejo	Rancho Mission Viejo	D&M Nurseries
2002	The Oaks	No Listing	Rancho Mission Viejo Headquarters Cow Camp, Rancho Mission Viejo	Rancho Mission Viejo	D&M Nurseries Inc.

4.2.4 Sanborn Maps

EEI researched available Sanborn Fire Insurance Maps of the subject site. Sanborn Maps provide detailed information on site structures, uses, and occupancies and were typically utilized by insurance companies to evaluate potential fire risk. Based on EEI's review, no Sanborn Fire Insurance Maps are available for the area surrounding the subject site, indicating little commercial development prior to 1950.

4.2.5 Orange County Building and Safety Department Files

EEI reviewed files at the Orange County Building and Safety Department (OCBSD) regarding historical and present site development. The OCBSD does not issue permits to sites without addresses. Permits were on file for the properties at 28652, 28672, 28691, and 28811 Ortega Highway. The remainder of the subject property addresses did not have files at the OCBSD available for review. The following is a summary of the files reviewed.

28652 Ortega Highway

In December 1965, two building permits were issued at 28652 Ortega Highway to the property owner, Rancho Mission Viejo. One permit was for a two bedroom, one bath addition of approximately 485 square feet, and the second was for the relocation of employee's quarters (dimensions not provided). In April 1966, a building permit was issued to the property owner to add a tool supply room to the same address. No other pertinent items were noted in the files reviewed by EEI.

28672 Ortega Highway

In July 1966, two building permits were issued to the property owner, Rancho Mission Viejo, for the property at 28672 Ortega Highway. One permit was issued to relocate the ranch office, and the second was for an addition of one office to an existing office structure. In November 1974 a permit for three wind machines was issued for the agricultural fields. No other pertinent items were noted in the files reviewed by EEI.

28691 Ortega Highway

In June 1965 a permit was issued to the property owner, Rancho Mission Viejo, for the construction of a dwelling with attached garage to the property at 28691 Ortega Highway. In August 1979, a permit was issued for the construction of a recreational building, accessory to the existing ranch facility. No other pertinent items were noted in the files reviewed by EEI.

28811 Ortega Highway

In August 1979, a grading permit was issued for the property at 28811 Ortega Highway to the property owner, Rancho Mission Viejo. No other detail were provided. In April 1987, a grading permit was issued to the property owner for grading for an accessory building. In November 1991, a permit was issued to the Santa Margarita Company for grading for a lemon orchard. No other pertinent items were noted in the files reviewed by EEI.

4.3 Regulatory Database Search

EEI reviewed known electronic database listings for possible hazardous waste generating establishments in the vicinity of the site, as well as on sites in the area with known environmental concerns. Facilities were identified by county, state, or federal agencies and either generate, store, or dispose of hazardous materials. The majority of information in this section was obtained from FirstSearch®, an environmental information/database retrieval service. A copy of the FirstSearch® report is provided in **Appendix C**, along with a description of the individual databases. The subject property was not listed in any of the databases reviewed as having environmental concerns. For discussion purposes, the term "non-geocoded" is applied to sites that either have non-existent or incomplete addresses. EEI has attempted to locate these sites, based on the location description provided in the records search. Below is a list of databases that were reviewed in the preparation of this report.

4.3.1 Federal Databases

National Priority List (NPL) - No listings were reported within one mile of the subject site.

Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) - No listings were reported within one-half mile of the subject site.

RCRA TSD Facility List (RCRA-D) - No listings were reported within one-half mile of the subject site.

RCRA COR (Corrective Action Sites) - No listings were reported within one mile of the subject site.

RCRA Generators (RCRA-G) - The Environmental Protection Agency (EPA) regulates generators of hazardous material through the Resource Conservation and Recovery Act (RCRA). All hazardous waste generators are required to notify EPA of their existence by submitting the Federal Notification of Regulated Waste Activity Form (EPA Form 8700-12) or a state equivalent form. Four sites within one-quarter mile were identified, including three non-geocoded sites which are actually located greater than one mile from the subject property. **California Silica Products** (31302 Ortega Highway) was identified as a small generator (i.e., generates between 100-1,000 kilograms of hazardous waste per month. Operating permits are not generally considered environmental concerns, unless an unauthorized release has occurred at the site. This site is discussed further in the LUST section below.

RCRA NLR (No Longer Regulated) - No listings were reported within one-eighth of a mile from the subject property.

Emergency Response Notification System (ERNS) - The ERNS is a national computer database used to store information on unauthorized releases of oil and hazardous substances. Twelve listings were reported within one-eighth of a mile from the subject property, including eleven listings that were non-geocoded and are actually located greater than one mile from the subject property. An **unknown** ERNS was reported at Ortega Highway and La Pata Avenue. No details were provided about the nature of the emergency. Based on a lack of information, this site is not considered an environmental concern at this time.

The subject property was not identified on any of the databases researched.

4.3.2 State and Regional Sources

State Listings - One non-geocoded site was identified within one mile of the subject site, however, this site is actually located in San Clemente, and is greater than one mile from the subject property. Therefore, this site is not considered an environmental concern at this time.

Spills 1990 - No listings were reported within one-eighth of a mile from the subject property.

Solid Waste Landfill (SWL) Sites - Nine listings were reported within one half mile of the subject site, including seven non-geocoded sites that are actually located greater than one mile from the subject property. **Solag Disposal** (31641 Ortega Highway) and **Unknown** (31511 Ortega Highway) are located greater than one mile east of the subject property. Therefore, these sites are not considered environmental concerns at this time.

Permits - No listings were identified within one-eighth of a mile from the subject property.

Permitted Underground Storage Tanks (UST) - Fifteen listings were reported within one-quarter mile of the subject site. Four sites were non-geocoded and are actually located greater than one mile from the subject property. Two sites are located within the subject property: **Capistrano Wholesale Nursery** (29812 Ortega Highway), listed as inactive; and **Rancho Mission Viejo** (28672 Ortega Highway), listed as active. No details regarding the tanks were provided. Operating permits are not generally rationale for concern, unless a documented release has occurred at the site. A documented release has occurred on the subject property, and this is discussed further in the LUST section below.

Orange County Groundwater Clean-up List (Other) - Five sites were identified within one quarter of mile of the subject property. One listing identified a site within the subject property, **Rancho Mission Viejo** (28675 Ortega Highway), which is listed for a gasoline release. No other details were provided. Of the remaining listings, one site was non-geocoded and is actually located greater than one mile from the subject property. The other three sites are actually one site, **California Silica Products/Oglebay Norton Industrial Sand, Inc.** (31302 Ortega Highway), which is listed for a gasoline release, and two diesel releases. This site is discussed further in the LUST section.

California State Leaking Underground Storage Tanks (LUST) - Five listings were reported within one-half mile of the subject site, including one site within the subject property. **Rancho Mission Viejo** (28672 Ortega Highway) reported a gasoline leak in April 1992. Impacted soil was excavated and disposed of at an approved site. Reportedly, only the soil is impacted, and the case was closed in May 2001. The case is discussed further in section 4.6.8. One listed site was non-geocoded and is actually located greater than one mile from the subject property. The remaining three are all listings for **California Silica Products Company/Oglebay Norton Industrial Sands, Inc.** (31302 Ortega Highway). A diesel release was reported in October 1990, impacting the soil only, and the case was closed in June 1991. A gasoline release was reported in April 1993, impacting the soil only, and the case was closed in March 1993. Finally, a diesel release was discovered during a tank test in August 1997, impacting the soil only. The case was closed in April 2001. Based on the status of these listings (closed) and the extent of the contamination (soil only), these are not considered as environmental concerns at this time.

Releases (Air/Water) - Two sites were listed within one-quarter mile of the subject property. Both listings were non-geocoded. The sites are listed as occurring on Oso Parkway which is located greater than one mile north of the subject property. Therefore, these sites are not considered environmental concerns at this time.

PCB Activity Database System (PADS) - No sites were listed within one quarter mile of the subject property.

Rancho Mission Viejo (28672 Ortega Highway) is a site within the subject property, and was listed on the UST and LUST databases. The case is closed, and is discussed further in section 4.6.2.

4.4 Regulatory Agency Review

4.4.1 Orange County Fire Authority

EEI contacted the Orange County Fire Authority (OCFA) office for information regarding hazardous materials storage at the subject site. According to previous assessments of the subject property and recent inquiries to the OCFA, most sites within the subject property do not have an official address or hazardous materials permit file, and are not currently under a regular inspection schedule. The sites currently under routine inspection by OCFA include **The Oaks** (28650 Ortega Highway), **D&M Nursery**, and **Rancho Mission Viejo** (28672 Ortega Highway and 28811 Ortega Highway). These sites are permitted to store chemicals such as gasoline, diesel, motor oil, propane, Malathion, urea, sodium nitrate, ammonium sulfate, potassium sulfate, calcium chloride, methyl phenol, ammonium nitrate, metaldehyde, and various small quantities of insecticides, fertilizers, herbicides, and compressed gas. There were no indications of violations, hazardous materials spills, or emergency responses in Fire Department files. Copies of the OCFA records search for the Rancho Mission Viejo addresses (28672 and 28811 Ortega Highway) are included as **Appendix D**.

4.4.2 Orange County Health Care Agency

EEI reviewed Orange County Health Care Agency databases including the Leaking Underground Storage Tank (LUST) list, Underground Tank Facilities (UTF) list, Non-petroleum Underground Tanks (UT) list, Hazardous Waste Generators (HWG), and Land Fill Sites, to determine if the subject site or any properties within the site vicinity were listed as having an environmental concern. Two sites within the subject property were listed. **Vermullen Agricultural Field** at Ortega Highway and La Pata Avenue was listed on the Non-Petroleum UT List. This is not considered an environmental concern at this time. **Rancho Mission Viejo** at 28675 Ortega Highway was listed on the LUST list. The site was given closure on May 9, 2002.

4.4.3 California Regional Water Quality Control Board

EEI reviewed the Underground Storage Tank Information System (LUSTIS) and Spills, Leaks, Investigations, and Cleanup (SLIC) List, published by the California Regional Water Quality Control Board - San Diego Region (SDRWQCB), to determine whether the site or any nearby property was listed as having a leaking underground tank, spill, leak, or aboveground tank problem. There were no listings for the subject site.

4.4.4 Review of Division of Oil, Gas and Geothermal Resources Files

EEI reviewed information regarding oil production near the site provided by the California Division of Oil, Gas, and Geothermal Resources. Based on file data, no petroleum exploration or production has occurred on or adjacent to the site.

4.5 Interview with Site Personnel

In May 2001, EEI contacted Fred Vorhees, Ranch Manager for Rancho Mission Viejo (property owner), who was interviewed regarding key site information for the **Oaks Polo Fields**. Mr. Vorhees indicated that he has been working at the Ranch for approximately 30 years and is familiar with the subject property. Mr. Vorhees noted that the property had been used for agricultural purposes in the past, and that pesticides may have been used. No other items of concern were noted during the interview (EEI, 2001a).

In June 2001, EEI contacted Mr. Vorhees, and interviewed him regarding key site information for **D&M Color Express Nursery**. Mr. Vorhees stated that the property had been used for agricultural purposes in the past, and that pesticides may have been used. He also stated that a small underground gasoline tank was removed in 1984 from along the dividing line between D&M and Miramar Nursery. He noted that no contamination was apparent at the time of the removal (EEI, 2001b).

In June 2001, EEI contacted Mr. Vorhees, and interviewed him regarding key site information for **Miramar Nursery**. Mr. Vorhees stated that the property had been used for agricultural purposes in the past, and that pesticides may have been used. He also stated that a small underground gasoline tank was removed in 1984 from along the dividing line between D&M and Miramar Nursery. He noted that no contamination was apparent at the time of the removal (EEI, 2001c).

In November 2001, EEI interviewed Mr. Vorhees regarding key site information for **Cellular On Wheels (C.O.W.) Site near Miramar Nursery**. No items of environmental concern were noted during the interview (EEI, 2001d).

In December 2001, EEI contacted Mr. Vorhees, and interviewed him regarding key site information for the **Former Les Thompson Lease** property. Mr. Vorhees stated that the property had historically been used for agricultural purposes, and that a petroleum pipeline once ran across the entrance to the site. No other items of environmental concern were noted during the interview (EEI, 2001e).

In January 2002, EEI contacted Mr. Vorhees, and interviewed him regarding key site information for the **Joan Irvine-Smith Pasture**. Mr. Vorhees stated that the property had been historically used for agricultural purposes. He also stated that an above-ground diesel tank was located on the property. No other items of concern were noted during th interview (EEI, 2002a).

In July 2002, EEI contacted Mr. Vorhees, and interviewed him regarding key site information for the **Oaks Corrals**. Mr. Vorhees stated that the property had historically been used for agricultural purposes, and that an above-ground diesel tank was located on the site. No other items of environmental concern were noted during the interview (EEI, 2002b).

In April 2003, EEI contacted Mr. Vorhees and interviewed him regarding key site information for the remainder of the subject property, including the open space in the northern area, the maintenance shop area at 28672 Ortega Highway, the orchards, and any other areas within the subject property that had not been previously covered. A list of the questions asked, and a summary of their responses, are included below.

Q: Is the property or any adjoining property used for an industrial or agricultural use?

A: Yes, parts of the property are used to farm lemon groves.

Q: To the best of your knowledge, was the property or any adjoining property used for industrial or agricultural purposes in the past?

A: Yes, the land has been farmed for a number of years.

Q: Are you aware of any current or previous uses of the site or adjoining properties which may create an environmental concern?

A: No, with the exception of the maintenance area along Ortega Highway. Years ago we used to dump oil off the corner of the shop building.

Q: To the best of your knowledge has the property or any adjoining property ever been used as a gasoline station, motor repair facility, commercial printing facility, dry cleaners, photo developing laboratory, junkyard or landfill, or as a waste treatment, storage, disposal, processing or recycling facility?

A: Yes. The maintenance area along Ortega Highway.

Q: Are there currently, or to the best of your knowledge have there been previously, any damaged or discarded automotive or industrial batteries, or pesticides, paints or other chemicals in individual containers of greater than 5 gal (19 L) in volume or 50 gal (190 L) in the aggregate, stored on or used at the property or at the facility?

A: No

Q: Are there currently, or to the best of your knowledge have there been previously, any industrial drums (typically 55 gal) or sacks of chemicals located on the property or at the facility?

A: Yes. There are some 55-gallon drums at the maintenance shop.

Q: Has fill dirt been brought onto the property that may have originated from a contaminated site or that is of an unknown origin?

A: Some fill dirt was brought in for one of the lemon groves (i.e., C Field), but it wasn't contaminated.

Q: Are there currently, or to the best of your knowledge have there been previously, any pits, ponds, or lagoons located on the property in connection with waste treatment or waste disposal?

A: No.

Q: *Is there currently, or to the best of your knowledge has there been previously, any stained soil on the property?*

A: At the maintenance shop.

Q: Are there currently, or to the best of your knowledge have there been previously, any registered or unregistered storage tanks (above or underground) located on the property, aside from the underground gasoline tank that was removed?

A: No.

Q: Are there currently, or to the best of your knowledge have there been previously, any vent pipes, fill pipes, or access ways indicating a fill pipe protruding from the ground on the property or adjacent to any structure located on the property?

A: No.

Q: Are there currently, or to the best of your knowledge have there been previously, any flooring, drains, or walls located within the facility that are stained by substances other than water or are emitting foul odors?

A: No.

Q: If the property is served by a private well or non-public water system, have contaminants been identified in the well or system that exceed guidelines applicable to the water system or has the well been designated as contaminated by any government environmental/health agency?

A: No.

Q: Does the owner or occupant of the property have any knowledge of environmental liens or governmental notification relating to past or recurrent violations of environmental laws with respect to the property or any facility located on the property?

A: No.

Q: Has the owner or occupant of the property been informed of the past or current existence of hazardous substances or petroleum products or environmental violations with respect to the property or any facility located on the property?

A: No.

Q: Does the owner or occupant of the property have any knowledge of any environmental site assessment reports prepared for the property or facility that indicated the presence of hazardous substances or petroleum products on, or contamination of, the property or recommended further assessment of the property?

A: No.

Q: Does the owner or occupant of the property know of any past, threatened, or pending lawsuits or administrative proceedings concerning a release or threatened release of any hazardous substance or petroleum products involving the property by any owner or occupant of the property?

A: No.

Q: Does the property discharge waste water on or adjacent to the property other than storm water into a sanitary sewer system?

A: No.

Q: To the best of your knowledge, have any hazardous substances or petroleum products, unidentified waste materials, tires, automotive or industrial batteries or any other waste materials been dumped above grade, buried and/or burned on the property?

A: Yes, waste oil was dumped in the maintenance area.

Q: Is there a transformer, capacitor, or any hydraulic equipment for which there are any records indicating the presence of PCBs?

A: No.

4.6 Previous Assessments

4.6.1 Phase I Environmental Site Assessment - Antonio Parkway Alignment

EEI reviewed a previous environmental site assessment (ESA) performed for the County of Orange as part of the Environmental Impact Report for the Antonio Parkway Roadway Alignment and Land Use Plan. This document was prepared by Michael Brandman Associates in May 1995 and is entitled *Appendix H - Hazardous Materials Environmental Site Assessment*. The ESA included a visual field reconnaissance from public streets and private interior roads, a review of historical aerial photographs and maps, and a review of federal, state and local regulatory databases.

The ESA noted no obvious hazardous materials contamination during a limited visual survey. The existence of USTs, hazardous substances, and agricultural pesticide/herbicide use were noted on properties near, but not adjacent to, the Antonio Parkway Corridor. However, these sites are located well over a mile from the subject property and were not considered environmental concerns.

The ESA identified two underground jet fuel pipelines (16-inch and 10-inch), owned by the Santa Fe Oil Pipeline Company, neither of which is listed on federal, state, or local hazardous materials contamination site databases. The 16-inch pipeline is apparently active, and runs along the western margin of the subject property, mainly following under the San Diego Gas & Electric 220 kV transmission lines. The 10-inch line has apparently been removed, and was located under the subject property, through the central portion underlying the former Joan Irvine-Smith Pasture and the Oaks Polo Fields.

4.6.2 Rancho Mission Viejo Field Office (28672 Ortega Highway) LUST Case

According to documents reviewed regarding the Rancho Mission Viejo Field Office (28672 Ortega Highway) LUST case, two 12,000-gallon UST's were removed from the site (one in 1992 and one in 1998). Soil contamination was documented during the removal of both tanks.

In September 1998, EEI collected three samples from the stockpiled soil generated during the tank removal of the second UST (EEI, 1998). The samples were analyzed for TPH-Gasoline (TPH-G), BTEX, MTBE, and Total Lead. No detectable concentrations of TPH-G, BTEX, or MTBE were reported. Total Lead concentration was reported in one sample at 3.6 milligrams per kilogram, which is below regulatory action levels. The soil was placed back into the tank pit excavation. In October 1998, EEI collected one soil sample from beneath the dispenser location, which was analyzed for TPH, BTEX, and MTBE. No detectable concentrations of contaminants were reported.

Groundwater at the site was monitored to determine if residual soil contamination related to the first UST (removed in 1992) was impacting the groundwater. In August 1999, groundwater conditions beneath the site reflected unconfined conditions. The depth to first water ranged from 13.30 to 16.46 feet bgs. Groundwater gradient was calculated to be approximately 0.027 ft/foot to the southeast. Laboratory analysis results of groundwater samples indicated that detectable concentrations of TPHg were only found in PMW-3 (1,500 micrograms per liter (ug/l)). Benzene was reported in wells PMW-1 and PMW-3, in concentrations of 1.6 ug/l and 190 ug/l, respectively. MTBE was also reported in wells PMW-1

and PMW-3, in concentrations of 21 ug/l (22 by EPA 8260) and 190 ug/l (160 ug/l by EPA 8260), respectively.

In 2000, EEI submitted a letter to the Orange County Health Care Agency requesting closure of the site (EEI, 2000). The basis for closure addressed the following concerns: the threat to San Juan Creek from the saturated soil, the potential for explosive hazards related to residual contamination, the extent of residual soil contamination, and the concentration versus time and concentration versus distance for the contaminants. According to the letter, there was insufficient data to connect the saturated soil at the site hydraulically to San Juan Creek, and therefore, the threat to the creek was deemed minimal. No evidence of subsurface utilities was found in the contaminant plume, thereby ruling out the possibility of an explosion hazard. The extent of residual contamination was estimated at approximately 192 cubic yards, and the plume appeared relatively stabile, and was contained on site. The graphs showed that, with minor fluctuations, average TPH, BTEX, and MTBE concentrations were decreasing over time. The site was closed in May 2001.

4.6.3 Phase I Environmental Site Assessment - The Oaks Polo Field/Creekside Pasture

In May 2001, EEI completed a Phase I environmental site assessment of the property occupied by Oaks Polo Fields and Creekside Pasture, located at the southwest corner of La Pata Avenue and Ortega Highway, in the southeastern portion of the subject property (EEI, 2001a). The site has been occupies by the polo fields since the late 1990's, and previously had been used for agricultural purposes. The property was described as a large, multi-functional facility that is host to polo, soccer, car show, and rodeo events. Also included in the assessment report was southern portion of the property, occupied by Sierra Soils, a small soil compost processing facility that mixes landscaping materials for commercial use.

The site was not listed on any regulatory database as having an environmental concern or operating permit. No evidence of environmental concern was observed at the property during the time of the assessment. However, historical research indicated the use of pesticides use, and EEI recommended a Phase II investigation in accordance with DTSC's Interim Guidance for Sampling Agricultural Soils.

4.6.4 Phase I Environmental Site Assessment - D&M Color Express Nursery

In June 2001, EEI completed a Phase I environmental site assessment of the property occupied by D&M Color Express Nursery, located in the eastern portion of the property, north of Ortega Highway and on both the western and eastern sides of Antonio Parkway (EEI, 2001b). According to the report, the site was occupied by a commercial nursery with numerous small to medium-sized structures (i.e., office, maintenance building, greenhouses, sheds, trailers), a source pond, and a water filtration/blending station. The property has been occupied by the nursery since the mid 1980's, and was occupied by orchards since at least 1970. Prior to 1970, the property was vacant.

The site was identified as a hazardous waste generator, and the most recent inspection report reviewed (2000) did not note any violations. The site was permitted under the Orange County Fire Department to store gasoline, diesel, motor oil, propane, malathion, urea, sodium nitrate, ammonium sulfate, potassium sulfate, calcium chloride, methyl phenol, ammonium nitrate, metaldehyde, and various small quantities of insecticides, fertilizers, herbicides, and compressed gas.

No violations or issues of concern were noted during the site reconnaissance. Historical research of the site revealed the use of pesticides on the property, and the former presence of an underground gasoline storage tank (UST) located beneath a wind machine (removed in 1984).

EEI recommended a Phase II investigation in accordance with DTSC's Interim Guidance for Sampling Agricultural Soils, and the monitoring of any future excavations in the area of the former UST. EEI conducted a limited soil investigation at the location of the former UST, and a discussion of the sample results is included below in section 4.6.6.

4.6.5 Phase I Environmental Site Assessment - Miramar Nursery

In June 2001, EEI completed a Phase I environmental site assessment of the property occupied by Miramar Nursery, located in the eastern portion of the subject property, at the southeast corner of La Pata Avenue and Ortega Highway (EEI, 2001c). According to the report, the site was occupied by a commercial nursery with numerous small to medium-sized structures (i.e., office, storage building, greenhouses, shade houses, sheds, and trailers). The site has been occupied by the nursery since the early 1990's, and previously had been used for agricultural purposes.

The site was not listed on any regulatory database as having an environmental concern or operating permit. Minor spillage of dry agricultural chemicals was noted in the shop area, and minor surficial petroleum staining was noted in unpaved areas of the shop. No other violations or items of concern were noted during the site visit. Historical research of the site revealed the use of pesticides on the property, and the former presence of an underground gasoline storage tank (UST) located beneath a wind machine (removed in 1984).

EEI recommended a Phase II investigation in accordance with DTSC's Interim Guidance for Sampling Agricultural Soils, and the monitoring of any future excavations in the area of the former UST. EEI conducted a limited soil investigation at the location of the former UST, and a discussion of the sample results is included below in section 4.6.6

4.6.6 Limited Soil Investigation at Miramar Nursery

In November 2001, EEI conducted a limited soil investigation at Miramar Nursery per the recommendations of the Phase I ESA performed for the site and for D&M Color Express in June 2001 (EEI, 2001e). The purpose of the sampling was to evaluate the current condition of soil around a former Underground Storage Tank (UST), and to determine if there were any petroleum hydrocarbons present in the soil which could have presented a potential hazard to human health or the environment.

One trench was excavated in the area of the former tank. Three soil samples were collected and analyzed for Total Petroleum Hydrocarbons (TPH), Volatile Organic Compounds (VOC's), and Total Lead. No detectable concentrations of TPH were detected in any samples analyzed. Detectable concentrations of VOC's in the form of lead were reported in all three samples, ranging from 7.5 mg/kg to 12 mg/kg. These concentrations are background levels associated with natural occurring metals in soil and are not considered human or environmental hazards. No further investigation of the site was recommended.

4.6.7 Phase I Environmental Site Assessment - (C.O.W.) Site at Miramar Nursery

In November 2001, EEI completed a Phase I ESA of the Cellular on Wheels (C.O.W.) Site, located near Miramar Nursery (EEI, 2001d). The site was described as currently being used for storage of potted plant stock. Historic property use was agricultural.

The site was not listed on any regulatory database as having an environmental concern or operating permit. No evidence of environmental concern was noted during the site visit. EEI did not recommend any further action at the site.

4.6.8 Phase I Environmental Site Assessment - Les Thompson Transportation Lease

In December 2001, EEI completed a Phase I environmental site assessment of the property occupied by Les Thompson Transportation, north of the ranch headquarters along the ranch access road (EEI, 2001f). According to the report, the site was occupied by a transportation business, which included truck and trailer storage areas and a large wooden shed. The site was occupied by Les Thompson from the late 1990's to 2002, and previously had been used for storage.

The site was not listed on any regulatory database as having an environmental concern or operating permit. However, during the site reconnaissance, hazardous substances such as new and used oil, diesel, solvent, compressed gases, paint, welding materials, truck tires, and vehicle batteries were noted. In addition, several small surface spills of oil were noted on soils in this area, and many of the chemical containers were stored on bare ground.

EEI recommended that the vehicle maintenance at the facility be halted until proper use, handling, storage, and labeling of hazardous materials, waste, and petroleum products is implemented. EEI also recommended that oil-impacted soil be excavated and removed from the site, and that any further use of the facility as a vehicle storage and maintenance are occur only after paving those portions of the property intended for that purpose.

4.6.9 Limited Soil Investigation at Les Thompson Transportation Lease

In November 2002, EEI conducted a limited soil investigation (EEI, 2002c) at the Les Thompson Transportation lease property per the recommendations of the Phase I ESA performed for the site in December 2001. EEI excavated two shallow trenches in the former vehicle storage and maintenance areas of the site to a total depth of approximately 2 feet below ground surface.

Six soil samples were collected and analyzed for TPH-Diesel (TPH-D), TPH-Motor Oil (TPH-MO), VOC's, and Total Lead. No detectable concentrations of VOC's were reported in the samples. Reported concentrations of TPH-D ranged from 13 to 81 mg/kg, and TPH-MO concentrations ranged from 27 to 180 mg/kg. Reported concentrations of Total Lead ranged from 4.5 to 8.5 mg/kg. The reported levels were well below regulatory action levels, and no further action was recommended.

4.6.10 Phase I Environmental Site Assessment - Joan Irvine-Smith Pasture

In January 2002, EEI completed a Phase I environmental site assessment of the property occupied by the former Joan Irvine-Smith Pasture, northeast of the ranch headquarters, along the ranch access road (EEI, 2002a). The majority of the site was vacant at the time of the report, however, a small shed, a booster pump, and an above-ground diesel storage tank (AGT) were located at the southwest corner of the property. The site has been utilized for grazing purposes since at least the 1950's.

The site was not listed on any regulatory database as having an environmental concern or operating permit. During the site reconnaissance, a small gallon-sized container of diesel fuel was noted at the foot of the AGT, and some liquid was noted in the AGT. A pole-mounted transformer and two water wells were also noted on the property. No evidence of contamination was noted during the site visit. EEI recommended that the AGT containing diesel should be emptied and removed from the property.

4.6.11 Phase I Environmental Site Assessment - The Oaks Corrals

In July 2002, EEI completed a Phase I environmental site assessment for the property occupied by The Oaks Corral, along Ortega Highway in the southern portion of the subject property (EEI, 2002b). According to the report, the site was occupied by horse corrals and two electrical towers at the southern end. The corrals have been present since the 1980's, and previously had been vacant. In addition, the Petroleum Pipeline traverses through the center of the property from Ortega Highway and south towards San Juan Creek.
The site was not listed on any regulatory database as having an environmental concern or operating permit. During the site reconnaissance, a 500-gallon above-ground diesel tank was noted along the southern margin of the property. No evidence of environmental concern was noted during the site visit, and EEI did not make any recommendations.

4.7 Other Environmental Issues

4.7.1 Asbestos Containing Materials

Asbestos is a natural mineral fiber used in the manufacture of a number of different building materials. Asbestos has also been identified as a human carcinogen. Most friable (i.e., those that are easily broken or crushed) asbestos-containing materials (ACM) were banned in building materials by 1978. By 1989, most major manufacturers had voluntarily removed non-friable ACM (i.e., flooring, roofing, and mastics/sealants) from the market. However, these materials were not banned completely.

In October 1995, the Federal Occupational Safety and Health Administration (OSHA) redefined the manner by which building materials are classified in regards to asbestos and the also the way these materials are to be handled. Under this ruling, “thermal system insulation and sprayed-on or troweled on or otherwise applied surfacing materials” applied before 1980 are considered presumed asbestos containing materials (PACM). Other building materials such as “ floor or ceiling tiles, siding, roofing, transite panels” (i.e., non-friable) are also considered PACM unless tested.

There a several permanent structures located within the subject property that were constructed prior to the 1950s. Therefore, ACM’s are likely to be present.

4.7.2 Lead-Based Paint

Lead-based paint is identified by OSHA , the Environmental Protection Agency (EPA) and the Department Housing and Urban Development Department (HUD) as being a potential health risk to humans, particularly children, based upon its effects to the central nervous system, kidneys, and bloodstream. The risk of lead-based paint has been classified by HUD based upon the age and condition of the painted surface. This classification includes the following:

- maximum risk is from paint applied before 1950
- a severe risk is present from paint applied before 1960
- a moderate risk is present from paint applied before 1970
- a slight risk is present from paint applied before 1977
- paint applied after 1977 is not expected to contain lead.

There a several permanent structures located within the subject property that were constructed prior to the 1950s. Therefore, lead-based paint is likely to be present.

4.7.3 Radon

Radon is a radioactive gas which has been identified as a human carcinogen. Radon gas is typically associated with fine-grained rock and soil, and results from the radioactive decay of radium. EPA recommends that homeowners in areas with radon screening levels greater than 4 pCi/L (picocurries per liter) conduct mitigation of radon gas to reduce exposure.

Sections 307 and 309 of the Indoor Radon Abatement Act of 1988 (IRAA) directed EPA to list and identify areas of the U.S. with the potential for elevated indoor radon levels. EPA's Map of Radon Zones (EPA-402-R-93-071) assigns each of the 3,141 counties in the U.S. to one of three zones based on radon potential:

- Zone 1 counties have a predicted average indoor radon screening level greater than 4 pCi/L.
- Zone 2 counties have a predicted average indoor radon screening level between 2 and 4 pCi/L.
- Zone 3 counties have a predicted average indoor radon screening level less than 2 pCi/L.

Based on such factors as indoor radon measurements; geology; aerial radioactivity; soil permeability; and foundation types, EPA has identified Orange County as Zone 3 (i.e., low potential for radon gas). Therefore, EEI does not consider radon as a concern at this time.

5.0 SITE RECONNAISSANCE

5.1 Purpose

The purpose of the site reconnaissance was to visually and physically observe the site, site structures, and adjoining properties for conditions indicating an existing release, past release, or threatened release of any hazardous substances or petroleum products into structures of the site, or into soil and/or groundwater beneath the site. This would include any evidence of contamination, distressed vegetation, petroleum-hydrocarbon staining, waste drums, illegal dumping, or improper waste storage/handling.

5.2 Results of Site Reconnaissance

5.2.1 Subject Site

EEI conducted a walking reconnaissance of the portions of the subject property occupied by the Oaks Polo Fields and Sierra Soils; D&M Nursery; Miramar Nursery; the former Les Thompson lease; the former Joan Irvine-Smith Pasture; the Miramar C.O.W. site, and the Oaks Corrals during previous environmental site assessment investigations from May 2001 through July 2002. The information collected during those site reconnaissances are included within the individual reports, and a brief summary is included above in section 4.6.

On March 31, 2003, EEI personnel conducted a reconnaissance of the entire site. Photographs 1 through 24 (**Appendix E**) document the site reconnaissance, which is summarized in **Table 3**. EEI personnel conducted a driving inspection around the perimeter of the subject property, then traversed the site from east to west and north to south. The site is located along Ortega Highway, just east of the City of San Juan Capistrano. The majority of the site is located north of Ortega Highway and west of Antonio Parkway, however, approximately 100 acres is located south of Ortega Highway, and approximately 100 acres is located east of Antonio Parkway. Access to the site is through Ortega Highway.

The western portion of the property is predominately developed as lemon groves, with some areas of vacant (undisturbed) open space. Within the lemon grove area, three unlabeled above-ground tanks (AGT's) were noted. A shed (approximately 200 square feet in dimension) located in the southern area of the lemon groves was noted to contain a few empty 5-gallon buckets, an empty 55-gallon drum, an empty 30-gallon drum, and two locked storage containers. The central portion of the shed was locked, and a warning label regarding the storage of pesticides was attached to the door. A pile of broken concrete was located south of the shed, and miscellaneous debris (chairs, wood, and a barbeque) were located along the eastern and northern sides of the shed. Stained soil was noted north and west of the shed.

The northern portion of the subject property is mostly undisturbed open space, including approximately fifteen acres east of Antonio Parkway. The former Joan Irvine-Smith Pasture is currently occupied by a ploughed field, a small shed, and an AGT, all of which are discussed in detail in the Phase I ESA (EEI, 2002a). The former Les Thompson lease area is occupied by a large barn-like structure and approximately 10 small trailers.

The central portion of the subject property is occupied by the Rancho Mission Viejo headquarters office, a recreational and conference facility, a pool, a helipad, lemon groves, several small parking lots, a residence, and a small shed. The eastern portion of the property is occupied by nurseries, D&M Color Express (EEI, 2001b) and Miramar (EEI, 2001c).

The southern portion of the property (south of Ortega Highway) is occupied by lemon groves, a maintenance yard with three structures, three residences, The Oaks horse corral (EEI, 2002b), and The Oaks Polo Fields (EEI, 2001a) which are comprised of horse stables, polo fields, several small parking areas, and a soils company (Sierra Soils). Pole-mounted transformers were noted adjacent to the lemon groves. Two 55-gallon drums labeled "non-regulated waste," two empty 55-gallon drums, one 55-gallon drum containing oily water, and two 55-gallon drums with pooled oil on top were noted in the vehicle maintenance area, along with stained concrete, stained soil, and a waste oil pan containing oil. Tires, scrap metal, wood piles, a sand pile, and many broken-down and/or abandoned automobiles with dripping oil were also noted in this area.

Based on the results of the site reconnaissance, evidence of contamination, petroleum-hydrocarbon staining, waste containers, and improper waste storage/handling were noted in the maintenance area located south of Ortega Highway and north of San Juan Creek.

5.2.2 Adjacent Properties

Adjacent properties are agricultural/undeveloped to the north, south, and east, and residential to the west. No environmental concerns were noted.

TABLE 3
Summary of Site Reconnaissance

ITEM	CONCERNS	COMMENTS
General Housekeeping	Yes	Poor housekeeping practices in vehicle maintenance area located south of Ortega Highway and north of San Juan Creek.
Surface Spills	Yes	Small oil spills observed under vehicles.
Stained Soil/pavement	Yes	Minor spillage around maintenance area.
Fill Materials	No	None observed.
Pits/ponds/lagoons	No	None observed.
Surface Impoundments	No	None observed.
AGT's/UST's	No	Three small AGT's containing agricultural chemicals located in lemon orchards in western portion; one AGT containing diesel in former Joan Irvine-Smith Pasture
Distressed Vegetation	No	None observed.
Wetlands	No	Possible wetlands located adjacent to subject property along San Juan Creek south of former Joan Irvine-Smith pasture.
Electrical Substations	No	None observed.
Areas of Dumping	No	None observed.
Pole-mounted Transformers	No	Along Ortega Highway
Waste/scrap storage	Yes	Truck tires and various debris/equipment stored in maintenance area south of Ortega Highway.
Chemical use/storage	Yes	Improper waste storage/handling noted in maintenance area south of Ortega Highway

6.0 CONCLUSIONS/RECOMMENDATIONS

EEI conducted a Phase I Environmental Site Assessment (ESA) at the subject property in March/April 2003. The ESA included a review of regulatory database lists as per ASTM 1527-00. Pursuant to the requirements of Section 65962.5 of the California Government Code, the subject property was not located on the State list of identified hazardous waste and/or hazardous substance sites.

Based on a site reconnaissance, a review of physiographic, historical and regulatory information, and information provided by the property owner, no evidence of *recognized environmental conditions* has been revealed in connection with the subject site, nor any adjacent property, except for the following:

1. Based on conversations with Rancho Mission Viejo personnel and items noted during the site visit, improper waste handling practices at the Field Office maintenance area south of Ortega Highway have resulted in releases of used oil onto the ground. EEI recommends that soil sampling be conducted to assess the possible presence of soil contamination.

2. Two 12,000-gallon UST's were removed from the Rancho Mission Viejo Field Office area (28672 Ortega Highway), one in 1992 and one in 1998. Soil contamination was documented during the removal of both tanks. Groundwater at the site was monitored to determine if residual soil

contamination related to the first UST (removed in 1992) was impacting the groundwater. Dissolved gasoline constituents were reported on groundwater samples. In June 2000, EEI submitted a letter to the Orange County Health Care Agency requesting closure of the site. Based on the fact that the extent of residual soil contamination had been defined, and that the groundwater plume appeared relatively stabile and contained on site, The OCHCA closed the case in May 2001 Based on the status of the site, no further action is warranted at the site at this time.

3. Evidence of a former underground gasoline wind machine tank was noted by the owner during the **D&M Nursery** and **Miramar Nursery** Phase I ESAs. No evidence of contamination was reportedly observed at the time of removal in 1984. In November 2001, EEI excavated a trench in the location of the former UST and collected three soil samples. The samples were analyzed for TPH, VOC's, and Total Lead. No detectable concentrations of TPH were detected in any samples analyzed. Detectable concentrations of VOC's in the form of lead were reported in all three samples. The reported concentrations were background levels associated with natural occurring metals in soil and are not considered human or environmental hazards. No further investigation of the site is warranted at this time.

4. The chemical storage/shop area in the **Miramar Nursery** lease property should be improved to include an impermeable surface (i.e., pavement) and secondary containment for used oil storage.

5. Irrigation runoff was observed leaving **Miramar Nursery** during the Phase I ESA. This practice constitutes a discharge and may be in violation of the Federal Clean Water Act and California Water Code. Measures to limit the offsite flow of irrigation runoff should be implemented.

6. Based on the results of the site reconnaissance during the **Les Thompson Lease** area Phase I ESA, evidence of contamination, petroleum-hydrocarbon staining, waste containers, and improper waste storage/handling were noted. EEI collected soil samples in October 2002 in areas that petroleum-hydrocarbon staining was noted. The samples were analyzed for total petroleum hydrocarbons diesel (TPH-D) and motor oil (TPH-MO) range, volatile organic compounds (VOC's), and lead. Minor concentrations of TPH-D and TPH-MO were reported. However, the reported concentrations are well below regulatory action levels. Therefore, no further action is warranted at the site.

7. The above ground tank should be emptied and removed from the former **Joan Irvine-Smith Pasture**. The contents of the tank should be either reused or transported off site for proper disposal.

8. Evidence of present and past agricultural use has been revealed. If residential or other potentially health-sensitive uses are contemplated (e.g., schools, child care facilities, etc.), EEI recommends that an investigation be conducted to assess the possible presence of residual pesticides in accordance with DTSC's Interim Guidance for Sampling Agricultural Soils dated June 28, 2000.

7.0 REFERENCES

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EEI

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PHASE I ENVIRONMENTAL SITE ASSESSMENT

PLANNING AREA 2
(CHIQUITA CANYON)
San Juan Creek Haul Road and Cañada Chiquita Road
San Juan Capistrano, California

May 1, 2003
(Revised February 2004)

EEI Project No. V030305-38A-PA2

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Phase I Environmental Site Assessment

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Site Location:

PLANNING AREA 2
(CHIQUITA CANYON)
San Juan Creek Haul Road and Cañada Chiquita Road
San Juan Capistrano, California

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EEI Project No. V030305-38A-PA2

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1.0 INTRODUCTION

1.1 Purpose

The purpose of this Phase I Environmental Site Assessment (ESA) was to assess the possible presence of *recognized environmental conditions* within Planning Area Two (Chiquita Canyon), located at San Juan Creek Haul Road and Cañada Chiquita Road, approximately two miles northeast of San Juan Capistrano, California (**Site Location Map, Figure 1**). *Recognized environmental conditions* include those property uses that may indicate the presence or likely presence of an existing, historical, or threatened release of any hazardous substances or petroleum products into structures, soil, and/or groundwater beneath the property. The term *recognized environmental conditions* is not intended to include *de minimus* conditions that generally do not present a material risk of harm to public health or the environment.

This ESA was performed in general conformance with the American Society for Testing and Materials (ASTM) *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process,* designation E1527-00.

1.2 Scope of Services

The scope of services outlined below was performed in accordance with the Agreement for Professional Services dated February 12, 2003 (Proposal 39A), between Morgan Lewis, & Bockius, LLP, and EEI.

- A review of available documents for topographic, geologic, and hydrogeologic data affecting the site.
- A review of available maps, aerial photographs and other documents to estimate historical site usage and development.
- A review of federal, state, county, and city documents concerning hazardous material storage, generation, and disposal, active and inactive landfills, nearby environmental concerns, and associated permits.
- Interviews with individuals having knowledge of the site.
- A review of previous investigations conducted by EEI.
- A site reconnaissance to ascertain the current condition of the site.
- The preparation of this report which presents our findings, conclusions, and recommendations.

1.3 Reliance

This ESA has been prepared for the sole use of Morgan Lewis, & Bockius, LLP, and Rancho Mission Viejo. This assessment should not be relied upon by other parties without the express written consent of EEI, Morgan Lewis, & Bockius, LLP, and Rancho Mission Viejo. Therefore, any use or reliance upon this assessment by a party other than Morgan Lewis, & Bockius, LLP, and Rancho Mission Viejo, shall be solely at the risk of such third party and without legal recourse against EEI, its employees, officers, or directors, regardless of whether the action in which recovery of damages is brought is based upon contract, tort, statute or otherwise.

This assessment should not be interpreted as a statistical evaluation of the site, but is rather intended to provide a preliminary indication of on-site impacts from previous site usage or the release of hazardous materials. If no significant indicators of the presence of hazardous materials are encountered during this search, this does not preclude their presence.

The findings in this report are based upon a review of published geologic and hydrogeologic information, information (both documentary and oral) provided by Rancho Mission Viejo, Orange County Planning/Building and Safety Department, Orange County Fire Authority, Orange County Health Care Agency, Orange County Agricultural Commissioner, First Search (an environmental database retrieval system), various state and federal agencies, and field observations. Some of these data are subject to change over time. Some of these data are based on information not currently observable or measurable, but recorded by documents or orally reported by individuals.

2.0 PROPOSED PROJECT

2.1 Overall Description of Proposed Project

As proposed by Rancho Mission Viejo, the project includes 22,815 acres general planned and zoned for development of up to 14,000 dwelling units in nine planning areas and other uses and open space within four planning areas. Other uses include 91 acres of urban activity center uses, 240 acres of business park uses, 50 acres of neighborhood retail uses, up to four golf courses and approximately 15,576 acres of open space area which includes a proposed 1,034 acre regional park. Within the nine planning areas proposed for development, approximately 7,694 acres would be developed. Ranching and other agricultural activities would also be retained within a portion of the proposed open space area. Infrastructure would be constructed to support all of these uses, including road improvements, utility improvements and schools. The Planning Area Location Map (**Plate 1**) illustrates the boundaries of the proposed project.

2.2 Description of Planning Area

Planning Area Two is located north of Ortega Highway, east of Antonio Parkway, south of Oso Parkway and Tesoro High School, and west of Canada Gobernadora. The area encompasses approximately 1,680 acres, and would be designated 1B-Suburban Residential on the General Plan. A total of 1,550 units are proposed in approximately 1030 acres within the Planning Area. This planning area also proposed approximately 40 gross acres of business park overlay zone, with an expected 610,000 square feet of business park uses and 50,000 square feet of neighborhood retail (5 acres). Six hundred fifty acres of open space are proposed in this planning area. The proposed Rancho Mission Viejo Regional Park would extend along the southern boundary of this planning area.

3.0 PHYSIOGRAPHIC SETTING

3.1 Site Description

The subject property encompasses portions of the lots identified by assessor's parcel numbers 125-161-40, 125-161-39, 125-161-35, 125-171-25 and 125-171-07 (**Assessor's Parcel Map, Appendix A**). Access to the property is available via San Juan Creek Haul Road, Cañada Chiquita Road, and ranch access roads.

The property is bounded by open space and vacant land to the east, vacant land and the Tesoro High School Conservation Easement to the west, San Juan Creek and an access road to the south, and Tesoro High School to the north. The Santa Margarita Chiquita Canyon Water Reclamation Plant is adjacent to the west of the subject property. According to the Orange County Planning Department, the site is zoned A-1 (General Agriculture). A copy of the County Zoning Map is included in **Appendix B**.

The site is currently occupied by lemon tree orchards and open space (**Site Plan, Figure 2**). EEI previously conducted an environmental site assessment of the former Sea Tree Nursery, located in the present-day lemon grove area, and a brief summary of this report is included below in section 4.6.

3.2 Topography

The site is located along Cañada Chiquita Creek, in a gently sloping alluvial valley, north of San Juan Creek. Site elevations range from approximately 200 feet above mean sea level (amsl) along the southern margin of the subject property, to approximately 500 feet amsl along the northern margin. The topographic gradient in the site vicinity is to the south-west at approximately 0.14 feet per foot. Surface drainage from the site flows south into San Juan Creek, and eventually into the Pacific Ocean, approximately three miles to the southwest. Based on the Flood Zone Map published by the Federal Emergency Management Agency (FEMA), the portions of the site along the creek lie within a 100-year flood zone. However, the majority of the subject property does not lie within a flood zone.

3.3 Regional and Local Geology

Cañada Chiquita is situated on the southwestern slopes of the Santa Ana Mountains (Norris and Webb, 1990). The Santa Ana Mountains form the northwest margin of the Peninsular Ranges Geomorphic Province, and are comprised principally of granitic, metavolcanic, and sedimentary rocks of Jurassic to Pliocene age. The mountains are the result of relatively slow, late-Quaternary uplift which has shaped the range into a dissected horst block.

Sedimentary deposits in the site vicinity are a homoclinal sequence of marine and nonmarine formations including the Pliocene Capistrano and Monterey Formations, the Miocene Topanga Formation, the Eocene Sespe and Santiago Formations, the Paleocene Silverado Formation, and the Upper Cretaceous Williams and Ladd Formations (Morton, 1974). These deposits lie unconformably upon the older metamorphic and volcanic rocks, including the Jurassic Santiago Peak Volcanics and the Bedford Canyon Formation. Quaternary alluvial soils, derived primarily from weathering of the Santa Ana Mountains, form the gently sloping river terraces in the site vicinity.

Soil in the vicinity of the site has been identified by the United States Department of Agriculture - National Resource Conservation Service as belonging to the Botella, Capistrano, and Myford associations (USDA, 1978). Soils in the Botella and Capistrano associations are typically found on gently sloping to moderately sloping alluvial fans and consist mainly of well-drained clays and sandy loams. These soils have a moderately slow to moderately rapid permeability, medium runoff, and the erosional hazard is moderate.

Soils in the Myford association are found on marine terraces and consist mainly of sandy loams. This soil type is very slowly permeable, runoff is medium to rapid, and the erosional hazard is moderate.

Structural deformation in the vicinity of the site is related to the Elsinore Fault Zone, a major northwest-southeast trending strike-slip fault zone located approximately 15 miles to the northeast. Motion along the Elsinore Fault Zone is primarily right-lateral, although a vertical component may also be present. The Elsinore Fault Zone is considered active, with major ruptures occurring roughly every 250 years at magnitudes of between 6.5 - 7.5 (SCEC, 1998). Other major faults in the vicinity of the site include the Cristianitos Fault (just west of the site), the Mission Viejo Fault (east of the site), and the Newport Inglewood Fault (southwest of the site).

3.4 Regional and Local Hydrogeology

According to the Basin Plan published by the San Diego Regional Water Quality Control Board (SDRWQCB, 1994), the site lies within the Gobernadora Hydrologic Subarea of the San Juan Hydrologic Unit. In general, groundwater in this area has been designated as beneficial for domestic/municipal, agricultural, and industrial uses. Groundwater levels in the vicinity of the site are seasonally variable, but generally occur at between 10 and 100 feet bgs (Rancho Mission Viejo personnel, personal communication).

The Gobernadora Hydrologic Subarea is located within the San Juan Creek watershed. San Juan Creek (immediately south of the site), Canada Chiquita (adjacent to the west of the site), and Canada Gobernadora (east of the site) are the major drainages within this watershed. According to the SDRWQCB, the drainages within this watershed are exempt from municipal use, but have been designated as beneficial for agricultural, industrial, warm water habitat, cold water habitat, wildlife habitat, and recreational 1 and 2.

4.0 SITE BACKGROUND

4.1 Site Ownership

Information regarding site ownership was provided by Rancho Mission Viejo. The current owner is listed as the DMB San Juan Investment North, LLC. The owners address is listed as PO Box 9, San Juan Capistrano, California, 92693.

4.2 Site History

EEI reviewed available information sources to evaluate historic land use in and around the property. Aerial photographs, United States Geological Survey maps, Sanborn Maps, City Directories and other sources were researched.

4.2.1 Aerial Photograph Review

Aerial photographs were reviewed to identify historical land development and any uses which may have impacted the site. Photographs dating from 1953 to 1999 were reviewed at Continental Aerial Photo in Los Alamitos, California. In addition, a 2002 aerial photograph (EDAW) was also reviewed. **Table 1** summarizes the results of the aerial photograph review. A copy of a 2000 photograph is provided in **Figure 3**.

TABLE 1
Summary of Aerial Photograph Review

Year	Photo ID	Comments
1953	AXK-SK-147[(1)]	The subject property is vacant and covered by thick vegetation. Adjacent properties are also vacant.
1959	261-8-29-116[(1)]	No pertinent changes were noted to the subject property since the previous photograph.
1967	2-169[(1)]	The small canyons in the subject property are cleared and possibly cultivated. Elevated areas of the site are vacant and covered with thick vegetation.
1970	61-8-208[(1)]	No pertinent changes were noted to the subject property since the previous photograph.
1973	132-12-17[(1)]	No pertinent changes were noted to the subject property since the previous photograph.
1977	181-13-25[(1)]	No pertinent changes were noted to the subject property since the previous photograph.
1983	218-13-25/13-24[(1)]	No pertinent changes were noted to the subject property since the previous photograph.
1987	F290/277[(1)]	The Chiquita Water Reclamation Plant is present adjacent to the west of the subject property. The area occupied by former Sea Tree Nursery has been cleared, but does not appear cultivated. The remainder of the site is vacant.
1992	C85-13-13/C85-17-13[(1)]	No pertinent changes were noted to the subject property since the previous photograph.
1993	C90-5-148/149[(1)]	No pertinent changes were noted to the subject property since the previous photograph.
1995	C102-42-175/176[(1)]	The area occupied by the former Sea Tree Nursery appears cultivated. A small holding pond at north part of the property was noted. The remainder of the property was noted as vacant.
1997	C117-42-40[(1)]	The northern portion of the property (north of former Sea Tree Nursery) appears cleared in the canyons, although the cleared areas do not appear cultivated. The remainder of the property is vacant.
1999	C-136-42-81/80[(1)]	No pertinent changes were noted to the subject property since the previous photograph.
2002	EDAW - Chiquita[(2)]	No pertinent changes were noted to the subject property since the previous photograph. The property appears in its current configuration.

[(1)] Aerial Photograph viewed at Continental Aerial Photographs, Los Alamitos, California
[(2)] Aerial Photograph obtained from EDAW

4.2.2 Historic Maps

EEI reviewed topographic maps dating from 1942 to1988 at the University of California at Santa Barbara, Map and Imagery Laboratory. The 1942 map was published by the United States Army Corps of Engineers. The 1948, 1968, 1974, 1980, 1982, and 1988 maps were published by the United States Geological Survey.

None of the maps from 1942 to 1988 show developed structures on the property. All the maps note a dirt road present along Cañada Chiquita. The 1988 map shows the presence of the adjacent Santa Margarita Water Reclamation Plant along the western margin of the subject property. No other pertinent items were noted.

4.2.3 City/County Directories

EEI reviewed available Criss Cross City Directories for Orange County. The subject property has never been assigned a street address, therefore, there were no listings for the subject property.

4.2.4 Sanborn Maps

EEI researched available Sanborn Fire Insurance Maps of the subject site. Sanborn Maps provide detailed information on site structures, uses, and occupancies and were typically utilized by insurance companies to evaluate potential fire risk. Based on EEI's review, no Sanborn Fire Insurance Maps are available for the area surrounding the subject site, indicating little commercial development prior to 1950.

4.2.5 Orange County Building and Safety Department Files

Based on reviews of historic aerial photographs, historic topographic maps and interviews with the property owner, the site has never been developed. Therefore, a review of building department records was not conducted for this ESA.

4.3 Regulatory Database Search

EEI reviewed known electronic database listings for possible hazardous waste generating establishments in the vicinity of the site, as well as on sites in the area with known environmental concerns. Facilities were identified by county, state, or federal agencies and either generate, store, or dispose of hazardous materials. The majority of information in this section was obtained from FirstSearch®, an environmental information/database retrieval service. A copy of the FirstSearch® report is provided in **Appendix C**, along with a description of the individual databases. The subject property was not listed in any of the databases reviewed as having environmental concerns. For discussion purposes, the term "non-geocoded" is applied to sites that either have non-existent or incomplete addresses. EEI has attempted to locate these sites, based on the location description provided in the records search. Below is a list of databases that were reviewed in the preparation of this report.

4.3.1 Federal Databases

National Priority List (NPL) - No listings were reported within one mile of the subject site.

Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) - No listings were reported within one-half mile of the subject site.

RCRA TSD Facility List (RCRA-D) - No listings were reported within one-half mile of the subject site.

RCRA COR (Corrective Action Sites) - No listings were reported within one mile of the subject site.

RCRA Generators (RCRA-G) - Three non-geocoded sites were identified. The sites are actually located greater than one mile from the subject property, and operating permits are no generally considered cause for environmental concern. Therefore, these sites are not considered environmental concerns at this time.

RCRA NLR (No Longer Regulated) - No listings were reported within one-eighth of a mile from the subject property.

Emergency Response Notification System (ERNS) - Eleven listings were reported within one-eighth of a mile from the subject property, all of which were non-geocoded. These sites are actually located greater than one mile from the subject property. Therefore, these sites are not considered environmental concerns at this time.

The subject property was not identified on any of the databases researched.

4.3.2 State and Regional Sources

State Listings - One non-geocoded site was identified within one mile of the subject site, however, this site is actually located in San Clemente, and is greater than one mile from the subject property. The site is not considered an environmental concern at this time.

Spills 1990 - No listings were reported within one-eighth of a mile from the subject property.

Solid Waste Landfill (SWL) Sites - Nine listings were reported within one half mile of the subject site, including seven non-geocoded sites that are actually located greater than one mile from the subject property. **Solag Disposal** (31641 Ortega Highway) and **Unknown** (31511 Ortega Highway) are located less than one-half mile southeast of the subject property. Operating permits are not generally considered cause for environmental concern, unless a documented release has occurred at the property. These sites are not considered environmental concerns at this time.

Permits - No listings were identified within one-eighth of a mile from the subject property.

Permitted Underground Storage Tanks (UST) - Four listings were reported within one-quarter mile of the subject site, all of which are non-geocoded and are actually located greater than one mile from the subject property. Therefore, these sites are not considered environmental concerns at this time.

Orange County Groundwater Clean-up List (Other) - One site was identified within one quarter of mile of the subject property. This site is non-geocoded and is actually located greater than one mile from the subject site. Therefore, these sites are not considered environmental concerns at this time.

California State Leaking Underground Storage Tanks (LUST) - Five listings were reported within one-half mile of the subject site. **Cal Mat** (31511 Ortega Highway) was formerly located approximately one-half mile east of the subject property. A gasoline leak was reported at this site in February 1990, reportedly impacting the soil only. The case was closed in February 1991. Based on the distance from the subject property and the status of the case, the site is not considered an environmental concern at this time. One listed site was non-geocoded and is actually located greater than one mile from the subject property. The remaining three are all listings for **California Silica Products Co./Oglebay Norton Industrial Sands, Inc.** (31302 Ortega Highway). A diesel release was reported in October 1990, impacting the soil only, and the case was closed in June 1991. A gasoline release was reported in April 1993, impacting the soil only, and the case was closed in March 1993. Finally, a diesel release was discovered during a tank test in August 1997, impacting the soil only. The case was closed in April 2001. Based on the distance from the subject site (over one-half mile) and the status of each case (closed) this site is not considered an environmental concern at this time.

Releases (Air/Water) - Two sites were listed within one-quarter mile of the subject property. Both listings were non-geocoded. The sites are listed as occurring on Oso Street, which is greater than one mile north of the subject property. Therefore, these sites are not considered an environmental concern at this time.

PCB Activity Database System (PADS) - No sites were listed within one quarter mile of the subject property.

The subject property was not listed on any state or regional databases researched.

4.4 Regulatory Agency Review

4.4.1 Orange County Fire Authority

EEI contacted the Orange County Fire Authority's (OCFA) office for information regarding hazardous materials storage at the subject site. According to the previous environmental site assessment of Sea Tree Nursery (EEI, 2002), the subject property does not have an official address or hazardous materials permit file. Therefore, it is not currently under a regular inspection schedule.

4.4.2 Orange County Health Care Agency

EEI reviewed Orange County Health Care Agency databases including Underground Storage Tank (UST) Facilities, Non-petroleum Underground Tanks, Leaking Underground Storage Tank (LUST) database, Hazardous Waste Generators and Land Fill Sites, to determine if the subject site or any properties within the site vicinity were listed as having an environmental concern. The subject site was not listed as having an environmental concern.

The adjacent Chiquita Water Reclamation Plant is identified as a closed LUST case (gasoline - File No. 00UT7). The case was issued closure on October 19, 2001. According to the previous ESA completed for Sea Tree Nursery (EEI, 2002), only limited contamination was reported in the vicinity of the tank pit. Based on the information reviewed by EEI, this site is not considered an environmental concern at this time.

4.4.3 California Regional Water Quality Control Board

EEI reviewed the online database GeoTracker, maintained by the California Regional Water Quality Control Board, to determine whether the site or any nearby property was listed as having a leaking underground tank, spill, leak, or aboveground tank problem. There were no listings for the subject site nor any adjacent property.

4.4.4 Review of Division of Oil, Gas and Geothermal Resources Files

EEI reviewed information regarding oil production near the site provided by the California Division of Oil, Gas, and Geothermal Resources. Only the southern portion of the subject site was covered. There are no wells or petroleum production and exploration reported on this portion of the subject site.

4.5 Interview with Key Site Personnel

In April 2002, EEI contacted Mr. Fred Vorhees, Ranch Manager for Rancho Mission Viejo (property owner) for information regarding the former Sea Tree Nursery lease property (EEI, 2002). Mr. Vorhees indicated that he has been working at the Ranch for approximately 30 years and is familiar with the subject property. Mr. Vorhees stated that the property had historically been used for agricultural purposes. No other items of environmental concern were noted during the interview.

In April 2003, EEI contacted Mr. Vorhees for information regarding the remainder of the subject property.

Q: Is the property or any adjoining property used for an industrial or agricultural use?

A: Yes, part of the property is used for farming lemon groves. The rest of it has always been grazing land.

Q: To the best of your knowledge, was the property or any adjoining property used for industrial or agricultural purposes in the past?

A: Yes. Prior to 1983 the farmed area of the property was used for growing barley. From 1983-1998 it was used by Sea Tree Nursery for growing trees.

Q: Are you aware of any current or previous uses of the site or adjoining properties which may create an environmental concern?

A: No.

Q: To the best of your knowledge has the property or any adjoining property ever been used as a gasoline station, motor repair facility, commercial printing facility, dry cleaners, photo developing laboratory, junkyard or landfill, or as a waste treatment, storage, disposal, processing or recycling facility?

A: No.

Q: Are there currently, or to the best of your knowledge have there been previously, any damaged or discarded automotive or industrial batteries, or pesticides, paints or other chemicals in individual containers of greater than 5 gal (19 L) in volume or 50 gal (190 L) in the aggregate, stored on or used at the property or at the facility?

A: No.

Q: Are there currently, or to the best of your knowledge have there been previously, any industrial drums (typically 55 gal) or sacks of chemicals located on the property or at the facility?

A: No.

Q: Has fill dirt been brought onto the property that may have originated from a contaminated site or that is of an unknown origin?

A: No.

Q: Are there currently, or to the best of your knowledge have there been previously, any pits, ponds, or lagoons located on the property in connection with waste treatment or waste disposal?

A: No.

Q: *Is there currently, or to the best of your knowledge has there been previously, any stained soil on the property?*

A: No.

Q: Are there currently, or to the best of your knowledge have there been previously, any registered or unregistered storage tanks (above or underground) located on the property?

A: No.

Q: Are there currently, or to the best of your knowledge have there been previously, any vent pipes, fill pipes, or access ways indicating a fill pipe protruding from the ground on the property or adjacent to any structure located on the property?

A: No.

Q: Are there currently, or to the best of your knowledge have there been previously, any flooring, drains, or walls located within the facility that are stained by substances other than water or are emitting foul odors?

A: No.

Q: If the property is served by a private well or non-public water system, have contaminants been identified in the well or system that exceed guidelines applicable to the water system or has the well been designated as contaminated by any government environmental/health agency?

A: No.

Q: Does the owner or occupant of the property have any knowledge of environmental liens or governmental notification relating to past or recurrent violations of environmental laws with respect to the property or any facility located on the property?

A: No.

Q: Has the owner or occupant of the property been informed of the past or current existence of hazardous substances or petroleum products or environmental violations with respect to the property or any facility located on the property?

A: No.

Q: Does the owner or occupant of the property have any knowledge of any environmental site assessment reports prepared for the property or facility that indicated the presence of hazardous substances or petroleum products on, or contamination of, the property or recommended further assessment of the property?

A: No.

Q: Does the owner or occupant of the property know of any past, threatened, or pending lawsuits or administrative proceedings concerning a release or threatened release of any hazardous substance or petroleum products involving the property by any owner or occupant of the property?

A: No.

Q: Does the property discharge waste water on or adjacent to the property other than storm water into a sanitary sewer system?

A: No.

Q: To the best of your knowledge, have any hazardous substances or petroleum products, unidentified waste materials, tires, automotive or industrial batteries or any other waste materials been dumped above grade, buried and/or burned on the property?

A: No.

Q: Is there a transformer, capacitor, or any hydraulic equipment for which there are any records indicating the presence of PCBs?

A: No.

4.6 Previous Assessments

In April 2002, EEI completed a Phase I Environmental Site Assessment of the former Sea Tree Nursery, located in the central portion of the subject property (EEI, 2002). At the time of the report, the nursery was occupied by lemon groves and a wetlands mitigation area was noted to the west of the property. No evidence of contamination, distressed vegetation, petroleum-hydrocarbon staining, waste drums, illegal dumping, or improper waste storage/handling were noted during the site reconnaissance. Historical research indicated that the property was vacant prior to being cultivated, and no environmental concerns were noted regarding the subject property. The adjacent Santa Margarita Chiquita Canyon Water Reclamation Plant was identified as reporting a leaking underground fuel tank, and EEI recommended that the status of the case be monitored. The case has since been closed.

4.7 Other Environmental Issues

4.7.1 Asbestos Containing Materials

Asbestos is a natural mineral fiber used in the manufacture of a number of different building materials. Asbestos has also been identified as a human carcinogen. Most friable (i.e., those that are easily broken or crushed) asbestos-containing materials (ACM) were banned in building materials by 1978. By 1989, most major manufacturers had voluntarily removed non-friable ACM (i.e., flooring, roofing, and mastics/sealants) from the market. However, these materials were not banned completely.

In October 1995, the Federal Occupational Safety and Health Administration (OSHA) redefined the manner by which building materials are classified in regards to asbestos and the also the way these materials are to be handled. Under this ruling, "thermal system insulation and sprayed-on or troweled on or otherwise applied surfacing materials" applied before 1980 are considered presumed asbestos containing materials (PACM). Other building materials such as " floor or ceiling tiles, siding, roofing, transite panels" (i.e., non-friable) are also considered PACM unless tested.

There are no structures located on the subject site. Therefore the presence of ACM is not anticipated.

4.7.2 Lead-Based Paint

Lead-based paint is identified by OSHA , the Environmental Protection Agency (EPA) and the Department Housing and Urban Development Department (HUD) as being a potential health risk to humans, particularly children, based upon its effects to the central nervous system, kidneys, and bloodstream. The risk of lead-based paint has been classified by HUD based upon the age and condition of the painted surface. This classification includes the following:

- maximum risk is from paint applied before 1950
- a severe risk is present from paint applied before 1960
- a moderate risk is present from paint applied before 1970
- a slight risk is present from paint applied before 1977
- paint applied after 1977 is not expected to contain lead.

There are no structures located on the subject property. Therefore the presence of lead-based paint is not anticipated.

4.7.3 Radon

Radon is a radioactive gas which has been identified as a human carcinogen. Radon gas is typically associated with fine-grained rock and soil, and results from the radioactive decay of radium. EPA recommends that homeowners in areas with radon screening levels greater than 4 pCi/L (picocurries per liter) conduct mitigation of radon gas to reduce exposure.

Sections 307 and 309 of the Indoor Radon Abatement Act of 1988 (IRAA) directed EPA to list and identify areas of the U.S. with the potential for elevated indoor radon levels. EPA's Map of Radon Zones (EPA-402-R-93-071) assigns each of the 3,141 counties in the U.S. to one of three zones based on radon potential:

- Zone 1 counties have a predicted average indoor radon screening level greater than 4 pCi/L.
- Zone 2 counties have a predicted average indoor radon screening level between 2 and 4 pCi/L.
- Zone 3 counties have a predicted average indoor radon screening level less than 2 pCi/L.

Based on such factors as indoor radon measurements; geology; aerial radioactivity; soil permeability; and foundation types, EPA has identified Orange County as Zone 3 (i.e., low potential for radon gas). Therefore, EEI does not consider radon as a concern at this time.

5.0 SITE RECONNAISSANCE

5.1 Purpose

The purpose of the site reconnaissance was to visually and physically observe the site, site structures, and adjoining properties for conditions indicating an existing release, past release, or threatened release of any hazardous substances or petroleum products into structures of the site, or into soil and/or groundwater beneath the site. This would include any evidence of contamination, distressed vegetation, petroleum-hydrocarbon staining, waste drums, illegal dumping, or improper waste storage/handling.

5.2 Results of Site Reconnaissance

5.2.1 Subject Site

On March 31, 2003, EEI personnel visited the entire site. Photographs 1 through 14 (**Appendix D**) document the site reconnaissance, which is summarized in **Table 2**.

The subject property is situated along Cañada Chiquita Creek, just east of Cañada Chiquita Road. The majority of the property (i.e., the northern, eastern, and southern portions) are undeveloped. Approximately 60 acres in the western portion (north of the Chiquita Water Reclamation Plant) is principally vegetated with lemon trees, although native plant material is present along the western margin and along the creek bed.

Access to the site is through an unpaved access road that runs along the southern margin of the property. Two dirt access roads run along the eastern and western margins of the property.

EEI personnel conducted a driving reconnaissance perimeter of the site, then traversed the site from east to west and north to south, visually observing the physical features of the site. No evidence of contamination, distressed vegetation, petroleum-hydrocarbon staining, waste drums, illegal dumping, or improper waste storage/handling were noted during the site reconnaissance.

TABLE 2
Summary of Site Reconnaissance

ITEM	CONCERNS	COMMENTS
General Housekeeping	No	Facility appears well maintained and in good condition.
Surface Spills	No	None observed.
Stained Soil/pavement	No	None observed.
Fill Materials	No	None observed.
Pits/ponds/lagoons	No	None observed.
Surface Impoundments	No	None observed.
AGT's/UST's	No	None observed.
Distressed Vegetation	No	None observed.
Wetlands	No	Yes, along creek and ponds.
Electrical Substations	No	None observed.
Areas of Dumping	No	None observed.
Pole-mounted Transformers	No	None observed.
Waste/scrap storage	No	None observed.
Chemical use/storage	No	Consistent with facility usage (i.e., agriculture).

5.2.2 Adjacent Properties

The Santa Margarita Water District Chiquita Water Reclamation Plant is located immediately adjacent to the west, and Tesoro High School is located immediately adjacent to the north. Other adjacent properties to the west, east, and south are undeveloped/agricultural. No environmental concerns were noted.

6.0 CONCLUSIONS/RECOMMENDATIONS

EEI conducted a Phase I Environmental Site Assessment (ESA) at the subject property in March/April 2003. The ESA included a review of regulatory database lists as per ASTM 1527-00. Pursuant to the requirements of Section 65962.5 of the California Government Code, the subject property was not located on the State list of identified hazardous waste and/or hazardous substance sites.

Based on a site reconnaissance, a review of physiographic, historical and regulatory information, and information provided by the property owner, no evidence of *recognized environmental conditions* has been revealed in connection with the subject site, nor any adjacent property, except for the following:

1. An adjacent property, Chiquita Water Reclamation Plant, was identified as a closed LUFT case. However, only limited soil contamination was reported, and the case was issued closure by OCHCA on October 19, 2001. Therefore, no further investigation appears to be warranted.

2. Evidence of past agricultural use has been revealed. If residential or other potentially health-sensitive uses are contemplated (e.g., schools, child care facilities, etc.), EEI recommends that an investigation be conducted to assess the possible presence of residual pesticides in accordance with DTSC's Interim Guidance for Sampling Agricultural Soils dated June 28, 2000.

7.0 REFERENCES

California Division of Mines and Geology, 1973, Geo-Environmental Maps of Orange County, California.

California Division of Mines and Geology, 1994, Fault Activity Map of California and Adjacent Areas.

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EEI

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PHASE I ENVIRONMENTAL SITE ASSESSMENT

PLANNING AREA 3
(GOBERNADORA CANYON)
Gobernadora Canyon Road and San Juan Creek Haul Road
San Juan Capistrano, California

May 1, 2003
(Revised February 2004)

EEI Project No. V030305-38A-PA3

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Phase I Environmental Site Assessment

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Site Location:

PLANNING AREA 3
(GOBERNADORA CANYON)
Gobernadora Canyon Road and San Juan Creek Haul Road
San Juan Capistrano, California

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1.0 INTRODUCTION

1.1 Purpose

The purpose of this Phase I Environmental Site Assessment (ESA) was to assess the possible presence of *recognized environmental conditions* within the Planning Area Three (Gobernadora Canyon) portion of Rancho Mission Viejo, located approximately three miles east of the City of San Juan Capistrano, California (**Site Location Map, Figure 1**). *Recognized environmental conditions* include those property uses that may indicate the presence or likely presence of an existing, historical, or threatened release of any hazardous substances or petroleum products into structures, soil, and/or groundwater beneath the property. The term *recognized environmental conditions* is not intended to include *de minimus* conditions that generally do not present a material risk of harm to public health or the environment.

This ESA was performed in general conformance with the American Society for Testing and Materials (ASTM) *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process,* designation E1527-00.

1.2 Scope of Services

The scope of services outlined below was performed in accordance with the Agreement for Professional Services dated February 12, 2003 (Proposal 39A), between Morgan Lewis, & Bockius, LLP, and EEI.

- A review of available documents for topographic, geologic, and hydrogeologic data affecting the site.
- A review of available maps, aerial photographs and other documents to estimate historical site usage and development.
- A review of previous investigations conducted by EEI.
- A review of federal, state, county, and city documents concerning hazardous material storage, generation, and disposal, active and inactive landfills, nearby environmental concerns, and associated permits.
- Interviews with individuals having knowledge of the site.
- A site reconnaissance to ascertain the current condition of the site.
- The preparation of this report which presents our findings, conclusions, and recommendations.

1.3 Reliance

This ESA has been prepared for the sole use of Morgan Lewis, & Bockius, LLP, and Rancho Mission Viejo. This assessment should not be relied upon by other parties without the express written consent of EEI, Morgan Lewis, & Bockius, LLP, and Rancho Mission Viejo. Therefore, any use or reliance upon this assessment by a party other than Morgan Lewis, & Bockius, LLP, and Rancho Mission Viejo, shall be solely at the risk of such third party and without legal recourse against EEI, its employees, officers, or directors, regardless of whether the action in which recovery of damages is brought is based upon contract, tort, statute or otherwise.

This assessment should not be interpreted as a statistical evaluation of the site, but is rather intended to provide a preliminary indication of on-site impacts from previous site usage or the release of hazardous materials. If no significant indicators of the presence of hazardous materials are encountered during this search, this does not preclude their presence.

The findings in this report are based upon a review of published geologic and hydrogeologic information, information (both documentary and oral) provided by Rancho Mission Viejo, Orange County Planning/Building and Safety Department, Orange County Fire Authority, Orange County Health Care Agency, Orange County Agricultural Commissioner, First Search (an environmental database retrieval system), various state and federal agencies, and field observations. Some of these data are subject to change over time. Some of these data are based on information not currently observable or measurable, but recorded by documents or orally reported by individuals.

2.0 PROPOSED PROJECT

2.1 Overall Description of Proposed Project

As proposed by Rancho Mission Viejo, the project includes 22,815 acres general planned and zoned for development of up to 14,000 dwelling units in nine planning areas and other uses and open space within four planning areas. Other uses include 91 acres of urban activity center uses, 240 acres of business park uses, 50 acres of neighborhood retail uses, up to four golf courses and approximately 15,576 acres of open space area which includes a proposed 1,034 acre regional park. Within the nine planning areas proposed for development, approximately 7,694 acres would be developed. Ranching and other agricultural activities would also be retained within a portion of the proposed open space area. Infrastructure would be constructed to support all of these uses, including road improvements, utility improvements and schools. The Planning Area Location Map (**Plate 1**) illustrates the boundaries of the proposed project.

2.2 Description of Planning Area

Planning Area Three encompasses approximately 2,353 gross acres and would be designated 1B-Suburban Residential on the General Plan. This planning area is located north of San Juan Creek, west of Caspers Regional Park, south of Coto de Caza, and east of Canada Gobernadora. Approximately 5,630 dwelling units would be constructed on 2,089 acres. The remainder of the planning area (264 acres) would remain as open space. The residential areas would include apartments, estates, and senior housing. The planning area would also support overlay zones that propose 132 gross acres of core urban activity area with an expected 1,680,000 square feet of urban activity center, including office space, 100,000 square feet of retail, and a Town Center.

3.0 PHYSIOGRAPHIC SETTING

3.1 Site Description

The subject property is located in southeastern Orange County, approximately three miles east of San Juan Capistrano, and encompasses portions of each of the lots identified by assessor's parcel numbers 125-161-03, 125-161-41, 125-161-44, and 125-161-45 (**Assessor's Parcel Map, Appendix A**). Access to the property is through Ortega Highway, San Juan Creek Haul Road, and several ranch access roads.

The property is bounded by San Juan Creek to the south, a conservation easement to the west, a residential development to the north, and vacant land to the east. According to the Orange County Planning Department, the majority of the site is zoned A-1 (General Agriculture) and a portion of parcel 125-161-03 is zoned SG (Sand and Gravel Extraction). A copy of the County Zoning Map and zoning restrictions are included in **Appendix B**.

The majority of the subject property (the northern portion) is vacant and covered by thick vegetation. The remainder of the property (the southern portion) is currently occupied by various commercial, industrial, and agricultural businesses, and a few residences, including the following (**Site Plan, Figure 2**):

- Color Spot Nursery (31101 Ortega Highway) encompasses approximately 245 acres and is located in the central portion of the subject property. The site is a commercial nursery with a maintenance shop, storage buildings, greenhouses, lined ponds, an irrigation recovery system, and a water filtration/blending station;

- Cellular On Wheels (C.O.W.) Site near Color Spot Nursery (31101 Ortega Highway) encompasses approximately one acre and is located in the central portion of the subject property. The site currently contains two telecommunications tower and a small concrete structure, which apparently houses support equipment for the towers.

- St. Augustine's Training Center (31151 Ortega Highway) encompasses approximately one-half acre and is located in the southwest portion of the subject property. The site is occupied by a horse training facility with several stables, a few portable storage trailers, and two residential trailers;

- O'Connell Landscaping (31821 Ortega Highway) encompasses approximately one-half acre and is located in the southeastern portion of the subject property. The site is used as a storage yard which includes several portable storage units;

- Catalina Pacific Concrete (CPC) North (31511 Ortega Highway) encompasses approximately 16 acres and is located in the southeastern portion of the subject property. The site is occupied by a concrete batch plant which includes a truck fueling facility, a truck washout area, office building, scale house, maintenance shop, storage buildings, several storage units, and three sublessee spaces, including Saddleback Materials (materials storage), Chuck Royce Trucking (equipment storage), and Laguna Asphalt Paving (equipment storage);

- Cemex (formerly City Concrete, 31601 Ortega Highway) encompasses approximately four acres and is located in the southeastern portion of the subject property. The site is occupied by a concrete batch plant which includes an office trailer, maintenance trailer, fueling island, truck washout area, and a storage shed;

- Olsen Pavingstone (31511 Ortega Highway) encompasses approximately six acres and is located in the southeastern portion of the subject property. The site is occupied by a paving stone manufacturing plant which includes several office trailers, a residential unit, the manufacturing plant, and several storage units;

- CR&R/Solag Disposal Company (31641 Ortega Highway) encompasses approximately six acres and is located in the southeastern portion of the subject property. The site is occupied by a waste management facility which includes an office building, maintenance shop, fueling station, waste processing unit, and storage units;

- Ewles Materials (32501 Ortega Highway) encompasses approximately two and a half acres and is located in the southeastern portion of the subject property. The site is occupied by a recycling and processing plant which includes an office trailer, employee trailer, storage unit, a fuel compound, and a wash station;

- Campo Vaquero (31471 Ortega Highway) encompasses approximately fifty acres and is located in the southern portion of the subject property. The site includes pasture fields, a maintenance facility, and horse corrals;

- A field and lemon groves north of Ewles Materials;

- Several residences (31121, 31151, 31181, 31221, 31241,31261, 31263, 31265, 31381, and 31825 Ortega Highway) are located along the ridge north of Campo Vaquero, in the southwestern portion of Campo Vaquero along San Juan Creek, and adjacent to the O'Connell Landscaping storage yard.

EEI has previously completed Phase I Environmental Site Assessments for each of these sites, with the exception of Campo Vaquero (Cow Camp), the lemon groves and field, the residential units, and the northern portion (vacant property). A brief summary of each ESA is included below in section 4.6.

3.2 Topography

The site is located on a southward-sloping terrace, just north of San Juan Creek. Site elevations range from approximately 250 feet above mean sea level (amsl) along the southern margin of the subject property, to approximately 750 feet amsl along the northern margin. The average topographic gradient in the site vicinity is to the south/southeast at approximately 0.13 feet per foot.

3.3 Regional and Local Geology

The site is located in an alluvial valley (San Juan Creek) on the southwestern slopes of the Santa Ana Mountains (Norris and Webb, 1990). The Santa Ana Mountains form the northwest margin of the Peninsular Ranges Geomorphic Province, and are comprised principally of granitic, metavolcanic, and sedimentary rocks of Jurassic to Pliocene age. The mountains are the result of relatively slow, late-Quaternary uplift which has shaped the range into a dissected horst block.

Sedimentary deposits in the San Juan Creek area are a homoclinal sequence of marine and nonmarine formations including the Pliocene Capistrano and Monterey Formations, the Miocene Topanga Formation, the Eocene Sespe and Santiago Formations, the Paleocene Silverado Formation, and the Upper Cretaceous Williams and Ladd Formations. These deposits lie unconformably upon the older metamorphic and volcanic rocks, including the Jurassic Santiago Peak Volcanics and the Bedford Canyon Formation. Quaternary

alluvial soils, derived primarily from weathering of the Santa Ana Mountains, form the gently sloping river terraces in the site vicinity.

Soils in the southern portion of the site, along the creek, have been identified by the United States Department of Agriculture - National Resource Conservation Service as belonging to the Modjeska, Myford, and Riverwash associations (USDA, 1978). Soils in these associations are typically found on broad, gently to moderately-sloping river terraces and consist mainly of well drained gravelly and sandy loams. Soils in the northern portion of the property have been identified by the USDA as belonging to the Cieneba and Corralitos associations. Soils in these associations are typically found on ridgetops and in long narrow areas, respectively. They are somewhat excessively drained sandy loams and loamy sands.

Structural deformation in the vicinity of the site is related to the Elsinore Fault Zone, a major northwest-southeast trending strike-slip fault zone located approximately 15 miles to the northeast. Motion along the Elsinore Fault Zone is primarily right-lateral, although a vertical component may also be present. The Elsinore Fault Zone is considered active, with major ruptures occurring roughly every 250 years at magnitudes of between 6.5 - 7.5 (SCEC, 1998). Other major faults in the vicinity of the site include the Cristianitos Fault (just west of the site), the Mission Viejo Fault (east of the site), and the Newport Inglewood Fault (southwest of the site).

3.4 Regional and Local Hydrogeology

According to the Basin Plan published by the San Diego Regional Water Quality Control Board (SDRWQCB, 1994), the northern portion of the subject property lies within the Gobernadora Hydrologic Subarea of the San Juan Hydrologic Unit and the southern portion of the subject property lies within the Middle San Juan Hydrologic Subarea of the San Juan Hydrologic Unit. In general, groundwater in this area has been designated as beneficial for domestic/municipal, agricultural, and industrial uses. Groundwater levels in the vicinity of the site are seasonally variable, but generally occur at between 10 and 100 feet below ground surface (Rancho Mission Viejo personnel, personal communication).

The Middle San Juan Hydrologic Subarea is located within the San Juan Creek watershed. San Juan Creek (immediately south of the site), Trampas Canyon (southeast of the site), and Canada Gobernadora (west of the site) are the major drainages within this watershed. According to the SDRWQCB, the drainages within this watershed are exempt from municipal use, but have been designated as beneficial for agricultural, industrial, warm water habitat, cold water habitat, wildlife habitat, and recreational 1 and 2.

The Gobernadora Hydrologic Subarea is located within the San Juan Creek watershed. San Juan Creek (immediately south of the site), Canada Chiquita (west of the site), and Canada Gobernadora (west of the site) are the major drainages within this watershed. According to the SDRWQCB, the drainages within this watershed are exempt from municipal use, but have been designated as beneficial for agricultural, industrial, warm water habitat, cold water habitat, wildlife habitat, and recreational 1 and 2.

4.0 SITE BACKGROUND

4.1 Site Ownership

Information regarding site ownership was provided by Rancho Mission Viejo. The current owner is listed as the DMB San Juan Investment North, LLC. The owners address is listed as PO Box 9, San Juan Capistrano, California, 92693.

4.2 Site History

EEI reviewed available information sources to evaluate historic land use in and around the property. Aerial photographs, United States Geological Survey maps, Sanborn Maps, City Directories and other sources were researched.

4.2.1 Sanborn Maps

EEI researched available Sanborn Fire Insurance Maps of the subject site. Sanborn Maps provide detailed information on site structures, uses, and occupancies and were typically utilized by insurance companies to evaluate potential fire risk. Based on EEI's review, no Sanborn Fire Insurance Maps are available for the area surrounding the subject site, indicating little commercial development prior to 1950.

4.2.2 Aerial Photograph Review

Aerial photographs were reviewed to identify historical land development and any uses which may have impacted the site. Photographs dating from 1952 to 1999 were reviewed at Continental Aerial Photo in Los Alamitos, California. In addition, EEI reviewed an aerial photograph dating from 2002 (EDAW). **Table 1** summarizes the results of the aerial photograph review. A copy of a 2000 aerial photograph is included in **Figure 3**.

TABLE 1
Summary of Aerial Photograph Review

Year	Photo ID	Comments
1952	AXK-5K-146 [(1)]	Six structures were noted along San Juan Creek in the southern portion of the subject property. A residential structure and trailer were noted in the present-day O'Connell area. The cow field south of the present maintenance area was noted, although the maintenance area was noted as vacant. No other structures were noted on the subject property, and the remainder of the property was noted as vacant.
1953	AXK-5K-146 [(1)]	It appeared that small ponds were located in the present-day Color Spot Nursery area. No other changes were noted since the previous photograph.
1959	261 9-31-49 [(1)]	No pertinent changes were noted since the previous photograph.
1967	2-151 [(1)]	CalMat was noted in the southeast corner (on present CPC, Cemex, and Solag lease areas), and two terraces north of CalMat were farmed. Several large ponds were noted between CalMat and San Juan Creek. Houses (in their present configuration) were present along the ridge overlooking cow camp. Three barns were noted along the cow camp entrance road (two that are present today and one in the cow field). The large barn and corrals were noted in the southwest corner of the property, in their current configuration. Two medium sized structures were noted in the maintenance area. A residence and trailer were still noted in the O'Connell area. The canyons along the western margin were noted as cleared and possibly cultivated. The property adjacent to the west was cultivated. All other areas were vacant and covered with thick brush.
1973	132-12-17 [(1)]	Color Spot Nursery area was cleared but not cultivated. The field in the southwest corner was cultivated.
1975	157-13-22 [(1)]	Color Spot Nursery was partially present. The maintenance area in cow camp was occupied by two large barns, and the area south (the cow field) was cultivated. The houses in the western portion of cow camp were present in their current configurations. No other changes were noted since the previous photograph.
1983	218-14-24/ 14-25 [(1)]	A small portion of land in northern area is cleared with a few small structures, possibly vehicles. Western canyons were cleared and cultivated. Cow camp was noted in its current configuration with the exception of two medium-sized structures that were present along the access road from Ortega Highway. CalMat was noted to occupy the southeast portion, including the area currently occupied by Solag, Cemex, and CPC. Olsen Pavingstone area was vacant and covered with thick vegetation. The current Ewles area was occupied by roads, and otherwise vacant. The property occupied by St. Augustin's was cultivated. No other pertinent changes were noted since the previous photograph
1987	F290/F277 [(1)]	CalMat was noted to occupy the Olsen lease area. Terraces north of CalMat and east of Color Spot were cultivated, as well as the field south of the cow camp maintenance area. Western canyons were cleared and cultivated, and the adjacent property to the west was cultivated. No other pertinent changes were noted since the previous photograph.
1993	C90-5-149 [(1)]	Cow camp appears in its current configuration. The orchards east of Color Spot Nursery were cleared but not cultivated. The lease areas of Olsen and Ewles were occupied by their current occupants. The Solag, Cemex, and CPC lease areas were occupied by CPC. No other pertinent changes were noted since the previous photograph.
1997	C117-42-40 [(1)]	The Cemex and Solag lease areas were noted in their present configurations. The western margin and some canyons were cleared and possibly cultivated. The northern portion remained vacant. St. Augustine's area was cleared and vacant. The O'Connell storage yard was vacant, with the adjacent trailer and residence present.
1999	C136-42-82 [(1)]	The St. Augustine's site was noted in its current configuration. The O'Connell storage yard was noted, however, no fence was noted. No other pertinent changes were noted since the previous photograph.
2002	EDAW [(2)]	The subject property was noted in its current configuration. No pertinent changes were noted since the previous photograph.

[(1)] Aerial Photograph viewed at Continental Aerial Photographs, Los Alamitos, California
[(2)] Aerial Photograph obtained from EDAW

4.2.3 Historic Maps

EEI reviewed topographic maps dating from 1942 to1988 at the University of California at Santa Barbara, Map and Imagery Laboratory. The 1942 map was published by the United States Army Corps of Engineers. The 1948, 1968, 1975, 1980, 1982, and 1988 maps were published by the United States Geological Survey.

The 1942 map notes the presence of dirt roads along the western and eastern margins and through the center of the property. There is no indication of development on the property. No other pertinent items were noted.

No pertinent changes were noted on the 1948 map.

The 1968 map notes the presence of mining operations in the southeast portion, and a gravel pit along San Juan Creek. Two water tanks and approximately thirty structures were noted along San Juan Creek Haul Road (the southern margin of the property). No other pertinent items were noted.

No pertinent changes were noted on the 1975 map.

The 1980 map notes the presence of two large structures and two rows (dirt roads) in the cultivation area of Color Spot Nursery. No other pertinent changes were noted.

The 1982 noted the presence of approximately ten more small structures on the subject property along southern margin and two small structures north of Color Spot Nursery. Four rows (dirt roads) are noted across Color Spot Nursery. No other pertinent changes were noted.

The 1988 map notes the presence of three more small structures in Color Spot Nursery property. No other pertinent changes were noted.

4.2.4 City/County Directories

EEI reviewed available Criss Cross and Haines City/County Directories for Orange County at the Main Library in Santa Ana, California. Within the subject property there are at least 17 addresses along Ortega Highway: 31101, 31121, 31151, 31181, 31221, 31241, 31261, 31263, 31265, 31381, 31471, 31511, 31601, 31641, 31821, 31825, and 32501. Most of the addresses associated with the subject property were either not listed in the directories reviewed by EEI, or were residential listings. **Table 2** summarizes the information reviewed in the directories for the non-residential addresses.

TABLE 2
Site Tenants/Occupants

Year	Subject Property Addresses - Ortega Highway					
	31101	**31151**	**31511**	**31641**	**31471**	**32501**
1952	No Listing	No Listing	No Listing	No Listing	No Listing	No Listing
1972	No Listing	No Listing	Consolidated Rock Products, Griffith Company	No Listing	Highland Ranch	American Cement Corp
1976	No Listing	Malagon Efren	Conrock Co. Griffith Co.	No Listing	No Listing	American Cement Corp
1980	Oshita Michael	Malagon Efren Orozco Felipe	Conrock Co. Huntmix Inc.	No Listing	Grimmway Farms	American Cement Corp
1985	Axton EDW	Malagon Efren	Huntmix Inc.	No Listing	Kotake Bros	No Listing
1990	Lenz Paul	Malagon Efren	Ewles Materials Olsen Pavingstone	No Listing	No Listing	No Listing
1995	No Listing	Malagon Efren	Catalina Pacific Concrete Ewles Materials Olsen Pavingstone	No Listing	No Listing	No Listing
2002	No Listing	Crosswaite Angel	Bestone Interlock Constr., Ewles Materials, Olsen Pavingstone	Solag Disposal Co	No Listing	No Listing

4.2.5 Orange County Building and Safety Department Files

EEI reviewed files at the Orange County Building and Safety Department (OCBSD) regarding historical and present site development. The OCBSD does not issue permits to sites without addresses. Permits were on file for the properties at 31101, 31181, 31221, 31263, and 31265 Ortega Highway. According to OCBSD personnel, the remainder of the subject property addresses did not have files at the OCBSD available for review. The following is a summary of the files reviewed.

A permit was issued for the construction of a greenhouse at 31101 Ortega Highway in October 1973. A permit was issued in June 1965 for the construction of a dwellings with attached garage at 31181 Ortega Highway and 31221 Ortega Highway. A grading permit was issued at 31263 Ortega Highway for Ranch House Sites in May 1985. A grading permit was issued at 31265 Ortega Highway for Ranch House Sites in May and April 1985. In April the permit was issued for 1,900 cubic yards of grading for a single family home. No other pertinent items were noted.

4.3 Regulatory Database Search

EEI reviewed known electronic database listings for possible hazardous waste generating establishments in the vicinity of the site, as well as on sites in the area with known environmental concerns. Facilities were identified by county, state, or federal agencies and either generate, store, or dispose of hazardous materials. The majority of information in this section was obtained from FirstSearch®, an environmental information/database retrieval service. A copy of the FirstSearch® report is provided in **Appendix C**, along with a description of the individual databases. The subject property was not listed in any of the databases reviewed as having environmental concerns. For discussion purposes, the term "non-geocoded" is applied to sites that either have non-existent or incomplete addresses. EEI has attempted to locate these sites, based on the location description provided in the records search. Below is a list of databases that were reviewed in the preparation of this report.

4.3.1 Federal Databases

National Priority List (NPL) (Superfund) - No listings within one mile of the subject site.

Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) - No listings within one-half mile of the subject site.

No Further Remedial Actions Planned (NFRAP) - No listings within one-eighth of a mile of the subject site.

RCRA TSD Facility list (RCRA-D) - No listings within one-half mile of the subject site.

RCRA Corrective action sites (COR) - No listings within one mile of the subject site.

RCRA Generators (RCRA-G) -The Environmental Protection Agency (EPA) regulates generators of hazardous material through the Resource Conservation and Recovery Act (RCRA). All hazardous waste generators are required to notify EPA of their existence by submitting the Federal Notification of Regulated Waste Activity Form (EPA Form 8700-12) or a state equivalent form. Three other non-geocoded sites were identified. Upon further review of readily available resources, EEI determined that these sites are located greater than one-quarter mile from the subject property. Operating permits are not generally considered rational for environmental concern unless a documented release has occurred at the property. Therefore, these sites are not considered environmental concerns at this time.

RCRA No Longer Regulated (NLR) - No listings within one-eighth of a mile of the subject site.

Emergency Response Notification System (ERNS) - Eleven non-geocoded sites were reported. The calls appear to be mostly highway/railway related with none or minor amounts of materials released. Nine spills that were reported were localized to the site reported at. All eleven sites appear to be at least one-eighth of a mile away from the subject site. Therefore, these reports are not considered environmental concerns at this time.

The subject site was not identified by any of the sources listed above as having an environmental concern or operating permit.

4.3.2 State and Regional Databases

Sites that are Contaminated or Potentially Contaminated by Hazardous Wastes (State Sites) - One non-geocoded site was reported. The **Capistrano Unified School District** proposed a school location within one mile of the subject site. The Department of Toxic Substances Control was called to the location for an inspection. No action was needed. Therefore, this site is not considered an environmental concern at this time.

Sites with a record of spills, leaks, investigations, and cleanups (Spills - 1990) - No listings within one-eighth of a mile of the subject site.

Solid Waste Landfills (SWL) - **Solag Disposal** (31641 Ortega Highway, located in the southeast portion of the subject property) was reported on this database. As of March 4, 1999 the site has been closed. Seven other non-geocoded sites were reported. Upon further review of readily available resources, EEI determined that the other reports were greater than one-half mile from the subject site. Therefore, these reports are not considered an environmental concern.

Establishments Issued a Permit to Track Site Status as a hazardous waste generator, gas station, TSD, underground tanks, violations, or unauthorized releases (Permits) - No listings within one mile of the subject site.

Other Unique Databases (Other) - One non-geocoded site was reported. Upon further review of readily available resources, EEI determined that this site is greater than one-eighth of a mile from the subject site. Therefore, this report is not considered an environmental concern.

Permitted Underground/Aboveground Storage Tanks (REG UST/AST) - **Quest Diagnostic** (33608 Ortega Highway, approximately one quarter of a mile east of the subject site) and the **Casper Wilderness Park** (33401 Ortega Highway, approximately one quarter of a mile east of the subject site) are listed as having active underground storage tanks. Four other non-geocoded sites were reported. Upon further review of readily available resources, EEI determined that these sites are located more than one-quarter mile from the subject site. Operating permits are not generally considered rational for environmental concern unless documented releases have occurred at the property. Therefore, these sites are not considered an environmental concern at this time.

Leaking Underground Storage Tanks (Leaking UST): Three sites were reported within one mile of the subject property. **Ford Aerospace** (33600 Ortega Highway, approximately one half mile south of the subject site) reported as gasoline release on January 1, 1965. Reportedly, only the surrounding soil was impacted. The contaminated soil was removed and the case was closed March 19, 1992. The **Los Pinos Forestry Camp** (39251 Ortega Highway, approximately one half mile east of the subject site) reported a gasoline release on August 14, 1992 and a nearby aquifer was reportedly affected. The current status of this report states a preliminary site assessment is underway. Upon further review of readily available resources, EEI determined the third site (non-geocoded) is greater than one-half mile from the subject site. Based on the distance from the subject site (i.e., over one-quarter mile), the position (i.e., downhill/downgradient), and/or status (i.e., pending closure), these sites are not considered as environmental concerns at this time.

Releases into air and surface water (Releases) - Two non-geocoded sites were reported. Upon further review of readily available resources, EEI determined these sites are located more than one mile from the subject site. Therefore, these sites are not considered an environmental concern at this time.

PCB Activity Database System (PADS) - No listings within one mile of the subject site.

Solag Disposal (located in the southeast portion of the subject property) was reported on the SWL database. An operating permit is not considered rationale for further investigation. Therefore, this site is not considered as an environmental concern at this time.

4.4 Regulatory Agency Review

4.4.1 Orange County Fire Authority

EEI contacted the Orange County Fire Authority's (OCFA) office for information regarding hazardous materials storage at the subject site. According to previous assessments of the subject property and recent inquiries to the OCFA, most sites within the subject property do not have an official address or hazardous materials permit file, and are not currently under a regular inspection schedule. The sites currently under routine inspection by OCFA include **Catalina Pacific Concrete** (31511 Ortega Highway), **Cemex/City Concrete** (31511 Ortega Highway), **Color Spot Nursery** (31101 Ortega Highway), **Olsen Pavingstone, Inc.** (31511 Ortega Highway), **St. Augustine's Training Center** (31151 Ortega Highway), **Ewles Materials** (32501 Ortega Highway), **CR&R/Solag Disposal** (31641 Ortega Highway), and **Cow Camp** (31471 Ortega Highway). With the exception of **Cow Camp**, specific information obtained from the OCFD regarding these sites is included within the respective reports.

According to OCFA inspection records, **Cow Camp** currently holds hazardous materials operating permits for flammable compressed gases, oxidizer compressed gas, combustible liquids, welding and cutting operations, and other health hazardous materials. Permits to operate a motor vehicle fuel dispensing stations and flammable/combustible liquid vehicles, equipment, and tanks were also noted. The site is currently permitted to store the following chemicals: acetylene; antifreeze/coolant; diesel fuel; Formula 40R (alkanolamine salts of 2,4,D); motor oil; compressed oxygen; unleaded gasoline; and waste motor oil. There were no indications of code violations, hazardous materials spills or emergency responses in OCFA files. A list of chemicals stored and the maximum daily volume stored onsite is included in **Appendix D**.

The other sites within the subject property currently hold operating permits for the following: flammable/combustible liquid vehicles, equipment, and tanks; liquified petroleum gases; combustible liquids; corrosives; flammable compressed gases; oxidizers; motor vehicle fuel dispensing stations; and other health hazardous materials. The sites are currently permitted to store diesel fuel; propane; gasoline; motor oil; urea; sodium nitrate; ammonium nitrate; potassium chloride; potassium nitrate; phosphoric acid; calcium hydroxide; metaldehyde; and various small quantities of insecticides, fertilizers, herbicides; compressed gas; oxygen gas; acetylene; MT-55 acculube (Gear Lube); transmission oil; antifreeze; plastic gloss brown paint; Tekusolu II parts cleaner; paraffinic and naphtenic hydrocarbons; and engine oil. There were no indications of code violations, hazardous materials spills or emergency responses in the OCFA files.

4.4.2 Orange County Health Care Agency

EEI contacted the Orange County Health Care Agency (OCHCA) Custodian of Records to obtain copies of any Underground Storage Tank (UST) Operating Permits, Leaking Underground Fuel Tank (LUFT) files and/or any Hazardous Waste Permit (Hazmat) files for the various sites within subject property. The information obtained from the OCHCA regarding the sites previously assessed are included with the respective reports. Information regarding the Cow Camp maintenance facility (31471 Ortega Highway) was requested from the OCHCA and additional data was obtained from the Ranch Manager of Rancho Mission Viejo, Mr. Derek Knobel. The following is a summary of the information contained in OCHCA Files and from the information provided by Mr. Knobel.

Cow Camp (located in the southern portion of the subject property) is currently permitted to operate two underground storage tanks (UST): one 10,000-gallon diesel UST and one 500-gallon waste oil UST, both installed in 1988.

Annual UST inspections have occurred irregularly at the site over the past 15 years. The most recent inspection available for review in the OCHCA files was performed in March 2001. The following violations were noted: failure to correct previous violations within 30 days; failure to obtain or show evidence of financial responsibility; failure to annually test and/or submit proof of installation of pipeline leak detectors; failure to annually test certify continuos monitoring device; and the Ronan monitor was showing an alarm in the diesel sump. The inspector noted that the cause of the alarm needed to be investigated and to make any necessary repairs to the tank system. Other past UST inspections have noted such violations as failure to develop leak response plan to remove an unauthorized release from secondary containment and that, according to an employee, the diesel tank had been empty for over a year (2000).

Hazardous waste annual inspections have occurred at the same irregular periods. The most recent inspection report available for review was performed in March 2001. The inspector noted the following waste streams at the site: waste oil (maximum daily storage volume 500-gallons); used oil filters (maximum daily storage volume 200 filters); floor sweep with oil (maximum daily storage volume 60 pounds); spent radiator coolant (maximum daily storage volume 55-gallons); and parts cleaner (maximum daily storage volume 20-gallons). No violations were noted at the site during the inspection.

4.4.3 California Regional Water Quality Control Board

EEI reviewed the Leaking Underground Fuel Tank (LUFT) Database and the Spills, Leaks, Investigations, and Cleanup (SLIC) List, published by the California Regional Water Quality Control Board - San Diego Region (SDRWQCB), to determine whether the site or any nearby property was listed as having a leaking underground tank, spill, leak, or aboveground tank problem. No sites within the subject property were listed on the SDRWQCB databases, with the exception of **Catalina Pacific Concrete (CPC)**, located in the southern margin of the subject property.

CPC was identified as the location of a closed LUFT case. Based on the information reviewed, an unauthorized release of diesel was discovered in February 1990. Only the soil was impacted. The cause of the leak and the source of the leak are unknown. The case received regulatory closure on February 5, 1991. No other pertinent information was noted. The case is discussed in detail in the Phase I ESA completed for the site (EEI, 2002e).

4.4.4 Review of Division of Oil, Gas and Geothermal Resources Files

EEI reviewed information regarding oil production near the site provided by the California Division of Oil, Gas, and Geothermal Resources. Based on file data, one petroleum exploration well (Exxon, "O'Neill Estate") was installed in the central portion of the property in 1959 to a total depth of approximately 4,100 feet, and one petroleum exploration well (Texaco Inc., "O'Neill") was installed south of the subject property, along Ortega Highway, in 1964 to a total depth of approximately 3,730. Both wells are marked as "Plugged and Abandoned - Dry Hole."

4.5 Interview with Key Site Personnel

In January 2000, EEI contacted Jim Hessler, Vice President and General Manager for Color Spot Nursery in San Juan Capistrano, who was interviewed regarding key site information (EEI, 2000). Mr. Hessler indicated that he had been working at the facility for approximately 7 years and was familiar with facility operations. Also present during the interview was Bill Miyashiro, who worked as a foreman at the facility (when owned by Oda Nursery) from approximately 1970 through 1997. These site representatives indicated that pesticides were used and stored on-site and that there were above-ground diesel, gas, and propane tanks on-site. No other items of environmental concern were noted during the interview.

In October 2001, EEI contacted Steve Wright, General Manager for **CR & R**, and interviewed him regarding key site information (EEI, 2002a). Mr. Wright stated that the property was used as a waste management transfer station, and that automotive batteries were stored on-site and disposed of by a recycling company. He also indicated that there were several UST's on-site (diesel, gasoline, and waste oil). No other items of environmental concern were noted during the interview.

In October 2001, EEI contacted Ole Hjorth-Olsen, owner of **Olsen Pavingstone, Inc**, and interviewed him regarding key site information (EEI, 2002d). Mr. Hjorth-Olsen stated that the site was used in the production of pavingstones, and that there was an above-ground diesel tank on-site. No other items of environmental concern were noted during the interview.

In October 2001, EEI contacted Christine Jones, Regional Environmental Manager for **Cemex**, who was interviewed regarding key site information (EEI, 2002b). Ms. Jones stated that the site was used for a Ready Mix concrete facility, and that chemicals such as diesel, cement, oil, and antifreeze were stored and used on-site. Ms. Jones also stated that there were concrete-lines pits for truck wash-out. No other items of environmental concern were noted during the interview.

In October 2001, EEI contacted Larry Ewles, Vice President and site operator of **Ewles Materials**, and interviewed him regarding key site information (EEI, 2002c). Mr. Ewles indicated that he had been on the current site approximately 11 years and was familiar with the site. Mr. Ewles stated that the property was used in recycling concrete and asphalt. He indicated that used oil filter storage and fuel tanks were located on-site. No other items of environmental concern were noted during the interview.

In October 2001, EEI contacted Tina Sentner, Senior Manager of Regulatory Matters for **CPC - North**, and interviewed her regarding key site information (EEI, 2002e). Ms. Sentner stated that the property was used for Ready Mix concrete production, and had previously been used as a rock plant. Ms. Sentner also stated that there was historically a repair shop on-site, and that there were several UST's and AGT's (diesel, waste oil, and motor oil) on the property. No other items of environmental concern were noted during the interview.

In April 2002, EEI contacted Fred Vorhees, Ranch Manager for Rancho Mission Viejo (property owner), who was interviewed regarding key site information regarding the **O'Connell Landscaping** storage yard. Mr. Vorhees indicated that he has been working at the Ranch for approximately 30 years and is familiar with the subject property (EEI, 2002e). Mr. Vorhees stated that there was an above-ground diesel tank on the property. No other items of environmental concern were noted during the interview.

In July 2002, EEI interviewed Mr. Vorhees regarding key site information for **St. Augustine's Training Center** (EEI, 2002g). No items of environmental concern were noted during the interview.

In November 2001, EEI interviewed Mr. Vorhees regarding key site information for **Cellular On Wheels (C.O.W.) Site near Color Spot Nursery** (EEI, 2001). No items of environmental concern were noted during the interview.

In April 2003, EEI contacted Mr. Vorhees regarding key site information for the remainder of the subject property, including the northern area, **Cow Camp**, the areas around cow camp, the orchards, and any other areas within the subject property that had not been previously covered. A list of the questions asked, and a summary of their responses, is included below.

Q: Is the property or any adjoining property used for an industrial or agricultural use?

A: Yes.

Q: To the best of your knowledge, was the property or any adjoining property used for industrial or agricultural purposes in the past?

A: Yes. The western side of the canyon was farmed for peppers, cabbage, and cauliflower. Kotaki used to farm in the southern area until about 1985.

Q: Are you aware of any current or previous uses of the site or adjoining properties which may create an environmental concern?

A: No.

Q: To the best of your knowledge has the property or any adjoining property ever been used as a gasoline station, motor repair facility, commercial printing facility, dry cleaners, photo developing laboratory, junkyard or landfill, or as a waste treatment, storage, disposal, processing or recycling facility?

A: Yes, there is a maintenance shop on site.

Q: Are there currently, or to the best of your knowledge have there been previously, any damaged or discarded automotive or industrial batteries, or pesticides, paints or other chemicals in individual containers of greater than 5 gal (19 L) in volume or 50 gal (190 L) in the aggregate, stored on or used at the property or at the facility?

A: No.

Q: Are there currently, or to the best of your knowledge have there been previously, any industrial drums (typically 55 gal) or sacks of chemicals located on the property or at the facility?

A: Yes, in the maintenance shop area.

Q: Has fill dirt been brought onto the property that may have originated from a contaminated site or that is of an unknown origin?

A: No.

Q: Are there currently, or to the best of your knowledge have there been previously, any pits, ponds, or lagoons located on the property in connection with waste treatment or waste disposal?

A: No.

Q: *Is there currently, or to the best of your knowledge has there been previously, any stained soil on the property?*

A: No.

Q: Are there currently, or to the best of your knowledge have there been previously, any registered or unregistered storage tanks (above or underground) located on the property, aside from the existing aboveground waste oil tank?

A: Yes. There is one 10,000-gallon UST for diesel, and one 500-gallon UST for waste oil outside the Cow Camp shop area. Also, there is a 1,000-gallon gasoline AGT and a 1,000-gallon diesel AGT in the same area. In the mid 1980's a 500-gallon gasoline tank was removed from the area south of the corrals in Cow Camp.

Q: Are there currently, or to the best of your knowledge have there been previously, any vent pipes, fill pipes, or access ways indicating a fill pipe protruding from the ground on the property or adjacent to any structure located on the property?

A: No.

Q: Are there currently, or to the best of your knowledge have there been previously, any flooring, drains, or walls located within the facility that are stained by substances other than water or are emitting foul odors?

A: No.

Q: If the property is served by a private well or non-public water system, have contaminants been identified in the well or system that exceed guidelines applicable to the water system or has the well been designated as contaminated by any government environmental/health agency?

A: No.

Q: Does the owner or occupant of the property have any knowledge of environmental liens or governmental notification relating to past or recurrent violations of environmental laws with respect to the property or any facility located on the property?

A: No.

Q: Has the owner or occupant of the property been informed of the past or current existence of hazardous substances or petroleum products or environmental violations with respect to the property or any facility located on the property?

A: No.

Q: Does the owner or occupant of the property have any knowledge of any environmental site assessment reports prepared for the property or facility that indicated the presence of hazardous substances or petroleum products on, or contamination of, the property or recommended further assessment of the property?

A: No.

Q: Does the owner or occupant of the property know of any past, threatened, or pending lawsuits or administrative proceedings concerning a release or threatened release of any hazardous substance or petroleum products involving the property by any owner or occupant of the property?

A: No.

Q: Does the property discharge waste water on or adjacent to the property other than storm water into a sanitary sewer system?

A: No.

Q: To the best of your knowledge, have any hazardous substances or petroleum products, unidentified waste materials, tires, automotive or industrial batteries or any other waste materials been dumped above grade, buried and/or burned on the property?

A: Yes, we used to bury old equipment just east of the Cow Camp maintenance area.

Q: Is there a transformer, capacitor, or any hydraulic equipment for which there are any records indicating the presence of PCBs?

A: No.

4.6 Previous Environmental Assessments

4.6.1 Phase I Environmental Site Assessment Color Spot Nursery

In March 2000,EEI completed a Phase I ESA for **Color Spot Nursery**, located in the central portion of the subject property north of the Cow Camp area since approximately 1974 (EEI, 2000). The property was described as a commercial nursery which included numerous small to medium sized structures, three lined ponds, an irrigation recovery system, and a water filtration/blending station. The site was not listed on any regulatory database as having an environmental concern or operating permit.

No indications of code violations, hazardous material spills, or other concerns were noted in the Fire Department files. EEI also reviewed files regarding the site with the Orange County Health Care Agency files (OCHCA), and noted that the site has been a hazardous waste generating facility since 1991. Two underground storage tanks (one diesel and one gasoline) were removed from the site in 1989, and no

contamination was reported under the tanks. Only minor violations were noted in the OCHCA inspection reports. No items of concern were noted in the OCHCA files.

During the site visit, surficial oil spills were noted in the shop area, especially in the area of the waste oil AGT. Surface staining was noted in the dispensing areas around two 1,000-gallon AGTs (one diesel and one gasoline). No other evidence of environmental concern was observed at the property during the time of the assessment.

EEI recommended that the areas of surficial petroleum staining near the AGTs be investigated. EEI further noted that irrigation runoff observed leaving the site is considered a discharge, and that the site may be in violation of the Federal Clean Water Act and California Water Code.

4.6.2 Phase I Environmental Site Assessment CR&R/Solag Disposal Company Inc.

In January 2002, EEI completed a Phase I ESA of the **CR&R/Solag Disposal Company Inc.** facility, located in the southeast portion of the subject property since approximately 1996 (EEI, 2002a). Prior to 1996, the site was occupied by an asphalt/cement batch plant from the early 1960's to 1990. The site was described as a waste management facility, including an office building, maintenance shop, fueling station, waste processing unit, and storage units. The site was not listed on any regulatory database as having an environmental concern or operating permit.

No indications of code violations, hazardous material spills, or other concerns were noted in Fire Department files. The site was identified as a hazardous waste generating facility with the OCHCA, and no violations were noted in the most recent inspection report reviewed by EEI.

During the site visit, EEI noted the presence of a hazardous material storage area, several clarifiers, and underground storage tanks. Minor oil staining was noted in the asphalt parking lot. No other evidence of environmental concern was noted during the site visit.

EEI recommended that, while no acute environmental concerns were noted during the ESA, site soil and groundwater sampling in and around the USTs, dispensers, and clarifiers should take place prior to the termination of the existing tenants lease. Several previous environmental assessment reports performed at the site were reviewed by EEI. A complete discussion of these reports is included within the report.

4.6.3 Phase I Environmental Site Assessment Olsen Pavingstone

In January 2002, EEI completed a Phase I ESA of the **Olsen Pavingstone Inc.** facility, located in the southeastern portion of the subject property since at least 1990 (EEI, 2002d). The site was described as a paving stone manufacturing plant, which includes several office trailers, a residential unit, shop area, and storage buildings. The site was not listed on any regulatory database as having an environmental concern or operating permit.

No indications of code violations, hazardous material spills, or other concerns were noted in the Fire Department files. The site was not identified by the OCHCA as having any operating permits, and no files were available regarding the site.

During the site visit, EEI noted the presence of hazardous material storage area, and a 1,000-gallon diesel AGT. No items of concern were noted, and EEI did not recommend any further investigation.

4.6.4 Phase I Environmental Site Assessment Cemex

In January 2002, EEI completed a Phase I ESA of the **Cemex** facility, located in the southeastern portion of the subject property since the mid 1990's (EEI, 2002b). Prior to that, the site was occupied by a sand and gravel mining operation from at least the early-1960's to the early-1990's. The site was described as a concrete batch plant, including an office trailer, maintenance trailer, fueling island, truck washout area, and a storage shed. The site was not listed on any regulatory database as having an environmental concern or operating permit.

No indications of code violations, hazardous material spills, or other concerns were noted in the Fire Department files. No violations or items of environmental concern were noted in the OCHCA files. EEI also reviewed information regarding the site with the California Regional Water Quality Control Board. The site was identified as existing on a larger parcel, which reported a leaking underground fuel tank (LUFT) case in 1990. According to the information reviewed, a diesel release occurred, reportedly impacting the soil only, and the case was closed in 1991.

During the site visit, EEI noted the storage of oil drums, waste oil drums, lubricant containers, and admixture containers. With the exception of minor oil staining, no evidence of environmental concern was noted on the property. EEI recommended that hazardous substances storage and handling practices at the subject property be improved to prevent spills.

4.6.5 Phase I Environmental Site Assessment Ewles Materials

In January 2002, EEI completed a Phase I ESA for the **Ewles Materials** facility, located in the southeastern portion of the subject property since at least 1990 (EEI, 2002c). Prior to the 1990s, the site was vacant. The site was described as a manufacturing and processing plant, which includes an office trailer, employee trailer, storage unit, fuel compound, and wash station. The site was not listed on any regulatory database as having an environmental concern or operating permit, however, a former occupant of the site, **CalMat** was identified as having a closed LUFT case. This is the same LUFT case discussed in section 4.6.4.

The most recent fire department inspection report noted a house keeping violation and a permit related violation, with no specific details. The OCHCA identified the site as a hazardous materials generating facility, and no violations were noted on the most recent inspection report.

During the site visit, EEI noted the presence of a diesel AGT, an oil AGT, a waste oil AGT, several 55-gallon drums of lubricant, hazardous chemical storage, and minor petroleum hydrocarbon stained soil throughout the site. EEI recommended that, prior to the termination of the existing tenant's lease, sampling of near-surface soils in and around the crushing operation and maintenance area should be performed and the samples analyzed for petroleum hydrocarbons, heavy metals, and PAH's.

4.6.6 Phase I Environmental Site Assessment Catalina Pacific Concrete

In February 2002, EEI completed a Phase I ESA of the **Catalina Pacific Concrete (CPC)** facility, located in the southeast portion of the subject property since the 1990's (EEI, 2002e). The site had been occupied by a sand and gravel mining operation from at least the early-1960's to the early-1990's. The majority of the site was occupied by a concrete batch plant, including a truck fueling facility, truck washout area, an office, a scale house, a maintenance shop, storage buildings, various sheds, and trailers. The eastern portion of the site was occupied by Saddleback Materials (office trailer, storage bin, and

materials storage); Solag Disposal (Trash Bin Storage), Chuck Royce Trucking (equipment storage), and Laguna Asphalt Paving (equipment storage).

The site was identified on regulatory databases as holding a permit to operate underground storage tanks. A former occupant of the site, **CalMat**, was identified as having a closed LUFT case (discussed in section 3.6.4). No violations were reported in the Fire Department files. No violations were noted during the most recent OCHCA hazardous waste and underground storage tank site inspection. Soil samples collected during the removal of one 10,000-gallon diesel UST in 1986 reported minor concentrations of total hydrocarbons, and there was no evidence to indicate further action by OCHCA. Soil samples collected during the removal one 5,000-gallon gasoline UST and one 10,000-gallon diesel UST in 1990 reported minor levels of ethylbenzene, toluene, and xylenes, and elevated levels of gasoline range fuel hydrocarbons. However, no evidence to indicate further action by OCHCA was found in the file, and the site was given closure in 1991.

During the site visit, EEI noted the presence of hazardous chemicals, gas, oils, and solvents on the site. EEI recommended that, while no acute environmental concerns were noted during the ESA, site soil and groundwater sampling in and around the USTs, dispensers, and vehicle storage areas should take place prior to the termination of the existing tenants lease. EEI also recommended that the truck washout recycling pond and related chemicals should be dismantled and removed and the pond contents be removed and disposed of prior to termination of the existing tenant's lease, and that a licensed and certified asbestos and lead paint inspector should be contacted prior to demolition or remodeling of site structures. Several previous environmental assessment reports performed at the site were reviewed by EEI. A complete discussion of these reports is included in the report (EEI, 2002e).

4.6.7 Phase I Environmental Site Assessment O'Connell Landscaping

In April 2002, EEI completed a Phase I ESA of the **O'Connell Landscaping** lease, located in the southern portion of the subject property since at least 1999 (EEI, 2002f). Prior to that, the site was predominantly vacant or used for storage. The site was described as a storage yard for O'Connell Landscaping, including several small portable storage structures. The site was not listed on any regulatory database as having an environmental concern or operating permit. There were no files regarding the subject property with either the Fire Department or the OCHCA.

During the site visit, EEI noted the presence of an un-permitted 100-gallon AGT (on a small concrete pad with no secondary containment), as well as waste oil containers, open 5-gallon oil containers, and a 55-gallon drum used for waste oil storage. Evidence of minor chemical storage, waste containers, improper chemical/waste storage and handling, and minor oil staining were noted during the visit.

EEI recommended that the use of the 100-gallon AGT be discontinued until a permit from the Fire Department is obtained; that the tenant contact the Fire Department and OCHCA regarding proper waste storage procedures, and possibly should register as a waste generating facility; and that petroleum-impacted soils noted during the site visit be removed and properly disposed.

4.6.8 Phase I Environmental Site Assessment St. Augustine Training Center

In July 2002, EEI completed a Phase I ESA of the **St. Augustine's Training Center**, located in the southwestern portion of the subject property since 1998 (EEI, 2002g). Prior to 1998, the site was predominantly vacant, although it was farmed for a short period in the mid-1980's. The site was described as a horse training center, including stables, two portable storage trailers, and two residential trailers.

The site was not listed on any regulatory database as having an environmental concern or operating permit. No evidence of environmental concern was noted during the site visit. EEI did not recommend any further action at the site.

4.6.9 Phase I Environmental Site Assessment C.O.W. Site - Colorspot Nursery

In November 2001, EEI completed a Phase I ESA of the Cellular on Wheels (C.O.W.) Site, located near Color Spot Nursery (EEI, 2001). The site was described as currently containing two telecommunications tower and a small concrete structure, which apparently houses support equipment for the towers, and according to ranch personnel has been developed for approximately five years.

The site was not listed on any regulatory database as having an environmental concern or operating permit. No evidence of environmental concern was noted during the site visit. EEI did not recommend any further action at the site.

4.7 Other Environmental Issues

4.7.1 Asbestos Containing Materials

Asbestos is a natural mineral fiber used in the manufacture of a number of different building materials. Asbestos has also been identified as a human carcinogen. Most friable (i.e., those that are easily broken or crushed) asbestos-containing materials (ACM) were banned in building materials by 1978. By 1989, most major manufacturers had voluntarily removed non-friable ACM (i.e., flooring, roofing, and mastics/sealants) from the market. However, these materials were not banned completely.

In October 1995, the Federal Occupational Safety and Health Administration (OSHA) redefined the manner by which building materials are classified in regards to asbestos and the also the way these materials are to be handled. Under this ruling, "thermal system insulation and sprayed-on or troweled on or otherwise applied surfacing materials" applied before 1980 are considered presumed asbestos containing materials (PACM). Other building materials such as " floor or ceiling tiles, siding, roofing, transite panels" (i.e., non-friable) are also considered PACM unless tested.

No ACM was noted in existing structures during the site reconnaissance. However, given that many of the structures were built before 1980, ACM is a potential concern.

4.7.2 Lead-Based Paint

Lead-based paint is identified by OSHA , the Environmental Protection Agency (EPA) and the Department Housing and Urban Development Department (HUD) as being a potential health risk to humans, particularly children, based upon its effects to the central nervous system, kidneys, and bloodstream. The risk of lead-based paint has been classified by HUD based upon the age and condition of the painted surface. This classification includes the following:

- maximum risk is from paint applied before 1950
- a severe risk is present from paint applied before 1960
- a moderate risk is present from paint applied before 1970
- a slight risk is present from paint applied before 1977
- paint applied after 1977 is not expected to contain lead.

Given the age of the site buildings, the presence of lead-based paint is a potential concern.

4.7.3 Radon

Radon is a radioactive gas which has been identified as a human carcinogen. Radon gas is typically associated with fine-grained rock and soil, and results from the radioactive decay of radium. EPA recommends that homeowners in areas with radon screening levels greater than 4 pCi/L (picocurries per liter) conduct mitigation of radon gas to reduce exposure.

Sections 307 and 309 of the Indoor Radon Abatement Act of 1988 (IRAA) directed EPA to list and identify areas of the U.S. with the potential for elevated indoor radon levels. EPA's Map of Radon Zones (EPA-402-R-93-071) assigns each of the 3,141 counties in the U.S. to one of three zones based on radon potential:

- Zone 1 counties have a predicted average indoor radon screening level greater than 4 pCi/L.
- Zone 2 counties have a predicted average indoor radon screening level between 2 and 4 pCi/L.
- Zone 3 counties have a predicted average indoor radon screening level less than 2 pCi/L.

Based on such factors as indoor radon measurements; geology; aerial radioactivity; soil permeability; and foundation types, EPA has identified Orange County as Zone 3 (i.e., low potential for radon gas). Therefore, EEI does not consider radon as a concern at this time.

5.0 SITE RECONNAISSANCE

5.1 Purpose

The purpose of the site reconnaissance was to visually and physically observe the site, site structures, and adjoining properties for conditions indicating an existing release, past release, or threatened release of any hazardous substances or petroleum products into structures of the site, or into soil and/or groundwater beneath the site. This would include any evidence of contamination, distressed vegetation, petroleum-hydrocarbon staining, waste drums, illegal dumping, or improper waste storage/handling.

5.2 Results of Site Reconnaissance

5.2.1 Subject Site

EEI previously conducted site reconnaissances of those sites in the southern portion of the subject property occupied by Color Spot Nursery (EEI, 2000), C.O.W. Site near Color Spot Nursery (EEI, 2001), CR&R/Solag Disposal Company (EEI, 2002a), Olsen Pavingstone (EEI, 2002d), Cemex (EEI, 2002b), Ewles Materials (EEI, 2002c), Catalina Pacific Concrete (North) (EEI, 2002e), O'Connell Landscaping (EEI, 2002f), and St. Augustine's Training Center (EEI, 2002g). The information collected during those site reconnaissances are included within the individual reports, and a brief summary is included above in Section 4.6.

On March 31, 2003, EEI personnel visited the remainder of the subject property, including the Cow Camp area, residential units, lemon groves, and other areas that had not been previously assessed. Photographs 1 through 30 (**Appendix E**) document the site reconnaissance, which is summarized in **Table 3**.

EEI personnel conducted a driving inspection around the perimeter of the subject property, then traversed the site from east to west and north to south. The northern portion of the property is vacant open space, covered predominantly by thick vegetation. The northeastern areas were not accessible due to the poor quality of the access road. San Juan Creek runs just south of the southern margin of the property.

Cow camp includes residences, barns, a maintenance area, pastures, corrals, and open fields. San Juan Creek Haul Road traverses Cow Camp from west to East, and the access road from Ortega Highway traverses the site from north to south. In the eastern portion of Cow Camp (east of the access road), EEI noted one office trailer, a warehouse, two maintenance shops, a storage yard, a fueling station, a heavy equipment storage area, two portable storage units, and a pasture. In the southwestern portion (west of the access road and south of San Juan Creek Haul Road), EEI noted a roping arena, several corrals, two barns, a few open fields, and six residential structures. North of San Juan Creek Haul Road, along the ridge, EEI noted five residences. Two water wells were noted on the property, along the access road from Ortega Highway and along San Juan Creek.

In the Cow Camp maintenance area, the following chemical storage was noted in and around the shop area: approximately 20, 55-gallon drums labeled antifreeze, motor oil, hydraulic fluid, tractor/cat oil, Chevron motor oil, waste coolant, phosphorus acid, and unlabeled (one); several 5-gallon buckets of motor oil and hydraulic oil; used/new tire storage; one 1,000-gallon diesel above ground tank (AGT); one 1,000-gallon gasoline AGT; 275-gallon AGT labeled “omni oil 6E”; one 10,000-gallon diesel underground storage tank (UST); and one 500-gallon waste oil UST. EEI noted oil-stained concrete in and around the shop areas. Two portable storage units were noted in the northern portion of the site. According to Mr. Derek Knobel, Ranch Manager, one storage unit contains mechanical parts, and the other contains various pesticides and fertilizers. According to Mr. Knobel, equipment washing is done at the southern edge of the maintenance shop area, and the run-off drains to the field that lies just south of the shop area.

No other evidence of evidence of contamination, distressed vegetation, petroleum-hydrocarbon staining, waste drums, illegal dumping, or improper waste storage/handling were noted during the site reconnaissance.

5.2.2 Adjacent Properties

Adjacent properties are residential to the north, agricultural to west and east. San Juan Creek and Ortega Highway are present immediately adjacent to the south.

TABLE 3 Summary of Site Reconnaissance		
ITEM	**CONCERNS**	**COMMENTS**
General Housekeeping	No	Facility appears generally well maintained and in good condition.
Surface Spills	Yes	Minor spills noted in shop area.
Stained Soil/pavement	No	Minor staining noted in shop area.
Fill Materials	No	None observed.
Pits/ponds/lagoons	No	None observed.
Surface Impoundments	No	None observed.
AGT's/UST's	Yes	Diesel and Waste Oil UST in shop area. Diesel, gasoline, and waste oil AGTs in shop area.
Distressed Vegetation	No	None observed.
Electrical Substations	No	None observed.
Areas of Dumping	No	None observed.
Pole-mounted Transformers	No	None observed.
Waste/scrap storage	No	In eastern portion of maintenance area.
Chemical use/storage	No	Consistent with facility usage. Chemicals appeared properly labeled and stored.

6.0 CONCLUSIONS/RECOMMENDATIONS

EEI conducted a Phase I Environmental Site Assessment (ESA) at the subject property in March/April 2003. The ESA included a review of regulatory database lists as per ASTM 1527-00. Pursuant to the requirements of Section 65962.5 of the California Government Code, the subject property was not located on the State list of identified hazardous waste and/or hazardous substance sites.

Based on a site reconnaissance, a review of physiographic, historical and regulatory information, and information provided by the property owner, no evidence of *recognized environmental conditions* has been revealed in connection with the subject site, nor any adjacent property, except for the following:

1. Based on conversations with Rancho Mission Viejo personnel , at least one 500-gallon underground fuel tank was removed in the mid 1980's from the **Cow Camp** area. No information was available with the Orange County Health Care Agency regarding the tank removal, or any soil sampling performed. EEI recommends that the exact location of the former UST be identified, and that confirmation soil sampling be performed to determine if any contaminates exist in the tank pit area or in surrounding areas.

2. Based on conversations with Rancho Mission Viejo personnel, the area east of the **Cow Camp** maintenance shop area (currently being used to store equipment) was historically used to bury old equipment and waste scraps. EEI recommends that the exact location of the buried debris be identified

and excavated, and that soil sampling be performed to determine if any contaminates exist in the pit area or in surrounding areas.

3. Two UST's were recently removed from the **Cow Camp** maintenance shop area. The removal was observed by EEI, and conducted under appropriate regulatory guidance. Confirmation soil samples were collected, and the results are pending.

4. Surface stains indicating spillage of gasoline/diesel/motor oil were previously noted on the **Color Spot Nursery** and **O'Connell Landscaping** lease properties. Impacted soils should be excavated, containerized, and disposed of in a permitted facility. Verification sampling should be conducted to verify removal.

5. Minor oil stained pavement was previously noted at the **Solag/CR&R**, **Cemex**, and **Ewles** facilities during the site reconnaissances. However, there appears to be no immediate threat to soil and/or groundwater beneath the subject property. EEI recommends that hazardous substances storage and handling practices at the subject property be improved to prevent spills.

6. While no acute environmental concerns were noted within the **Solag/CR&R**, **Ewles**, and **Catalina Pacific Concrete (CPC)** ESAs, EEI recommends that site sampling take place prior to termination of the existing tenants lease. Sampling should include soils and groundwater in and around any existing UST's, dispensers, clarifiers, crushing operations, and maintenance areas, with analysis for petroleum hydrocarbons, heavy metals, and PAH's.

7. The truck washout recycling pond and related chemicals within the **Catalina Pacific Concrete (CPC)** lease area should be dismantled/removed and the pond contents removed/disposed of prior to termination of the existing tenants lease. All other chemicals related to the current site operations should also be removed from the property and properly disposed of.

8. A licensed/certified asbestos and lead paint inspector should be contacted prior to demolition or remodeling of all site structures built prior to 1980.

9. The above ground gasoline tank previously reported on the **O'Connell Landscaping** lease was installed without fire department review, inspection or permit. As such, the installation is illegal. Use of the tank should be discontinued, and the tank contents removed until a permitted facility can be installed. EEI recommends that the tenant contact Orange County Fire Authority and Orange County Health Care Agency regarding fuel storage requirements.

10. Waste oil at the site were previously observed in open containers on bare ground on the **O'Connell Landscaping** lease. Waste oil should only be stored in appropriate containers with secondary containment. EEI recommends that the tenant contact Orange County Fire Authority and Orange County Health Care Agency regarding proper waste storage procedures. If required, the tenant should register as a waste generating facility.

11. Evidence of past agricultural use has been revealed. If residential or other potentially health-sensitive uses are contemplated (e.g., schools, child care facilities, etc.), EEI recommends that an investigation be conducted to assess the possible presence of residual pesticides in accordance with DTSC's Interim Guidance for Sampling Agricultural Soils dated June 28, 2000.

7.0 REFERENCES

California Division of Mines and Geology, 1973, Geo-Environmental Maps of Orange County, California.

California Division of Mines and Geology, 1994, Fault Activity Map of California and Adjacent Areas.

California Regional Water Quality Control Board - San Diego Region, 1994, Water Quality Control Plan - San Diego Region: California State Water Resources Control Board Publication.

EEI, March 2000, Phase I Environmental Site Assessment - Color Spot Nursery, 31101 Ortega Highway, San Juan Capistrano, California.

EEI, November 2001, Phase I Environmental Site Assessment - C.O.W. Site near Color Spot Nursery, 31101 Ortega Highway, San Juan Capistrano, California.

EEI, January 2002a, Phase I Environmental Site Assessment - CR&R/Solag Disposal Company, Inc., 31641 Ortega Highway, San Juan Capistrano, California.

EEI, January 2002b, Phase I Environmental Site Assessment - Cemex (Formerly City Concrete), 31511 Ortega Highway, San Juan Capistrano, California.

EEI, January 2002c, Phase I Environmental Site Assessment - Ewles Materials, 32501 Ortega Highway, San Juan Capistrano, California.

EEI, January 2002d, Phase I Environmental Site Assessment - Olsen Pavingstone Inc., 31511 Ortega Highway, San Juan Capistrano, California.

EEI, February 2002e, Phase I Environmental Site Assessment - Catalina Pacific Concrete (North), 31511 Ortega Highway, San Juan Capistrano, California.

EEI, April 2002f, Phase I Environmental Site Assessment - O'Connell Landscaping, 31511 Ortega Highway, San Juan Capistrano, California.

EEI, July 2002g, Phase I Environmental Site Assessment - St. Augustine's Training Center, 31151 Ortega Highway, San Juan Capistrano, California.

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EEI

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PHASE I ENVIRONMENTAL SITE ASSESSMENT

PLANNING AREA 4
(EAST ORTEGA)
Ortega Highway at Verdugo Canyon Road
San Juan Capistrano, California

May 1, 2003
(Revised February 2004)

EEI Project No. V030305-38A-PA4

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Phase I Environmental Site Assessment

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Site Location:

PLANNING AREA 4
(EAST ORTEGA)
Ortega Highway at Verdugo Canyon Road
San Juan Capistrano, California

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EEI Project No. V030305-38A-PA4

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1.0 INTRODUCTION

1.1 Purpose

The purpose of this Phase I Environmental Site Assessment (ESA) was to assess the possible presence of *recognized environmental conditions* within the Planning Area Four (East Ortega) portion of Rancho Mission Viejo, located south of the Ortega Highway and Verdugo Canyon Road intersection, approximately five miles east of San Juan Capistrano, California (**Site Location Map, Figure 1**). *Recognized environmental conditions* include those property uses that may indicate the presence or likely presence of an existing, historical, or threatened release of any hazardous substances or petroleum products into structures, soil, and/or groundwater beneath the property. The term *recognized environmental conditions* is not intended to include *de minimus* conditions that generally do not present a material risk of harm to public health or the environment.

This ESA was performed in general conformance with the American Society for Testing and Materials (ASTM) *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process,* designation E1527-00.

1.2 Scope of Services

The scope of services outlined below was performed in accordance with the Agreement for Professional Services dated February 12, 2003 (Proposal 39A), between Morgan Lewis, & Bockius, LLP, and EEI.

- A review of available documents for topographic, geologic, and hydrogeologic data affecting the site.
- A review of available maps, aerial photographs and other documents to estimate historical site usage and development.
- A review of previous investigations conducted by EEI.
- A review of federal, state, county, and city documents concerning hazardous material storage, generation, and disposal, active and inactive landfills, nearby environmental concerns, and associated permits.
- Interviews with individuals having knowledge of the site.
- A site reconnaissance to ascertain the current condition of the site.
- The preparation of this report which presents our findings, conclusions, and recommendations.

1.3 Reliance

This ESA has been prepared for the sole use of Morgan Lewis, & Bockius, LLP, and Rancho Mission Viejo. This assessment should not be relied upon by other parties without the express written consent of EEI, Morgan Lewis, & Bockius, LLP, and Rancho Mission Viejo. Therefore, any use or reliance upon this assessment by a party other than Morgan Lewis, & Bockius, LLP, and Rancho Mission Viejo, shall be solely at the risk of such third party and without legal recourse against EEI, its employees, officers, or directors, regardless of whether the action in which recovery of damages is brought is based upon contract, tort, statute or otherwise.

This assessment should not be interpreted as a statistical evaluation of the site, but is rather intended to provide a preliminary indication of on-site impacts from previous site usage or the release of hazardous materials. If no significant indicators of the presence of hazardous materials are encountered during this search, this does not preclude their presence.

The findings in this report are based upon a review of published geologic and hydrogeologic information, information (both documentary and oral) provided by Rancho Mission Viejo, Orange County Planning/Building and Safety Department, Orange County Fire Authority, Orange County Health Care Agency, Orange County Agricultural Commissioner, First Search (an environmental database retrieval system), various state and federal agencies, and field observations. Some of these data are subject to change over time. Some of these data are based on information not currently observable or measurable, but recorded by documents or orally reported by individuals.

2.0 PROPOSED PROJECT

2.1 Overall Description of Proposed Project

As proposed by Rancho Mission Viejo, the project includes 22,815 acres general planned and zoned for development of up to 14,000 dwelling units in nine planning areas and other uses and open space within four planning areas. Other uses include 91 acres of urban activity center uses, 240 acres of business park uses, 50 acres of neighborhood retail uses, up to four golf courses and approximately 15,576 acres of open space area which includes a proposed 1,034 acre regional park. Within the nine planning areas proposed for development, approximately 7,694 acres would be developed. Ranching and other agricultural activities would also be retained within a portion of the proposed open space area. Infrastructure would be constructed to support all of these uses, including road improvements, utility improvements and schools. The Planning Area Location Map (**Plate 1**) illustrates the boundaries of the proposed project.

2.2 Description of Planning Area

Planning Area Four is located southeast of Ortega Highway. This area is proposed for 216 acres of residential development. The General Plan Land Use designation would be 1B-Suburban Residential. Development proposed would total 150 dwelling units and an overlay zone for a five-acre commercial site with approximately 50,000 square feet of neighborhood center in this planning area. Existing authorized land uses would continue until the commencement of any new proposed land use for the affected areas.

3.0 PHYSIOGRAPHIC SETTING

3.1 Site Description

The subject property is located along Ortega Highway, at Verdugo Canyon road, approximately five miles east of San Juan Capistrano. The property encompasses approximately 1,460 acres, and is located on the lots identified by assessors parcel numbers 125-150-44, -55, -62, -63, -64, -65, and -66 (**Assessors Parcel Map, Appendix A**). Access to the property is through Ortega Highway, Verdugo Canyon Road, and several ranch access roads.

The property is currently occupied by the following: Verdugo Canyon Trailer site, a vacant one-acre site located along Verdugo Canyon Road, east of Ortega Highway; Tree of Life Nursery (33201 Ortega Highway) in the northwest portion, which includes cultivation areas and several structures, including an office building, several green houses, a barn, and various trailers; RJO horse ranch (33101 Ortega Highway) south of the nursery, which includes a barn, grazing land, and two residences; an open field south of RJO and east of Ortega Highway which is used to farm barley; a pump station for the Nichols Institute, maintained by the Santa Margarita Water District; and vacant open space with steep slopes in the eastern portion (**Site Plan, Figure 2**). EEI previously conducted environmental site assessments of Verdugo Canyon Trailer site, Tree of Life, and RJO, and a brief summary of these reports is included below in section 4.6.

The property is bounded by San Juan Creek to the west, vacant/agricultural land and Verdugo Canyon to the north, an access road and vacant land to the east, and vacant land to the south. Ortega Highway traverses the northwest corner of the property. According to the Orange County Planning Department, the site is zoned A-1 (General Agriculture). A copy of the County Zoning Map is included in **Appendix B**.

3.2 Topography

The site is located on a westward-sloping terrace, just east of San Juan Creek. Site elevations range from approximately 330 feet above mean sea level (amsl) along the southwestern margin of the subject property, to approximately 1,000 feet amsl along the eastern margin. The topographic gradient in the site vicinity ranges from 0.12 feet per foot towards the west-northwest to 0.44 feet per foot towards the west. Surface drainage from the site flows west into San Juan Creek, and eventually into the Pacific Ocean, approximately 8 miles to the southwest. Based on the Flood Zone Map published by the Federal Emergency Management Agency (FEMA), the northwestern portion of the site near San Juan Creek lies within a 100-year flood zone. The remainder of the site lies outside of the flood plain.

3.3 Regional and Local Geology

The site is located in an alluvial valley (San Juan Creek) on the southwestern slopes of the Santa Ana Mountains (Norris and Webb, 1990). The Santa Ana Mountains form the northwest margin of the Peninsular Ranges Geomorphic Province, and are comprised principally of granitic, metavolcanic, and sedimentary rocks of Jurassic to Pliocene age. The mountains are the result of relatively slow, late-Quaternary uplift which has shaped the range into a dissected horst block.

Sedimentary deposits in the San Juan Creek area are a homoclinal sequence of marine and nonmarine formations including the Pliocene Capistrano and Monterey Formations, the Miocene Topanga Formation, the Eocene Sespe and Santiago Formations, the Paleocene Silverado Formation, and the Upper Cretaceous Williams and Ladd Formations. These deposits lie unconformably upon the older metamorphic and volcanic rocks, including the Jurassic Santiago Peak Volcanics and the Bedford Canyon Formation. Quaternary

alluvial soils, derived primarily from weathering of the Santa Ana Mountains, form the gently sloping river terraces in the site vicinity.

Soil in the vicinity of the site has been identified by the United States Department of Agriculture - National Resource Conservation Service as belonging predominantly to the sandy loams of the Capistrano and Cieneba associations, and rock outcrops of the Cieneba complex (USDA, 1978). Soils in the Capistrano association are typically well drained, gently to moderately sloping, and form in granitic alluvium of the coastal foothills. They have slow to medium runoff, a moderate erosion hazard, and are found in narrow areas in small valleys. Soils in the Cieneba association consist of excessively drained, moderately steep and form in material weathered from granitic rocks and sandstone. They are found along ridgetops, and are described with rapid runoff and a high erosion hazard.

Structural deformation in the vicinity of the site is related to the Elsinore Fault Zone, a major northwest-southeast trending strike-slip fault zone located approximately 15 miles to the northeast. Motion along the Elsinore Fault Zone is primarily right-lateral, although a vertical component may also be present. The Elsinore Fault Zone is considered active, with major ruptures occurring roughly every 250 years at magnitudes of between 6.5 - 7.5 (SCEC, 1998). Other major faults in the vicinity of the site include the Cristianitos Fault (west of the site), the Mission Viejo Fault (runs along the western margin of the site), and the Newport Inglewood Fault (southwest of the site).

3.4 Regional and Local Hydrogeology

According to the Basin Plan published by the San Diego Regional Water Quality Control Board (SDRWQCB, 1994), the site lies within the Upper San Juan Hydrologic Subarea of the San Juan Hydrologic Unit. In general, groundwater in this area has been designated as beneficial for domestic/municipal, agricultural, and industrial uses. Groundwater levels in the vicinity of the site are seasonally variable, but generally occur at between 10 and 100 feet bgs (Rancho Mission Viejo personnel, personal communication).

The Upper San Juan Hydrologic Subarea is located within the San Juan Creek watershed. San Juan Creek (immediately west of the site), Verdugo Canyon (north of the site), and Bell Canyon (northwest of the site) are the major drainages within this watershed. According to the SDRWQCB, the drainages within this watershed are exempt from municipal use, but have been designated as beneficial for agricultural, industrial, warm water habitat, cold water habitat, wildlife habitat, and recreational 1 and 2.

4.0 SITE BACKGROUND

4.1 Site Ownership

Information regarding site ownership was provided by Rancho Mission Viejo. The current owner is listed as the DMB San Juan Investment North, LLC. The owners address is listed as PO Box 9, San Juan Capistrano, California, 92693.

4.2 Site History

EEI reviewed available information sources to evaluate historic land use in and around the property. United States Geological Survey maps, aerial photographs, Sanborn Maps, City Directories and other sources were researched.

4.2.1 Historic Maps

EEI reviewed topographic maps dating from 1942 to1988 at the University of California at Santa Barbara, Map and Imagery Laboratory. The 1942 map was published by the United States Army Corps of Engineers. The 1948, 1968, 1975, 1980, 1982, and 1988 maps were published by the United States Geological Survey.

The 1942 map notes the presence of San Juan Creek to the west and Ortega Highway traversing across the northwest portion of the property. Verdugo Canyon Road and the access road along the northern margin of the site are present. The map does not indicate any development on the remainder of the site. No other pertinent items were noted.

In addition to the features noted on the 1942 map, the 1948 map notes the presence of a well on the RJO horse ranch property and a small structure along the southern margin. No other pertinent items were noted.

In addition to the features noted on the 1948 map, the 1968 map does not include the small structure along the southern margin.

In addition to the features noted on the 1968 map, the 1974 map noted the presence of three small structures and a small corral on the RJO property. A large unpaved race track was noted on the southern half of the Tree of Life property. No other pertinent items were noted.

In addition to the features noted on the 1974 map, the 1980 map notes the presence of two small structures on the site next to the track, and one small structure along the northern margin. No other pertinent items were noted.

In addition to the features noted on the 1980 map, the 1982 map notes the presence of one structure located in the center of the track, and a water tank in the field south of RJO across Ortega Highway. No other pertinent items were noted.

In addition to the features noted on the 1982 map, the 1988 map notes the presence of one more small structure adjacent to the north of the track. No other pertinent items were noted.

4.2.2 Aerial Photograph Review

Aerial photographs were reviewed to identify historical land development and any uses which may have impacted the site. Photographs dating from 1952 to 1999 were reviewed at Continental Aerial Photo. In addition, an aerial photograph from 2002 (EDAW) was also reviewed. **Table 1** summarizes the results of the aerial photograph review. A copy of a 2000 photograph from GlobeXplorer is provided in **Figure 3**.

TABLE 1
Summary of Aerial Photograph Review

Year	Photo ID	Comments
1952	AXK-4K-45 [(1)]	The northwestern portion of the property (present-day RJO Horse Ranch, Tree of Life Nursery, and field east of Ortega Highway) are cleared. One trailer was noted on the present-day RJO Horse Ranch property. The remainder of the subject property was vacant and covered by thick vegetation.
1959	261-9-32-87 [(1)]	No changes to the subject property were noted since the previous photograph.
1967	2-152 [(1)]	RJO Horse Ranch is present with several residential and barn-like structures; the field area south of RJO and east of Ortega Highway is cleared; the access road along Verdugo Canyon (north of site) is present; and the access road to the southern portion is also present. No other changes were noted since the previous photograph.
1970	61-8-210 [(1)]	No changes to the subject property were noted since the previous photograph.
1973	132-13-14 [(1)]	A corral is located in the southern portion of RJO Horse Ranch and a racetrack is located north of RJO, on the present Tree of Life property. The field area south of RJO and east of Ortega Highway is cultivated with a small structure in the center of the property. A small structure was noted along the southern access road, in addition to a small structure along Verdugo Canyon (northern access road). The remainder of the subject property is covered by thick vegetation.
1977	181-15-13 [(1)]	No changes to the subject property were noted since the previous photograph.
1983	218-15-23 [(1)]	No changes to the subject property were noted since the previous photograph.
1987	F290 [(1)]	Tree of Life Nursery is present in the northern portion of its current lease area; the racetrack is still present on the southern portion. The field area south of RJO is occupied by 3 small structures. No other changes to the subject property were noted since the previous photograph.
1992	C85-16-15 [(1)]	The racetrack south of Tree of Life is no longer present. Tree of Life and RJO Horse Ranch are in their current configuration. No other changes were noted since the previous photograph.
1993	C90-5-150 [(1)]	No changes to the subject property were noted since the previous photograph.
1995	C101-43-33 [(1)]	No changes to the subject property were noted since the previous photograph.
1997	C117-43-44 [(1)]	No changes to the subject property were noted since the previous photograph.
1999	C136-43-149 [(1)]	No changes to the subject property were noted since the previous photograph.
2002	EDAW [(2)]	No changes to the subject property were noted since the previous photograph.

[(1)] Aerial Photograph viewed at Continental Aerial Photographs, Los Alamitos, California

[(2)] Aerial Photograph obtained from EDAW

4.2.3 City/County Directories

EEI reviewed available Criss Cross and Haines City Directories for Orange County. Information is summarized in **Table 2**. According to the city directories reviewed by EEI, there were no listings for the subject property addresses (33201 and 33101 Ortega Highway) prior to 1979.

TABLE 2
Site Tenants/Occupants

Year	Current Site Address	
	33201 Ortega Hwy	33101 Ortega Hwy
2001	Tree of Life Nursery	No Listing
1998	Tree of Life Nursery	Osvaldo L Gonzales
1993	Tree of Life Nursery	Osvaldo L Gonzales
1987	Tree of Life Nursery	Osvaldo L Gonzales Jack Barnes
1986	No Listing	Osvaldo L Gonzales
1982	No Listing	Al Barba Roberto Casillas
1979	No Listing	Roberto Casillas

4.2.4 Sanborn Maps

EEI researched available Sanborn Fire Insurance Maps of the subject site. Sanborn Maps provide detailed information on site structures, uses, and occupancies and were typically utilized by insurance companies to evaluate potential fire risk. Based on EEI's review, no Sanborn Fire Insurance Maps are available for the area surrounding the subject site, indicating little commercial development prior to 1950.

4.2.5 Orange County Building and Safety Department Files

EEI contacted the Orange County Building and Safety Department for information related to development of the subject property. EEI was able to review one building permit (for an 1800-square foot storage building) and one certificate of occupancy, both issued to the tenant of 33201 Ortega Highway, Tree of Life Nursery, in December 1985. No permits were available for the other subject property address, and no other pertinent information was noted.

4.3 Regulatory Database Search

EEI reviewed known electronic database listings for possible hazardous waste generating establishments in the vicinity of the site, as well as on sites in the area with known environmental concerns. Facilities were identified by county, state, or federal agencies and either generate, store, or dispose of hazardous materials. The majority of information in this section was obtained from FirstSearch®, an environmental information/database retrieval service. A copy of the FirstSearch® report is provided in **Appendix C**, along with a description of the individual databases. The subject property was not listed in any of the databases reviewed as having environmental concerns. For discussion purposes, the term "non-geocoded" is applied to sites that either have non-existent or incomplete addresses. EEI has attempted to locate these sites, based on the location description provided in the records search. Below is a list of databases that were reviewed in the preparation of this report.

4.3.1 Federal Databases

National Priority List (NPL) (Superfund) - No sites reported within one mile of the subject site.

Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) - No sites reported within one mile of the subject site.

No Further Remedial Actions Planned (NFRAP) - No sites reported within one mile of the subject site.

RCRA TSD Facility list (RCRA-D) - No sites reported within one mile of the subject site.

RCRA Corrective action sites (COR) - No sites reported within one mile of the subject site.

RCRA Generators (RCRA-G) -The Environmental Protection Agency (EPA) regulates generators of hazardous material through the Resource Conservation and Recovery Act (RCRA). All hazardous waste generators are required to notify EPA of their existence by submitting the Federal Notification of Regulated Waste Activity Form (EPA Form 8700-12) or a state equivalent form. The first listing, **Ortega Rock Quarry** (33977 Ortega Highway)**,** is located approximately one-third of a mile from the subject site and is listed as a small quantity generator (generates 100-1000 kg a month of hazardous waste). **Nichols Institute**, a medical laboratory (33608 Ortega Highway, greater than one-half mile north of the subject property) is a large quantity generator (generates more than 1000kg/month of hazardous waste). **Ford Motor Company** (33600 Ortega Highway, greater than one-half mile south east of the subject property) is no longer an active site. Operating permits are not generally considered rational for environmental concern unless a documented release has occurred at the property. Therefore, these sites are not considered environmental concerns at this time.

RCRA No Longer Regulated (NLR) - One listing was reported three-quarters of a mile from the subject site. **Loral Aeronutronic** (33600 Ortega Highway) is no longer an active site. Therefore, this site is not considered environmental concerns at this time.

Emergency Response Notification System (ERNS) - Two sites were reported. **Nichols Institute** is reported on the database, however the status of this incident is unknown. One non-geocoded site reported a 5 gallon illegal dumping on May 10, 1990 of liquid caustic soda and reportedly affected the land on the site. Due to the lack of information provided (i.e., site location not provided), these sites are not considered environmental concerns at this time.

The subject site was not identified by any of the sources listed above as having an environmental concern or operating permit.

4.3.2 State and Regional Databases

Sites that are Contaminated or Potentially Contaminated by Hazardous Wastes (State Sites) - No sites reported within one mile of the subject site.

Sites with a record of spills, leaks, investigations, and cleanups (Spills - 1990) - No sites reported within one mile of the subject site.

Solid Waste Landfills (SWL) - No sites reported within one mile of the subject site.

Establishments Issued a Permit to Track Site Status as a hazardous waste generator, gas station, TSD, underground tanks, violations, or unauthorized releases (Permits) - No sites reported within one mile of the subject site.

Other Unique Databases (Other) - Two sites was reported within one mile of the subject property: **The Los Pinos Forestry Camp** (39251 Ortega Highway, approximately one-third mile from the subject site) and **Ford Aerospace Aeroneutronic Division** (33600 Ortega Highway, approximately three-quarter miles from the subject site). These sites are not considered as environmental concerns at this time, and are discussed below in the LUST section.

Permitted Underground/Aboveground Storage Tanks (REG UST/AST) - Eight sites are listed in this database. **Ortega Rock Quarry** (33977 Ortega Highway), **Nichols Institute** (33608 Ortega Highway), and **Quest Diagnostics** (33608 Ortega Highway) are included in this list. The other sites are located greater than one mile from the subject site. Operating permits are not generally considered rational for environmental concern unless documented releases have occurred at the property. Therefore, these sites are not considered an environmental concern at this time.

Leaking Underground Storage Tanks (LUST): Two sites are listed on this database. **The Los Pinos Forestry Camp** (39251 Ortega Highway, approximately one-third mile from the subject site) discovered a gasoline tank leak which was reported on August 14, 1992. The nearby aquifer was affected and has preliminary site assessment status. **Ford Aerospace Aeronutronic Division** (33600 Ortega Highway, approximately three-quarter miles from the subject site) reported a tank leak January 1, 1965. This case was closed on March 19, 1992. Due to the length of time elapsed in both cases, these sites are not considered an environmental concern at this time.

Releases into air and surface water (Releases) - One site is listed on this database. On February 4, 1999, **Santa Margarita Water** (33608 Ortega Highway, approximately three-quarter miles from the subject site) had an industrial plant pump failure which resulted in 55,100 gallons of domestic and reclaimed water released. This action resulted in a pond overflow. The current status is unknown, however due to the distance to our subject site (over one-half mile from subject site), this site is not considered an environmental concern at this time.

PCB Activity Database System (PADS) - **Ford Aerospace Aeronutronic Division** (approximately three-quarter miles away from the subject site), is listed on this database. Operating permits are not generally considered rational for environmental concern unless documented releases have occurred at the property. Therefore, these sites are not considered an environmental concern at this time

The subject site was not listed in any of the databases above.

4.4 Regulatory Agency Review

4.4.1 Orange County Fire Authority

EEI contacted the Orange County Fire Authority during previous environmental site assessments at the subject property. At that time, EEI obtained permits regarding hazardous material storage at the subject property, issued by the Fire Department. According to these records, the subject property currently holds operating permits for a motor vehicle fuel dispensing station, as well as a permit to operate flammable/combustible liquid vehicles, equipment, tanks, and plant. No other site within the subject property has been assigned an address, therefore, no files were available at the Fire Department. No other pertinent information was available.

4.4.2 Orange County Health Care Agency

EEI reviewed Orange County Health Care Agency (OCHCA) databases including Leaking Underground Storage Tank (LUST) sites, Underground Storage Tank (UST) Facilities, Non-petroleum Underground Tanks, Hazardous Waste Generators (HWG) and Land Fill Sites, to determine if the subject site or any properties within the site vicinity were listed as having an environmental concern. Neither the subject site nor any adjacent properties were listed on any of the databases researched.

4.4.3 California Regional Water Quality Control Board

EEI contacted the California Regional Water Quality Control Board - San Diego Region (SDRWQCB) to determine whether the site or any nearby property was listed as having a leaking underground tank, spill, leak, or aboveground tank problem. In addition, EEI reviewed the online database GeoTracker, maintained by the SDRWQCB, for listings in the site vicinity regarding Leaking Underground Storage Tank (LUST) cases. There were no listings for the subject site nor any adjacent property.

4.4.4 Review of Division of Oil, Gas and Geothermal Resources Files

EEI reviewed information regarding oil production near the site provided by the California Division of Oil, Gas, and Geothermal Resources. Based on file data, one exploratory well was drilled in 1964 to 3,730 feet adjacent to the subject property to the southwest. The well is listed as an abandoned plugged hole (no production).

4.5 Interview with Key Site Personnel

EEI provided Mike Evans, President of Tree of Life Nursery, with a Phase I Environmental Assessment Questionnaire during the April 2002 Phase I Environmental Site Assessment of the site (EEI, 2002a). No items of concern were noted on the questionnaire.

In April 2002, EEI contacted Mr. Fred Vorhees, Ranch Manager for Rancho Mission Viejo (property owner) for information regarding RJO Horse Ranch (EEI, 2002b). Mr. Vorhees indicated that he has been working at the Ranch for approximately 30 years and is familiar with the subject property. No items of concern were noted during the interview.

In April 2002, EEI contacted Mr. Vorhees regarding key site information for Verdugo Canyon Trailer site. No items of concern were noted during the interview.

In April 2003, EEI contacted Mr. Vorhees for information regarding the remainder of the subject property, the portion east of Ortega Highway.

Q: Is the property or any adjoining property used for an industrial or agricultural use?

A: Yes. The field across Ortega Highway from RJO is used to farm barley.

Q: To the best of your knowledge, was the property or any adjoining property used for industrial or agricultural purposes in the past?

A: Yes, that field has been farmed for awhile.

Q: Are you aware of any current or previous uses of the site or adjoining properties which may create an environmental concern?

A: No.

Q: To the best of your knowledge has the property or any adjoining property ever been used as a gasoline station, motor repair facility, commercial printing facility, dry cleaners, photo developing laboratory, junkyard or landfill, or as a waste treatment, storage, disposal, processing or recycling facility?

A: No.

Q: Are there currently, or to the best of your knowledge have there been previously, any damaged or discarded automotive or industrial batteries, or pesticides, paints or other chemicals in individual containers of greater than 5 gal (19 L) in volume or 50 gal (190 L) in the aggregate, stored on or used at the property or at the facility?

A: No.

Q: Are there currently, or to the best of your knowledge have there been previously, any industrial drums (typically 55 gal) or sacks of chemicals located on the property or at the facility?

A: No.

Q: Has fill dirt been brought onto the property that may have originated from a contaminated site or that is of an unknown origin?

A: No.

Q: Are there currently, or to the best of your knowledge have there been previously, any pits, ponds, or lagoons located on the property in connection with waste treatment or waste disposal?

A: No.

Q: *Is there currently, or to the best of your knowledge has there been previously, any stained soil on the property?*

A: No.

Q: Are there currently, or to the best of your knowledge have there been previously, any registered or unregistered storage tanks (above or underground) located on the property, aside from the existing aboveground waste oil tank?

A: No.

Q: Are there currently, or to the best of your knowledge have there been previously, any vent pipes, fill pipes, or access ways indicating a fill pipe protruding from the ground on the property or adjacent to any structure located on the property?

A: No.

Q: Are there currently, or to the best of your knowledge have there been previously, any flooring, drains, or walls located within the facility that are stained by substances other than water or are emitting foul odors?

A: No.

Q: If the property is served by a private well or non-public water system, have contaminants been identified in the well or system that exceed guidelines applicable to the water system or has the well been designated as contaminated by any government environmental/health agency?

A: No.

Q: Does the owner or occupant of the property have any knowledge of environmental liens or governmental notification relating to past or recurrent violations of environmental laws with respect to the property or any facility located on the property?

A: No.

Q: Has the owner or occupant of the property been informed of the past or current existence of hazardous substances or petroleum products or environmental violations with respect to the property or any facility located on the property?

A: No.

Q: Does the owner or occupant of the property have any knowledge of any environmental site assessment reports prepared for the property or facility that indicated the presence of hazardous substances or petroleum products on, or contamination of, the property or recommended further assessment of the property?

A: No.

Q: Does the owner or occupant of the property know of any past, threatened, or pending lawsuits or administrative proceedings concerning a release or threatened release of any hazardous substance or petroleum products involving the property by any owner or occupant of the property?

A: No.

Q: Does the property discharge waste water on or adjacent to the property other than storm water into a sanitary sewer system?

A: No.

Q: To the best of your knowledge, have any hazardous substances or petroleum products, unidentified waste materials, tires, automotive or industrial batteries or any other waste materials been dumped above grade, buried and/or burned on the property?

A: No.

Q: Is there a transformer, capacitor, or any hydraulic equipment for which there are any records indicating the presence of PCBs?

A: No.

4.6 Previous Assessment

4.6.1 Phase I Environmental Site Assessment Tree of Life Nursery

In April 2002, EEI completed a Phase I environmental site assessment of the property occupied by the Tree of Life Nursery, located along Ortega Highway in the northwest corner of the subject property (EEI, 2002a). According to the report, the nursery includes cultivation areas, an office building, two greenhouses, a workshop shed, a barn, various trailers, and a vacant field of approximately fifteen acres. The site was not listed on any regulatory database as having an environmental concern or operating permit. During the site reconnaissance, hazardous substances/waste were noted in and around the shop area, including small quantities of pesticides, herbicides, fertilizers, new and used oil, diesel, gasoline, antifreeze, and vehicle batteries. Overall housekeeping was good, and storage containers appeared properly labeled and in good condition, with the exception of several small gasoline containers that were stored on unpaved portions of the shop floor. One 500-gallon above-ground diesel tank and one 250-gallon AGT containing diesel were noted on the property, both of which were within secondary containment. No spills were noted on the property during the site visit. No evidence of environmental concern was observed at the property during the time of the assessment, and EEI did not recommended any additional investigations of the site.

4.6.2 Phase I Environmental Site Assessment RJO Horse Ranch

In April 2002, EEI completed a Phase I environmental site assessment of the property occupied by the RJO Horse Ranch, located along Ortega Highway in the northwest corner of the subject property (EEI, 2002b). According to the report, the ranch includes two barns, a grazing area, a corral, and two residential units. The site was not listed on any regulatory database as having an environmental concern or operating permit. No evidence of environmental concern was observed at the property during the time of the assessment, and EEI did not recommended any additional investigations of the site.

4.6.3 Phase I Environmental Site Assessment Verdugo Canyon Trailer Site

In April 2002, EEI completed a Phase I ESA of the Verdugo Canyon Trailer Site, located in the northern portion of the subject property, along Verdugo Canyon Road (EEI, 2002c). The site is currently vacant, however, two residential trailers were located on the property from approximately 1970 to 1985. Prior to 1970, the site was predominantly vacant.

The site was not listed on any regulatory database as having an environmental concern or operating permit. No evidence of environmental concern was noted during the site visit. EEI did not recommend any further action at the site.

4.7 Other Environmental Issues

4.7.1 Asbestos Containing Materials

Asbestos is a natural mineral fiber used in the manufacture of a number of different building materials. Asbestos has also been identified as a human carcinogen. Most friable (i.e., those that are easily broken or crushed) asbestos-containing materials (ACM) were banned in building materials by 1978. By 1989, most major manufacturers had voluntarily removed non-friable ACM (i.e., flooring, roofing, and mastics/sealants) from the market. However, these materials were not banned completely.

In October 1995, the Federal Occupational Safety and Health Administration (OSHA) redefined the manner by which building materials are classified in regards to asbestos and the also the way these materials are to be handled. Under this ruling, "thermal system insulation and sprayed-on or troweled on or otherwise applied surfacing materials" applied before 1980 are considered presumed asbestos containing materials (PACM). Other building materials such as " floor or ceiling tiles, siding, roofing, transite panels" (i.e., non-friable) are also considered PACM unless tested.

An ACM survey was not included as a part of this ESA. However, based on the date of construction of several of the on-site structures (i.e., pre-1980), the presence of ACM is considered likely. EEI recommends that a certified asbestos consultant be contacted prior to any demolition of remodeling of existing structures.

4.7.2 Lead-Based Paint

Lead-based paint is identified by OSHA , the Environmental Protection Agency (EPA) and the Department Housing and Urban Development Department (HUD) as being a potential health risk to humans, particularly children, based upon its effects to the central nervous system, kidneys, and bloodstream. The risk of lead-based paint has been classified by HUD based upon the age and condition of the painted surface. This classification includes the following:

- maximum risk is from paint applied before 1950
- a severe risk is present from paint applied before 1960
- a moderate risk is present from paint applied before 1970
- a slight risk is present from paint applied before 1977
- paint applied after 1977 is not expected to contain lead.

A lead-based paint survey was not included as part of this ESA. However, based on the date of construction of several of the on-site structures (i.e., prior to 1970), the presence of lead-based paint is considered likely. EEI recommends that a certified Lead Inspector/Assessor be contacted prior to any demolition of remodeling of existing structures.

4.7.3 Radon

Radon is a radioactive gas which has been identified as a human carcinogen. Radon gas is typically associated with fine-grained rock and soil, and results from the radioactive decay of radium. EPA recommends that homeowners in areas with radon screening levels greater than 4 pCi/L (picocurries per liter) conduct mitigation of radon gas to reduce exposure.

Sections 307 and 309 of the Indoor Radon Abatement Act of 1988 (IRAA) directed EPA to list and identify areas of the U.S. with the potential for elevated indoor radon levels. EPA's Map of Radon Zones (EPA-402-R-93-071) assigns each of the 3,141 counties in the U.S. to one of three zones based on radon potential:

- Zone 1 counties have a predicted average indoor radon screening level greater than 4 pCi/L.
- Zone 2 counties have a predicted average indoor radon screening level between 2 and 4 pCi/L.
- Zone 3 counties have a predicted average indoor radon screening level less than 2 pCi/L.

Based on such factors as indoor radon measurements; geology; aerial radioactivity; soil permeability; and foundation types, EPA has identified Orange County as Zone 3 (i.e., low potential for radon gas). Therefore, EEI does not consider radon as a concern at this time.

5.0 SITE RECONNAISSANCE

5.1 Purpose

The purpose of the site reconnaissance was to visually and physically observe the site, site structures, and adjoining properties for conditions indicating an existing release, past release, or threatened release of any hazardous substances or petroleum products into structures of the site, or into soil and/or groundwater beneath the site. This would include any evidence of contamination, distressed vegetation, petroleum-hydrocarbon staining, waste drums, illegal dumping, or improper waste storage/handling.

5.2 Results of Site Reconnaissance

5.2.1 Subject Site

EEI conducted a walking reconnaissance of the northwestern portion of the subject property, occupied by Tree of Life Nursery (EEI, 2002a), RJO horse ranch (EEI, 2002b), and Verdugo Canyon Trailer Site (EEI, 2002c) during previous environmental site assessment investigations. The information collected during those site reconnaissances are included within the individual reports, and a brief summary is included above in Section 4.6.

On April 9, 2003, EEI personnel visited the remainder of the subject property located east of Ortega Highway. EEI was accompanied by Rancho Mission Viejo personnel, Mr. Fred Vorhees. Mr. Vorhees provided access to the eastern portion of the property, and answered questions regarding current and historical site usage. Photographs 1 through 16 (**Appendix D**) document the site reconnaissance, which is summarized in **Table 3**.

EEI personnel conducted a driving inspection around the perimeter of the subject property, then traversed the site from east to west and north to south. The property is vacant open space, covered predominantly by thick vegetation. Steep slopes distinguish the eastern portion of the subject property, and a relatively flat, vacant field is located along Ortega Highway, south and east of RJO horse ranch. A ranch access road runs along the northern, eastern, and southern margins of the property, and San Juan Creek runs along the western margin of the property.

Several pole-mounted transformers were noted along Ortega Highway. According to San Diego Gas and Electric Personnel, it is highly unlikely that the transformers serving the facility contain polychlorinated biphenyl (PCB's) at concentration levels requiring special management under the Environmental Protection Agency's rules.

No evidence of evidence of contamination, distressed vegetation, petroleum-hydrocarbon staining, waste drums, illegal dumping, or improper waste storage/handling were noted during the site reconnaissance.

TABLE 3
Summary of Site Reconnaissance

ITEM	CONCERNS	COMMENTS
General Housekeeping	No	Facility appears well maintained and in good condition.
Surface Spills	No	None observed.
Stained Soil/pavement	No	None observed.
Fill Materials	No	None observed.
Pits/ponds/lagoons	No	None observed.
Surface Impoundments	No	None observed.
AGT's/UST's	No	Tree of Life Nursery: 500-gallon AGT containing red diesel and 250-gallon AGT containing diesel.
Distressed Vegetation	No	None observed.
Wetlands	No	West of property, adjacent to San Juan Creek
Electrical Substations	No	None observed.
Areas of Dumping	No	None observed.
Pole-mounted Transformers	No	Several pole-mounted transformers located along Ortega Highway.
Waste/scrap storage	No	Equipment bone yard noted along tree line on western portion of Tree of Life lease property.
Chemical use/storage	No	Consistent with facility usage. Chemicals appeared properly labeled and stored.

5.2.2 Adjacent Properties

Adjacent properties to the north, east, and south are undeveloped. San Juan Creek lies immediately adjacent to the west of the subject property, and Ortega Highway traverses across the northwest corner of the subject property. No evidence of environmental concerns from adjacent properties was noted.

6.0 CONCLUSIONS/RECOMMENDATIONS

EEI conducted a Phase I Environmental Site Assessment (ESA) at the subject property in March/April 2003. The ESA included a review of regulatory database lists as per ASTM 1527-00. Pursuant to the requirements of Section 65962.5 of the California Government Code, the subject property was not located on the State list of identified hazardous waste and/or hazardous substance sites.

Based on a site reconnaissance, a review of physiographic, historical and regulatory information, and information provided by the property owner, no evidence of *recognized environmental conditions* has been revealed in connection with the subject site, nor any adjacent property, except for the following:

1. Evidence of past agricultural use has been revealed. If residential or other potentially health-sensitive uses are contemplated (e.g., schools, child care facilities, etc.), EEI recommends that an investigation be conducted to assess the possible presence of residual pesticides in accordance with DTSC's Interim Guidance for Sampling Agricultural Soils dated June 28, 2000.

7.0 REFERENCES

California Division of Mines and Geology, 1973, Geo-Environmental Maps of Orange County, California.

California Division of Mines and Geology, 1994, Fault Activity Map of California and Adjacent Areas.

California Regional Water Quality Control Board - San Diego Region, 1994, Water Quality Control Plan - San Diego Region: California State Water Resources Control Board Publication.

EEI, April 2002a, Phase I Environmental Site Assessment, Tree of Life Nursery.

EEI, April 2002b, Phase I Environmental Site Assessment RJO Horse Ranch.

EEI, April 2002c, Phase I Environmental Site Assessment, Verdugo Canyon Trailer Site.

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EEI

Expertise . . Service . . *Solutions*

PHASE I ENVIRONMENTAL SITE ASSESSMENT

PLANNING AREA 5
(TRAMPAS/OGLEBAY NORTON)
31302 Ortega Highway
San Juan Capistrano, California

May 15, 2003
(Revised February 2004)

EEI Project No. V030305-38A-PA5

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Phase I Environmental Site Assessment

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Site Location:

PLANNING AREA 5
(TRAMPAS/OGLEBAY NORTON)
31302 Ortega Highway
San Juan Capistrano, California

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EEI Project No. V030305-38A-PA5

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1.0 INTRODUCTION

1.1 Purpose

The purpose of this Phase I Environmental Site Assessment (ESA) was to assess the possible presence of *recognized environmental conditions* at Planning Area 5, including the Trampas/Oglebay Norton Facility, located at 31302 Ortega Highway in San Juan Capistrano, California (**Site Location Map, Figure 1**). *Recognized environmental conditions* include those property uses that may indicate the presence or likely presence of an existing, historical, or threatened release of any hazardous substances or petroleum products into structures, soil, and/or groundwater beneath the property. The term *recognized environmental conditions* is not intended to include *de minimus* conditions that generally do not present a material risk of harm to public health or the environment.

This ESA was performed in general conformance with the American Society for Testing and Materials (ASTM) *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process,* designation E1527-00.

1.2 Scope of Services

The scope of services outlined below was performed in accordance with the Agreement for Professional Services dated March 1, 1999 (Proposal 38A), between Morgan, Lewis & Bockius, LLP, and EEI.

- A review of available documents for topographic, geologic, and hydrogeologic data affecting the site.
- A review of available maps, aerial photographs and other documents to estimate historical site usage and development.
- A review of previous assessment data collected by URS-Greiner Woodward Clyde and Harding Lawson Associated.
- A review of federal, state, county, and city documents concerning hazardous material storage, generation, and disposal, active and inactive landfills, nearby environmental concerns, and associated permits.
- Interviews with individuals having knowledge of the site.
- A site reconnaissance to ascertain the current condition of the site.
- The preparation of this report which presents our findings, conclusions, and recommendations.

1.3 Reliance

This ESA has been prepared for the sole use of Morgan, Lewis & Bockius, LLP, and Rancho Mission Viejo. This assessment should not be relied upon by other parties without the express written consent of EEI, Morgan, Lewis & Bockius, LLP, and Rancho Mission Viejo. Therefore, any use or reliance upon this assessment by a party other than Morgan, Lewis & Bockius, LLP, and Rancho Mission Viejo, shall be solely at the risk of such third party and without legal recourse against EEI, its employees, officers, or directors, regardless of whether the action in which recovery of damages is brought is based upon contract, tort, statute or otherwise.

This assessment should not be interpreted as a statistical evaluation of the site, but is rather intended to provide a preliminary indication of on-site impacts from previous site usage or the release of hazardous materials. If no significant indicators of the presence of hazardous materials are encountered during this search, this does not preclude their presence.

The findings in this report are based upon a review of published geologic and hydrogeologic information, information (both documentary and oral) provided by Rancho Mission Viejo, Orange County Planning/Building and Safety Department, Orange County Fire Authority, Orange County Health Care Agency, Orange County Agricultural Commissioner, First Search (an environmental database retrieval system), various state and federal agencies, and field observations. Some of these data are subject to change over time. Some of these data are based on information not currently observable or measurable, but recorded by documents or orally reported by individuals.

2.0 PROPOSED PROJECT

2.1 Overall Description of Proposed Project

As proposed by Rancho Mission Viejo, the project includes 22,815 acres general planned and zoned for development of up to 14,000 dwelling units in nine planning areas and other uses and open space within four planning areas. Other uses include 91 acres of urban activity center uses, 240 acres of business park uses, 50 acres of neighborhood retail uses, up to four golf courses and approximately 15,576 acres of open space area which includes a proposed 1,034 acre regional park. Within the nine planning areas proposed for development, approximately 7,694 acres would be developed. Ranching and other agricultural activities would also be retained within a portion of the proposed open space area. Infrastructure would be constructed to support all of these uses, including road improvements, utility improvements and schools. The **Planning Area Location Map** is included in **Plate 1**.

2.2 Description of Planning Area

This planning area is located south of Ortega Highway and east of the City of San Juan Capistrano. The project proposes the designation of a total of 1,350 acres of 1B-Suburban Residential. Approximately 2,440 dwelling units are proposed on 1,191 acres for this planning area. This planning area would also have an overlay zone of approximately ten acres for commercial development with a total of 100,000 square feet of neighborhood center. Approximately 159 acres of open space is also planned. Existing authorized land uses would continue until the commencement of any new proposed land use for the affected area.

3.0 PHYSIOGRAPHIC SETTING

3.1 Site Description

The subject property is located in southeastern Orange County, approximately three miles east of San Juan Capistrano. The property occupies the lot identified by the address 31302 Ortega Highway (just south of Ortega Highway and southwest of the intersection of Ortega Highway and Christianitos Road). It encompasses approximately 1,350 acres and is a portion of the parcel identified by assessors parcel number 125-162-05 (**Assessors Parcel Map, Appendix A**).

The property is bounded by Ortega Highway to the north, and by agricultural/pastoral land to the west, east, and south. According to the Orange County Planning Department, the site is zoned SG (Sand and Gravel Extraction). A copy of the County Zoning Map is included in **Appendix B**.

The site is currently occupied by Oglebay Norton Industrial Sands, which operates a sand and gravel surface mining operation at the property. The operation consists of the mining and processing of silica sand for use in building materials such as stucco, grouts, and mortars, and for use in golf courses, playing fields and playgrounds. The facility includes an open pit mine, a large earthen dam and associated reservoir, a processing plant, an office complex, a scale house, a fueling facility, a maintenance shop, several storage buildings, various sheds and trailers, and a number of open vehicle/equipment storage areas.

3.2 Topography

The site is located on a southward-sloping terrace, just north of San Juan Creek. Site elevations range from approximately 300 feet above mean sea level (amsl) along the northern margin of the subject property, to approximately 700 feet amsl along the southern margin. The topographic gradient in the site vicinity is to the north/northeast at approximately 0.07 feet per foot. Surface drainage from the site flows north into Trampas Canyon Creek, then into San Juan Creek, and eventually into the Pacific Ocean, approximately 8 miles to the southwest. Based on the Flood Zone Map published by the Federal Emergency Management Agency (FEMA), the site does not lie within a 100-year flood zone.

3.3 Regional and Local Geology

The site is located in an alluvial valley (Trampas Canyon) on the southwestern slopes of the Santa Ana Mountains (Norris and Webb, 1990). The Santa Ana Mountains form the northwest margin of the Peninsular Ranges Geomorphic Province, and are comprised principally of granitic, metavolcanic, and sedimentary rocks of Jurassic to Pliocene age. The mountains are the result of relatively slow, late-Quaternary uplift which has shaped the range into a dissected horst block.

Sedimentary deposits in the San Juan Creek area are a homoclinal sequence of marine and nonmarine formations including the Pliocene Capistrano and Monterey Formations, the Miocene Topanga Formation, the Eocene Sespe and Santiago Formations, the Paleocene Silverado Formation, and the Upper Cretaceous Williams and Ladd Formations. These deposits lie unconformably upon the older metamorphic and volcanic rocks, including the Jurassic Santiago Peak Volcanics and the Bedford Canyon Formation. Quaternary alluvial soils, derived primarily from weathering of the Santa Ana Mountains, form the gently sloping river terraces in the site vicinity.

Soil in the vicinity of the site has been identified by the United States Department of Agriculture - National Resource Conservation Service as belonging to a number of soil series including Botella loam, Capistrano sandy loam, Cienaba sandy loam, Myford sandy loam, and Riverwash deposits (USDA, 1978). Soils in these series are typically found on alluvial fans, river terraces, and narrow foothill valley, and generally consists of moderate to well drained gravelly and sandy loams.

Structural deformation in the vicinity of the site is related to the Elsinore Fault Zone, a major northwest-southeast trending strike-slip fault zone located approximately 15 miles to the northeast. Motion along the Elsinore Fault Zone is primarily right-lateral, although a vertical component may also be present. The Elsinore Fault Zone is considered active, with major ruptures occurring roughly every 250 years at magnitudes of between 6.5 - 7.5 (SCEC, 1998). Other major faults in the vicinity of the site include the Christianitos Fault (just west of the site), the Mission Viejo Fault (just east of the site) and the Newport Inglewood Fault (southwest of the site; California Division of Mines and Geology, 1973).

3.4 Regional and Local Hydrogeology

According to the California Regional Water Quality Control Board - San Diego Region (SDRWQCB, 1994), the site lies within the Middle San Juan Hydrologic Subarea of the San Juan Hydrologic Unit. In general, groundwater in this area has been designated as beneficial for domestic/municipal, agricultural, and industrial uses. Groundwater levels in the vicinity of the site are seasonally variable, but generally occur at between 10 and 100 feet below ground surface (bgs).

The Middle San Juan Hydrologic Subarea is located within the San Juan Creek watershed. San Juan Creek (immediately north of the site), Trampas Canyon (the subject site), and Canada Gobernadora (west of the site) are the major drainages within this watershed. According to the SDRWQCB, the drainages within this watershed are exempt from municipal use, but have been designated as beneficial for agricultural, industrial, warm water habitat, cold water habitat, wildlife habitat, and recreational 1 and 2.

4.0 SITE BACKGROUND

4.1 Site Ownership

Information regarding site ownership was provided by Rancho Mission Viejo. The current owner is listed as the San Juan Company. The owners address is listed as PO Box 9, San Juan Capistrano, California, 92693.

4.2 Site History

EEI reviewed available information sources to evaluate historic land use in and around the property. Aerial photographs, United States Geological Survey maps, Sanborn Maps, City Directories and other sources were researched.

4.2.1 Aerial Photograph Review

Aerial photographs were reviewed to identify historical land development and any uses which may have impacted the site. Photographs dating from 1953 and 1999 were reviewed at Continental Aerial Photo in Los Alamitos. In addition, aerial photographs dating from 1993 (USGS) and 2003 (EDAW) were also reviewed. **Table 1** summarizes the results of the aerial photograph review. A copy of the 1993 photograph is provided in **Figure 3**.

TABLE 1
Summary of Aerial Photograph Review

Year	Photo ID	Comments
1953	AXK-5K-145 (1)	The site and vicinity are unoccupied and undeveloped. Christianitos Road is visible to the east and Ortega Highway is visible to the north.
1959	9-31-46 (1)	No significant changes were noted since the previous photograph.
1960	C-23870-103 (1)	No significant changes were noted since the previous photograph.
1967	2-152 (1)	No significant changes were noted since the previous photograph.
1970	61-8-209 (1)	No significant changes were noted since the previous photograph.
1973	TG-7300-6-3 (1)	The site is occupied by a mining operation. Structures are present in the central portion of the property. Active mining is visible to the west of the structures. Trampas canyon appears undeveloped (i.e., no dam or reservoir).
1975	157-14-22 (1)	The mining area and plant appear unchanged. Trampas canyon is being graded and the dam appears under construction.
1983	218-14-28 (1)	Mining area to the west of the plant area has been increased. Trampas Dam and reservoir are visible. No other significant changes were noted.
1993	C90-4-140 (1)	Mining area has increased to the west. A retention basin is now visible to the north of the mining area Additional structures are visible around plant.
1999	Catalina Pacific (1)	No significant changes were noted since the previous photograph.
2003	GeoXplorer (2)	Site appears in its current configuration.

(1) Aerial Photograph viewed at Continental Aerial Photographs, Los Alamitos, California

(2) Aerial Photograph obtained from EDAW

4.2.2 Historic Topographic Maps

EEI reviewed topographic maps dating from 1942 to1988 at the University of California at Santa Barbara, Map and Imagery Laboratory. The 1942 map was published by the United States Army Corps of Engineers. The 1948, 1968, 1975, 1980, 1982, and 1988 maps were published by the United States Geological Survey.

The 1948 and 1942 maps indicate that the subject property is undeveloped. San Juan Creek is noted to the north and Christianitos Road is visible to the east. No other pertinent items were noted.

The 1968 map notes the presence of an unpaved road through Trampas Canyon. No other pertinent items were noted.

The 1975 map indicates the presence of several structures and ponds on the property, as well as a large area of disturbance corresponding to the location of the Trampas Dam and reservoir. No other pertinent items were noted.

The 1980, 1982, and 1988 maps indicate no significant change on the property, although significant mining and agricultural activity is visible to the north, across San Juan Creek. No other pertinent items were noted.

4.2.3 City/County Directories

EEI reviewed historic city directories for southern Orange County at the Central Library in Santa Ana, California. **Table 2** lists the results of the city directory search.

TABLE 2
Historical Tenants

Year	31302 Ortega Highway
1952	No Listing
1972	Owens-Illinois, Inc.
1976	Owens-Illinois, Inc.
1980	Owens-Illinois, Inc.
1985	Owens-Illinois, Inc.
1990	Dalton Trucking, Inc. California Silica Products Company
1995	Dalton Trucking, Inc. Oglebay Norton Industrial Sand
2001	Oglebay Norton Industrial Sand

4.2.4 Sanborn Maps

EEI researched available Sanborn Fire Insurance Maps of the subject site. Sanborn Maps provide detailed information on site structures, uses, and occupancies and were typically utilized by insurance companies to evaluate potential fire risk. Based on EEI's review, no Sanborn Fire Insurance Maps are available for the area surrounding the subject site, indicating little commercial development prior to 1950.

4.2.5 Orange County Building and Safety Department Files

EEI contacted the Orange County Building and Safety Department for information related to development of the subject property. EEI was able to review building permits and certificates of occupancy, for the subject property, dating between 1971 and 1987. The following is a summary of the information reviewed by EEI.

Note: Permits issued to "Owens-Illinois" until 1985. From 1985 on the permits are issued to Ca. Silica Products Co.

12/71; Building Permit/Certificate of Occupancy; fencing for electric equipment & pump pads-530 L.F.

12/71; Building Permit/Certificate of Occupancy; 320 square feet; lab storage building for glass-sand process plant

12/71; Building Permit/Certificate of Occupancy; Mill water supply tank

12/71, 1/72; Building Permit/Certificate of Occupancy; Libbey Truck load out #18

12/71; Building Permit/ Certificate of Occupancy; 900 square feet; Tailings booster pump station

12/71; Building Permit; 1920 square feet; office and lab buildings

1/72; Certificate of Occupancy; sulphuric acid storage tank for glass-sand plant

1/72; Building Permit/Certificate of Occupancy; 600 ton storage bin

1/72; Building Permit/Certificate of Occupancy; Office building and lab

1/72; Building Permit/ Certificate of Occupancy; 3300 square feet; Shop building

1/72; Building Permit/Certificate of Occupancy; gathering conveyor turned to mill building

1/72; Building Permit; 150 ton truck bin for glass-sand bin

9/72; Building Permit/Certificate of Occupancy; support structure for scrubber equipment

9/72; Building Permit/Certificate of Occupancy; support structure for sump and pump

10/72; Building Permit; glass structural support for scrubber B & A

10/72; Building Permit; Overflow sump access to ind. bldg.

9/85; Building Permit/Certificate of Occupancy, replace existing harding ball mill (w/300 HP motor) w/ a Marcy Rod mill (200 HP motor), walkway modifications, new monorail system

2/86; Grading Permit; warehouse storage facility for bagged sand

8/87; Building Permit/Certificate of Occupancy; 1600 square feet; screening facility

4.3 Regulatory Database Search

EEI reviewed known data on the hazardous waste generating establishments in the vicinity of the site, as well as on sites with known environmental concerns. These facilities were identified by county, state, or federal agencies and either generate, store, or dispose of hazardous materials. The majority of information in this section was obtained from First Search, an environmental information retrieval service. A copy of the First Search report is provided in **Appendix D**. Below is a list of databases that were reviewed in the preparation of this report:

4.3.1 Federal Databases

Comprehensive Environmental Response, Compensation, and Liability Information System (CERCIS) - No listings within one mile of the subject site.

National Priority List (NPL) - No listings within one mile of the subject site.

No Further Remedial Actions Planned (NFRAP) - No listings within one mile of the subject site.

Federal Facilities (FEDFAC) - No listings within one mile of the subject site.

Emergency Response Notification System (ERNS) - No listings within one-half mile of the subject site.

Site Enforcement Tracking System (SETS) - No listings within one mile of the subject site.

Enforcement Docket Systems (DOCKET)/Consent Decree Tracking System (CDETS) - No listings within one-half mile of the subject site.

Criminal Docket System (C-DOCKET) - No listings within one-half mile of the subject site.

Resource Conservation and Recovery Act Violators and Facility list (RCRA) - No listings within one mile of the subject site.

RCRA TSD Facility list (RCRA-D) - No listings within one mile of the subject site.

RCRA Generators (RCRA-G) - The subject site was the only listing within one mile. **California Silica Products Co.** (31302 Ortega Highway) was identified as a small quantity generator of hazardous waste.

4.3.2 State and Regional Databases

Annual Work Plan (AWP) - No listings within one mile of the subject site.

CALSITES (Abandoned Sites Program Information System) - No listings within one mile of the subject site.

CORTESE - No listings within one mile of the subject site.

California State Leaking Underground Storage Tanks (LUST): The only sites identified by LUST within one-half mile of the subject property were from the site itself. **31302 Ortega Highway** was noted as having three closed LUFT cases. **California Silica Products Co.** (Case 9UT1752), was identified as a release of diesel fuel to soil which occurred in October 1990. he case was closed in June 1991. **California Silica Products Co.** (Case 9UT2489), was identified as a release of gasoline to soil which occurred in the 1960's. The case was closed in March 1993. **Oglebay Norton Industrial Sand** (Case 9UT3523), was identified as a release of diesel fuel to soil which occurred in June 1997. The case was closed in April 2001.

Solid Waste Information System (SWIS) - No listings within one mile of the subject site

Toxic Releases (NT) - No listings within one mile of the subject site.

Toxic Pits (TPC) - No listings within one mile of the subject site.

Solid Waste Assessment Test (SWAT)- No listings within one mile of the subject site.

Hazardous Waste Information System (HWIS) - This state hazardous waste tracking system included six sites within one-half mile of the subject property. HWIS listings track the movement of hazardous materials, are not generally considered to be environmental concerns unless releases are documented at listed facilities.

Permitted Underground Storage Tanks (UST) - The only sites identified by UST within one-half mile of the subject property were from the site itself. **California Silica Products Co/Oglebay Norton Industrial Sand** are identified as operators of gasoline and diesel tanks. The presence of operating permit is generally not considered cause for further investigation, unless there is evidence of an unauthorized release.

4.4 Regulatory Agency Review

4.4.1 Orange County Fire Authority

EEI contacted the Orange County Fire Department's Clerk of Authority office for information regarding hazardous materials storage at the subject site. According to Fire Department inspection records, **Oglebay Norton Industrial Sand** (31302 Ortega Highway) currently holds hazardous materials operating permits for compressed gases and combustible liquids. Permits to operate a motor vehicle fuel dispensing stations and flammable/combustible liquid vehicles, equipment, and tanks were also noted.

The most recent inspection report, dated March 25, 2003, notes the following chemicals stored onsite: hydraulic oil, solvents, gear oil, oxygen, acetylene, diesel, unleaded gasoline, grease, and motor oil. There were no indications of code violations, hazardous materials spills or emergency responses in Fire Department files. A list of chemicals stored and the maximum daily amount permitted for storage is given in **Appendix D**

4.4.2 Orange County Health Care Agency

EEI contacted the Orange County Health Care Agency (OCHCA) Custodian of Records to obtain copies of any Underground Storage Tank (UST) Operating Permits, Leaking Underground Fuel Tank (LUFT) files and/or any Hazardous Waste Permit (Hazmat) files for the site. The following is a summary of the information contained in OCHCA Files.

The site is currently permitted as an Underground Storage Tank Facility. Permit 3690-2 indicates that two tanks are present: a 2,500-gallon, double-walled fiberglass tank containing regular unleaded gasoline; and a 10,000-gallon, double-walled fiberglass/plastic tank containing diesel fuel. Both tanks were installed in 1997. Annual UST inspection reports form 1996 through 2001 indicate a variety of violations, all related to record keeping. As of September 2001, all of the violations have been abated.

EEI reviewed Hazardous Waste Inspection Reports for the facility dating from September 1996 through May 2001. Waste streams identified during these inspections included waste oil, used oil filters, grease/sand from rotary drums, and parts cleaner waste. No violations were noted in the inspections dating from 1996, 1997, 2000, and 2001. An inspection from July 1998 noted the following violations: "containers not visibly marked with begin date of accumulation," "each container and tank not clearly

labeled 'hazardous waste' with required details," and "hazardous waste stored beyond maximum accumulation time." All of these violations were apparently corrected. The inspection report from March 2000 indicates that soil samples were collected below an existing "old & deteriorated" above ground waste oil tank. A total of four samples were collected, with results ranging from 64 to 790 mg/kg TPH. No further information was provided.

A 10,000-gallon underground diesel storage tank was removed from the site in October 1990 (Case #90UT240). No groundwater or visible signs of contamination were noted by the inspector. Samples collected during removal operations indicated 5,100 milligrams per kilogram (mg/kg) Total Petroleum Hydrocarbons (TPH) as diesel. No other compounds were detected. Additional assessment performed by Harding-Lawson Associates (HLA) in February 1991 indicated additional contamination to the east and west of the tank excavation. Despite the presence of contamination, the OCHCA closed the case in June 1991, based on the fact that: 1) the site is in a rural area; 2) no BTEX was detected; 3)no water producing wells are near the site vicinity; and 4) there are no potential receptors for contamination.

A 10,000-gallon underground diesel storage tank and a 1,000-gallon underground gasoline storage tank were removed from the site in February 1992 (Case #93UT15). Physical signs of contamination were noted by the inspector (staining and gasoline odor). Samples collected during removal operations indicated 40 mg/kg and 650 mg/kg TPH as gasoline. BTEX compounds were also detected. Additional tank pit excavation was directed by OCHCA and performed by HLA in August 1993. Excavated soil was transported offsite for disposal. Confirmation samples collected after excavation indicated that the majority of contamination had been removed, although residual benzene (0.097 mg/kg) was noted.. OCHCA granted site closure in March 1994.

A 10,000-gallon underground diesel storage tank was removed from the site in June 1997 (Case #97UT24). Physical signs of contamination were noted by the inspector (staining and diesel odor). Samples collected during removal operations indicated 13 mg/kg and 2,220 mg/kg TPH as diesel. Additional tank pit excavation was directed by OCHCA and performed in July 1998. Approximately 35 cubic yards of soil were removed and buried onsite 10 feet below grade in an overburden area. Confirmation samples collected after excavation indicated that the majority of contamination had been removed, although residual diesel concentrations (2,900 mg/kg) was noted. Two soil borings were drilled to 40 feet in December 1998 to delineate the vertical extent of contamination. "Low" concentrations of diesel were reported. Groundwater was not encountered. OCHCA granted site closure in April 2001.

4.4.3 California Regional Water Quality Control Board

EEI reviewed the Underground Storage Tank Information System (LUSTIS) and Spills, Leaks, Investigations, and Cleanup (SLIC) List, published by the California Regional Water Quality Control Board - San Diego Region (SDRWQCB), to determine whether the site or any nearby property was listed as having a leaking underground tank, spill, leak, or aboveground tank problem. The subject property was identified as the location of closed LUFT cases. These cases are described in section 4.4.2 above. No other pertinent information was noted.

EEI also contacted the SDRWQCB to determine the existence of any surface, stormwater, or groundwater discharge permits. According to the SDRWQCB, the site has a General Permit (Order No. 97-03-DWQ, NPDES No. CAS000001 - Industrial) for Storm Water Discharges associated with Industrial Activities.

The facility was inspected in January 2003 (**Appendix E**), based on a review of an annual report in which elevated levels of total suspended solids (TSS) were reported in the two outfall ponds (i.e., 16,000 milligrams per liter (mg/l) and 3,900 mg/l). The site inspection report summarized operations at the site, and concluded that the only issue on non-compliance was the outdoor storage of batteries at the site. There was no explanation given for the elevated TSS concentrations.

4.4.4 Review of Division of Oil, Gas and Geothermal Resources Files

EEI reviewed information regarding oil production near the site provided by the California Division of Oil, Gas, and Geothermal Resources. Based on file data, no petroleum exploration or production has occurred on or adjacent to the site.

4.5 Previous Environmental Reports

4.5.1 URS Greiner Woodward Clyde - Phase II Assessment

EEI reviewed the *Draft Report: Phase II Assessment of Conditions, Trampas Canyon Dam, Orange County California*, prepared by URS Greiner Woodward Clyde (URS) in July 1999 (**Appendix F**). The purpose of the report was to summarize an investigation into potentially impacted tailings within the retention dam, related to prior use of chemicals at the quarry site. The work performed included the collection of groundwater samples from two onsite monitoring wells, the drilling of three boreholes within the tailings, and analysis of selected soil and groundwater samples for TPH, Title 22 metals, as well as volatile (VOC's) and semivolatile (SVOC's) organics.

The report indicates that previous to 1990, a number of potentially hazardous chemicals were utilized in the sand washing and separation operations at the site. These reportedly included tallow diamine, sulfuric acid, sodium hydroxide, American cyanamid F065, hydrochloric acid, petroleum sulfonate, reagent fuel oil, pine oil, and hydrofluoric acid. The report also states that some 110,500,000 cubic feet of tailings were contained within the reservoir.

Analytical results of samples collected from soil and groundwater indicated no detectable concentrations of VOC's or SVOC. TPH was reported in soil in concentrations ranging from below 1 mg/kg to 94 mg/kg. Trace metals were reported in concentrations below EPA's preliminary Remediation Goals (PRG's) for residential use. Groundwater concentrations of arsenic were reportedly above the Maximum Contaminant Level (MCL) for drinking water. Based on the results of their investigation, URS stated that there appeared to be "no significant environmental limitations to the re-use of tailings materials."

4.6 Interview with Key Site Personnel

EEI contacted Michael Miclette, Operations Manager for the subject facility, and interviewed him regarding key site information. A list of the questions asked, and a summary of their responses, is included below.

Q: Are you aware of any current or previous uses of the site or adjoining properties which may create an environmental concern?

A: No.

Q: To the best of your knowledge has the property or any adjoining property ever been used as a gasoline station, motor repair facility, commercial printing facility, dry cleaners, photo developing laboratory, junkyard or landfill, or as a waste treatment, storage, disposal, processing or recycling facility?

A: Yes, there is fuel station and repair shop on site for the plant.

Q: Are there currently, or to the best of your knowledge have there been previously, any damaged or discarded automotive or industrial batteries, or pesticides, paints or other chemicals in individual containers of greater than 5 gal (19 L) in volume or 50 gal (190 L) in the aggregate, stored on or used at the property or at the facility?

A: Refer to the chemical inventory.

Q: Are there currently, or to the best of your knowledge have there been previously, any industrial drums (typically 55 gal) or sacks of chemicals located on the property or at the facility?

A: No.

Q: Has fill dirt been brought onto the property that may have originated from a contaminated site or that is of an unknown origin?

A: No.

Q: Are there currently, or to the best of your knowledge have there been previously, any pits, ponds, or lagoons located on the property in connection with waste treatment or waste disposal?

A: No.

Q: *Is there currently, or to the best of your knowledge has there been previously, any stained soil on the property?*

A: Yes.

Q: Are there currently, or to the best of your knowledge have there been previously, any registered or unregistered storage tanks (above or underground) located on the property, aside from the existing aboveground waste oil tank?

A: Yes. There is one 10,000-gallon UST for diesel, and one 2,000-gallon UST for gasoline.

Q: Are there currently, or to the best of your knowledge have there been previously, any vent pipes, fill pipes, or access ways indicating a fill pipe protruding from the ground on the property or adjacent to any structure located on the property?

A: No.

Q: Are there currently, or to the best of your knowledge have there been previously, any flooring, drains, or walls located within the facility that are stained by substances other than water or are emitting foul odors?

A: No.

Q: If the property is served by a private well or non-public water system, have contaminants been identified in the well or system that exceed guidelines applicable to the water system or has the well been designated as contaminated by any government environmental/health agency?

A: No.

Q: Does the owner or occupant of the property have any knowledge of environmental liens or governmental notification relating to past or recurrent violations of environmental laws with respect to the property or any facility located on the property?

A: No.

Q: Has the owner or occupant of the property been informed of the past or current existence of hazardous substances or petroleum products or environmental violations with respect to the property or any facility located on the property?

A: No.

Q: Does the owner or occupant of the property know of any past, threatened, or pending lawsuits or administrative proceedings concerning a release or threatened release of any hazardous substance or petroleum products involving the property by any owner or occupant of the property?

A: No.

Q: Does the property discharge waste water on or adjacent to the property other than storm water into a sanitary sewer system?

A: No.

Q: To the best of your knowledge, have any hazardous substances or petroleum products, unidentified waste materials, tires, automotive or industrial batteries or any other waste materials been dumped above grade, buried and/or burned on the property?

A: No.

Q: Is there a transformer, capacitor, or any hydraulic equipment for which there are any records indicating the presence of PCBs?

A: No. There was a PCB removal about 5 years ago.

4.7 Other Environmental Issues

4.7.1 Asbestos Containing Materials

Asbestos is a natural mineral fiber used in the manufacture of a number of different building materials. Asbestos has also been identified as a human carcinogen. Most friable (i.e., those that are easily broken or crushed) asbestos-containing materials (ACM) were banned in building materials by 1978. By 1989, most major manufacturers had voluntarily removed non-friable ACM (i.e., flooring, roofing, and mastics/sealants) from the market. However, these materials were not banned completely.

In October 1995, the Federal Occupational Safety and Health Administration (OSHA) redefined the manner by which building materials are classified in regards to asbestos and the also the way these materials are to be handled. Under this ruling, "thermal system insulation and sprayed-on or troweled on or otherwise applied surfacing materials" applied before 1980 are considered presumed asbestos containing materials (PACM). Other building materials such as " floor or ceiling tiles, siding, roofing, transite panels" (i.e., non-friable) are also considered PACM unless tested.

No ACM was noted in existing structures during the site reconnaissance. However, given that many of the structures were built before 1980, ACM is a potential concern.

4.7.2 Lead-Based Paint

Lead-based paint is identified by OSHA , the Environmental Protection Agency (EPA) and the Department Housing and Urban Development Department (HUD) as being a potential health risk to humans, particularly children, based upon its effects to the central nervous system, kidneys, and bloodstream. The risk of lead-based paint has been classified by HUD based upon the age and condition of the painted surface.

The risk classification includes the following:

- maximum risk is from paint applied before 1950
- a severe risk is present from paint applied before 1960
- a moderate risk is present from paint applied before 1970
- a slight risk is present from paint applied before 1977
- paint applied after 1977 is not expected to contain lead.

Given the age of the site buildings, the presence of lead-based paint is a potential concern.

4.7.3 Radon

Radon is a radioactive gas which has been identified as a human carcinogen. Radon gas is typically associated with fine-grained rock and soil, and results from the radioactive decay of radium. EPA recommends that homeowners in areas with radon screening levels greater than 4 pCi/L (picocurries per liter) conduct mitigation of radon gas to reduce exposure.

Sections 307 and 309 of the Indoor Radon Abatement Act of 1988 (IRAA) directed EPA to list and identify areas of the U.S. with the potential for elevated indoor radon levels. EPA's Map of Radon Zones (EPA-402-R-93-071) assigns each of the 3,141 counties in the U.S. to one of three zones based on radon potential:

- Zone 1 counties have a predicted average indoor radon screening level greater than 4 pCi/L.
- Zone 2 counties have a predicted average indoor radon screening level between 2 and 4 pCi/L.
- Zone 3 counties have a predicted average indoor radon screening level less than 2 pCi/L.

Based on such factors as indoor radon measurements; geology; aerial radioactivity; soil permeability; and foundation types, EPA has identified Orange County as Zone 3 (i.e., low potential for radon gas). Therefore, EEI does not consider radon as a concern at this time.

5.0 SITE RECONNAISSANCE

5.1 Purpose

The purpose of the site reconnaissance was to visually and physically observe the site, site structures, and adjoining properties for conditions indicating an existing release, past release, or threatened release of any hazardous substances or petroleum products into structures of the site, or into soil and/or groundwater beneath the site. This would include any evidence of contamination, distressed vegetation, petroleum-hydrocarbon staining, waste drums, illegal dumping, or improper waste storage/handling.

5.2 Results of Site Reconnaissance

5.2.1 Subject Site

On March 31, 2003, EEI personnel walked the entire site. EEI was accompanied by Dan Scott, Facility Manager. Mr. Scott provided access to the property, answered questions pertaining to site operations, and provided EEI with process diagram for the facility (**Appendix G**). Photographs 1 through 32 **(Appendix H**) document the site reconnaissance, which is summarized in **Table 3**.

EEI personnel conducted a walking/driving inspection around the perimeter of the subject property, then traversed the site from east to west and north to south. The site is partially developed, and is located south of San Juan Creek in Trampas Canyon, a north-south oriented alluvial valley. The valley slopes moderately to the north.

A paved road provides access to the northern margin of the property. Unpaved trails and undeveloped land bound the site to the west, south and east. The driveway into the plant runs south from the paved access road to the central portion of the property. A fueling island, truck scale, wash stations, drum storage area, and a boneyard are present along the driveway north of the plant. The fueling area did not appear to be paved, although the drum storage area was a bermed concrete slab.

The central portion of the facility is occupied by the plant and related support structures. The plant includes Rod and Ball Mills to break up mined sand, cleaners/separators to wash and dewater the sand, dryers for washed sand, a screen house to separate the sand size fractions, and a bagging operation. Support structures include an office complex, shops, a scale, several storage areas/units, a fuel island and associated USTs. Associated with the plant operations are a water treatment/recycling system and reservoir/tailings retention area. Wash water from the plant are passed through a separations system to remove solids, then recycled from the storage reservoir back through the plant for reuse. Tailings generated from the sand washing are stored in the reservoir behind Trampas Dam.

Activities in the shop area, located south of the office complex, include welding, vehicle/equipment servicing and repair, and parts storage. Potentially hazardous materials stored/used in the shop area include compressed gases, new and used oil, diesel, gasoline, new and used batteries, grease, and solvents (i.e., parts washer). A mobile service truck is used at the facility, and contains small quantities of fuels and lubricants required to service heavy equipment at the site.

Strip mining operations take place to the northwest of the plant. Sand strata are ripped with a dozer, then the loose material picked up by a scraper for delivery to the plant for processing. To the south of the active mining area, and to the west of the plant, is the original mining area, no longer in use. This area has partially revegetated, and contains a substantial reservoir in its base. An above ground diesel tank and storage unit were noted along the road just north of the original mining area. Surface staining was noted around the base of the diesel tank.

A large vehicle/equipment storage area is located west of the plant, along the eastern margin of the original mining area. Heavy equipment, parts, scrap, tires, and debris were note din this area. An above ground diesel tank (with secondary containment) were noted in this area, as were numerous drums (both covered and uncovered) full of oil and grease. All of the drums had been placed on pallets. The uncovered drums and the diesel secondary containment had recently been exposed to rain, and had obviously overflowed onto the bare ground below.

An earthen dam and large reservoir/tailing storage area are present to the south of the plant/mining area. The reservoir extends the length of Trampas Canyon from the dam to just north of the southern property boundary. An unpaved road provides access to each side of the reservoir, from the base of the dam. The tailings line outfall was noted on the northwest corner of the reservoir. A separate storage pond is present on the northeast corner of the reservoir, near the water supply pipeline. A portable diesel-powered water pump was noted at this location

After completing the reconnaissance fo the plant, mining and reservoir areas, EEI conducted a drive-by inspection along the perimeter road, which runs along the ridgelines on the western, southern, and eastern margins of the property. This road allows relatively unobstructed vistas of the entire property. No evidence of environmental concerns were noted along the outlying portions of the property.

Based on results of EEI's site reconnaissance, evidence of contamination, petroleum-hydrocarbon staining, waste drums, and improper waste storage/handling were noted. This included stained soils under above ground fuel and drum storage, uncovered waste drums, and overflowing secondary containment.

5.2.2 Adjacent Properties

Adjacent properties are undeveloped to the north, east, west, and south. No evidence of environmental concerns was noted.

TABLE 3
Summary of Site Reconnaissance

ITEM	CONCERNS	COMMENTS
General Housekeeping	No	Facility appeared generally well maintained and in good condition.
Surface Spills	No	None observed.
Stained Soil/pavement	Yes	Beneath above ground fuel tanks and in waste drum storage areas
Fill Materials	No	None observed.
Pits/ponds/lagoons	No	Storage reservoirs and retention basins were noted north and south of plant.
Surface Impoundments	No	See above.
AGT's/UST's	Yes	10,000 gallon Diesel UST and 2,500 gasoline UST. Several large portable diesel AGT's.
Distressed Vegetation	No	None observed.
Electrical Substations	No	Relatively modern facility on site.
Areas of Dumping	No	None observed.
Pole-mounted Transformers	No	Several observed on site.
Waste/scrap storage	Yes	Two boneyards with various debris, derelict vehicles, and waste drums.
Chemical use/storage	Yes	Chemical use/storage included parts washers (solvent), new and used oil, diesel fuel, acetylene, gasoline, , batteries, grease, and paint.

6.0 CONCLUSIONS/RECOMMENDATIONS

EEI conducted a Phase I Environmental Site Assessment (ESA) at the subject property in March/April 2003. The ESA included a review of regulatory database lists as per ASTM 1527-00. Pursuant to the requirements of Section 65962.5 of the California Government Code, the subject property was not located on the State list of identified hazardous waste and/or hazardous substance sites.

Based on a site reconnaissance, a review of physiographic, historical and regulatory information, and information provided by the property owner, no evidence of *recognized environmental conditions* has been revealed in connection with the subject site, nor any adjacent property, except for the following:

1. Improper storage of waste containers was noted in the vehicle/equipment storage area. Principal concerns include open drums, leakage, and unidentified containers. Phase II investigation appears warranted in these areas.

2. Potentially hazardous used equipment/debris was noted in various locations. This included used batteries, tires, used equipment parts, scrap metal, and abandoned vehicles. This equipment/debris should be removed prior to termination of the existing tenants lease.

3. Surface stains indicating spillage of petroleum products were noted in several locations on site. These included drum storage areas and beneath the above ground diesel tanks. The extent of this spillage is unknown. Phase II investigation appears warranted in these areas.

4. A fueling station is present north of the plant location. These tanks were installed in 1997 and appear to be in good condition. However, EEI does recommend that site sampling take place in these areas prior to termination of the existing tenants lease. Sampling should include soils and groundwater in and around the existing UST and dispensers.
5. Two maintenance shops were noted at the facility; a large shop south of the office and a small shop at the base of the screen house. Petroleum lubricants, solvents and waste products are used/stored at these locations. Phase II investigation appears warranted in these areas.

6. UST's have been removed from the site on at least three previous occasions; in 1990, 1991, and 1997. In each case, contamination was reported and only partially removed. In one case, the contamination was simply relocated to the overburden storage area of the property (with permission from OCHCA). The rationale used at the time was the current land use, rural setting, lack of impact to groundwater, and lack of human/environmental receptors. These factors may change in the future if residential development is contemplated in these areas, and additional investigation or remediation may be required.

7. The tailings within Trampas Dam were sampled in three locations by URS-Greiner Woodward Clyde in 1999. The unconsolidated and saturated nature of the tailing limited the sample locations to areas close to the shoreline. Approximately 4 soil samples were analyzed from each of these borings to characterize the approximately 110,500,000 cubic feet of sediment. Given the limited number of samples and sample locations, the results of this sampling may not accurately represent the chemical composition of the tailings. Phase II investigation appears warranted in this area.

8. A licensed/certified asbestos and lead paint inspector should be contacted prior to demolition or remodeling of site structures.

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EEI

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PHASE I ENVIRONMENTAL SITE ASSESSMENT

PLANNING AREA 6
(CRISTIANITOS MEADOWS)
Cristianitos Road
San Juan Capistrano, California

May 1, 2003
(Revised February 2004)

EEI Project No. V030305-38A-PA6

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Phase I Environmental Site Assessment

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Site Location:

PLANNING AREA 6
(CRISTIANITOS MEADOWS)
Cristianitos Road
San Juan Capistrano, California

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1.0 INTRODUCTION

1.1 Purpose

The purpose of this Phase I Environmental Site Assessment (ESA) was to assess the possible presence of *recognized environmental conditions* within the Planning Area Six (Cristianitos Meadows) portion of Rancho Mission Viejo, located along Cristianitos Road, south of Ortega Highway and approximately five miles east of the City of San Juan Capistrano, California (**Site Location Map, Figure 1**). *Recognized environmental conditions* include those property uses that may indicate the presence or likely presence of an existing, historical, or threatened release of any hazardous substances or petroleum products into structures, soil, and/or groundwater beneath the property. The term *recognized environmental conditions* is not intended to include *de minimus* conditions that generally do not present a material risk of harm to public health or the environment.

This ESA was performed in general conformance with the American Society for Testing and Materials (ASTM) *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process,* designation E1527-00.

1.2 Scope of Services

The scope of services outlined below was performed in accordance with the Agreement for Professional Services dated February 12, 2003 (Proposal 39A), between Morgan Lewis, & Bockius, LLP, and EEI.

- A review of available documents for topographic, geologic, and hydrogeologic data affecting the site.
- A review of available maps, aerial photographs and other documents to estimate historical site usage and development.
- A review of federal, state, county, and city documents concerning hazardous material storage, generation, and disposal, active and inactive landfills, nearby environmental concerns, and associated permits.
- Interviews with individuals having knowledge of the site.
- A site reconnaissance to ascertain the current condition of the site.
- The preparation of this report which presents our findings, conclusions, and recommendations.

1.3 Reliance

This ESA has been prepared for the sole use of Morgan Lewis, & Bockius, LLP, and Rancho Mission Viejo. This assessment should not be relied upon by other parties without the express written consent of EEI, Morgan Lewis, & Bockius, LLP, and Rancho Mission Viejo. Therefore, any use or reliance upon this assessment by a party other than Morgan Lewis, & Bockius, LLP, and Rancho Mission Viejo, shall be solely at the risk of such third party and without legal recourse against EEI, its employees, officers, or directors, regardless of whether the action in which recovery of damages is brought is based upon contract, tort, statute or otherwise.

This assessment should not be interpreted as a statistical evaluation of the site, but is rather intended to provide a preliminary indication of on-site impacts from previous site usage or the release of hazardous materials. If no significant indicators of the presence of hazardous materials are encountered during this search, this does not preclude their presence.

The findings in this report are based upon a review of published geologic and hydrogeologic information, information (both documentary and oral) provided by Rancho Mission Viejo, Orange County Planning/Building and Safety Department, Orange County Fire Authority, Orange County Health Care Agency, Orange County Agricultural Commissioner, First Search (an environmental database retrieval system), various state and federal agencies, and field observations. Some of these data are subject to change over time. Some of these data are based on information not currently observable or measurable, but recorded by documents or orally reported by individuals.

2.0 PROPOSED PROJECT

2.1 Overall Description of Proposed Project

As proposed by Rancho Mission Viejo, the project includes 22,815 acres general planned and zoned for development of up to 14,000 dwelling units in nine planning areas and other uses and open space within four planning areas. Other uses include 91 acres of urban activity center uses, 240 acres of business park uses, 50 acres of neighborhood retail uses, up to four golf courses and approximately 15,576 acres of open space area which includes a proposed 1,034 acre regional park. Within the nine planning areas proposed for development, approximately 7,694 acres would be developed. Ranching and other agricultural activities would also be retained within a portion of the proposed open space area. Infrastructure would be constructed to support all of these uses, including road improvements, utility improvements and schools. The Planning Area Location Map (**Plate 1**) illustrates the boundaries of the proposed project.

2.2 Description of Planning Area

Planning Area Six is located north of the Donna O'Neill Land Conservancy at Rancho Mission Viejo (previously known as the Rancho Mission Viejo Land Conservancy). This planning area would be 308 acres of 1B-Suburban Residential. A total of 110 dwelling units are proposed on 263 acres. Approximately 45 acres of open space are also proposed in this planning area.

3.0 PHYSIOGRAPHIC SETTING

3.1 Site Description

The subject property is located along Cristianitos Road, south of Ortega Highway approximately four miles east of the San Juan Capistrano. The property occupies portions of the lots identified by assessors parcel number 125-162-30, -16, -15, -14, and -27 (**Assessor's Parcel Map, Appendix A**). The property is located within Cristianitos Canyon, and access is from Cristianitos Road.

The property is bounded by undeveloped open land to the north; Cristianitos Road and vacant land to the west; vacant land and the former Riverside Cement lease to the east; and vacant land to the south. According to the Orange County Planning Department, the site is zoned A-1 (general agriculture). A copy of the County Zoning Map is included in **Appendix B**.

The site is currently unoccupied, however old abandoned clay mines are located in the central and southern portions of the site (**Site Plan, Figure 2**).

3.2 Topography

The site is located within Cristianitos Canyon, a north-south trending alluvial valley. The site elevation is approximately 500 feet above mean sea level (amsl). The topographic gradient in the site vicinity is to the southeast at approximately 0.08 feet per foot. Surface drainage from the site flows south along Cristianitos Canyon into Gabino Creek, then eventually into the Pacific Ocean, approximately 6 miles to the southwest. Based on the Flood Zone Map published by the Federal Emergency Management Agency (FEMA), the subject property lies within an area designated Zone X (i.e. outside a 500-year flood plain).

3.3 Regional and Local Geology

The site is located in an alluvial valley (Cristianitos Canyon) on the southwestern slopes of the Santa Ana Mountains (Norris and Webb, 1990). The Santa Ana Mountains form the northwest margin of the Peninsular Ranges Geomorphic Province, and are comprised principally of granitic, metavolcanic, and sedimentary rocks of Jurassic to Pliocene age. The mountains are the result of relatively slow, late-Quaternary uplift which has shaped the range into a dissected horst block.

Sedimentary deposits in the site vicinity are a homoclinal sequence of marine and nonmarine formations including the Pliocene Capistrano and Monterey Formations, the Miocene Topanga Formation, the Eocene Sespe and Santiago Formations, the Paleocene Silverado Formation, and the Upper Cretaceous Williams and Ladd Formations (Morton, 1974). These deposits lie unconformably upon the older metamorphic and volcanic rocks, including the Jurassic Santiago Peak Volcanics and the Bedford Canyon Formation. Quaternary alluvial soils, derived primarily from weathering of the Santa Ana Mountains, form the gently sloping river terraces in the site vicinity.

Soil in the vicinity of the site has been identified by the United States Department of Agriculture - National Resource Conservation Service as belonging to the Botella, Capistrano, and Myford associations (USDA, 1978). Soils in the Botella and Capistrano associations are typically found on gently sloping to moderately sloping alluvial fans and consist mainly of well-drained clay and sandy loams. These soils are moderately slow to moderately rapid permeability, runoff is medium, and the erosional hazard is moderate. Soils in the Myford association are found on marine terraces and consist mainly of sandy loams. This soil is very slowly permeable, runoff is medium to rapid, and the erosional hazard is moderate.

Structural deformation in the vicinity of the site is related to the Elsinore Fault Zone, a major northwest-southeast trending strike-slip fault zone located approximately 19.5 miles to the northeast. Motion along the Elsinore Fault Zone is primarily right-lateral, although a vertical component may also be present. The Elsinore Fault Zone is considered active, with major ruptures occurring roughly every 250 years at magnitudes of between 6.5 - 7.5 (SCEC, 1998). Other major faults in the vicinity of the site include the Christianitos Fault (immediately west of the site), the Mission Viejo Fault (east of the site), and the Newport-Inglewood Fault (southwest of the site).

3.4 Regional and Local Hydrogeology

According to the Basin Plan published by the San Diego Regional Water Quality Control Board (SDRWQCB, 1994), the site lies within the San Mateo Hydrologic Area of the San Juan Hydrologic Unit. In general, groundwater in this subarea has been designated as beneficial for domestic/municipal, agricultural, and industrial uses. Groundwater levels in the vicinity of the site are seasonally variable, but should generally occur at between 3 and 25 feet below ground surface (Rancho Mission Viejo personnel, personal communication).

The San Mateo Hydrologic Area is located within the San Mateo Creek watershed. San Mateo Creek (southeast of the site), and Christianitos Creek (west of the site) are the major drainages within this watershed. According to the SDRWQCB, the drainages within this watershed are exempt from municipal use, but have been designated as beneficial for warm water habitat, wildlife habitat, and recreational 1 and 2.

4.0 SITE BACKGROUND

4.1 Site Ownership

Information regarding site ownership was provided by Rancho Mission Viejo. The current owner is listed as the San Juan Partnership. The owners address is listed as PO Box 9, San Juan Capistrano, California, 92693.

4.2 Site History

EEI reviewed available information sources to evaluate historic land use in and around the property. Aerial photographs, United States Geological Survey maps, Sanborn Maps, City Directories and other sources were researched.

4.2.1 Aerial Photograph Review

Aerial photographs were reviewed to identify historical land development and any uses which may have impacted the site. Photographs dating from 1952 and 1999 were reviewed at Continental Aerial Photo in Los Alamitos, California. In addition, a 2002 aerial photograph (EDAW) was also reviewed **Table 1** summarizes the results of the aerial photograph review. A copy of the 2000 aerial photograph is included in **Figure 3**.

TABLE 1
Summary of Aerial Photograph Review

Year	Photo ID	Comments
1952	AXK-4K-44 [(1)]	Unpaved roads are present throughout the property. Three (3) small mining areas (clay mines) appear in the central and southern portion of the site. However, the working status of these mines appears to be inactive.
1959	9-31-46/47/48 [(1)]	A pond is located in the center of the site. Christianitos road is present to the west of the property. No other changes were noted since the previous photograph.
1967	2-152/2-153 [(1)]	No pertinent changes were noted since the previous photograph.
1970	61-8-209 [(1)]	No pertinent changes were noted since the previous photograph.
1973	132 13-14 [(1)]	No pertinent changes were noted since the previous photograph.
1977	181-14-24 [(1)]	No pertinent changes were noted since the previous photograph.
1983	14-28/14-27 [(1)]	No pertinent changes were noted since the previous photograph.
1987	F290 [(1)]	No pertinent changes were noted since the previous photograph.
1992	C85-16-15 [(1)]	No pertinent changes were noted since the previous photograph.
1993	C-90-4-140 [(1)]	No pertinent changes were noted since the previous photograph.
1999	C-136-44-168/167 [(1)]	No pertinent changes were noted since the previous photograph.
2002	Cristianitos Meadows [(2)]	No pertinent changes were noted since the previous photograph, and the site appears in its current configuration.

[(1)] Aerial Photograph viewed at Continental Aerial Photographs, Los Alamitos, California

[(2)] Aerial Photograph obtained from EDAW

4.2.2 Historic Maps

EEI reviewed topographic maps dating from 1942 to1988 at the University of California at Santa Barbara, Map and Imagery Laboratory. All of the maps reviewed were published by the United States Geological Survey, with the exception of the 1942 map, which was published by the U.S. Army Corp of Engineers.

No indication of the development was indicated on any of the maps, with the following exceptions. The 1942 map shows the presence of Cristianitos Road along the western margin of the property. The 1948 map shows the presence of one road traversing the property. The 1968 map show the presence of two roads traversing the property and a "prospect" marking in the southern portion along Cristianitos Road. No changes were noted on the 1975, 1980, 1982, or 1988 maps. No other pertinent features were noted.

4.2.3 City/County Directories

EEI reviewed available Criss Cross City Directories for Orange County. The subject property has never been assigned a street address, therefore, there were no listings for the subject property.

4.2.4 Sanborn Maps

EEI researched available Sanborn Fire Insurance Maps of the subject site. Sanborn Maps provide detailed information on site structures, uses, and occupancies and were typically utilized by insurance companies to evaluate potential fire risk. Based on EEI's review, no Sanborn Fire Insurance Maps are available for the area surrounding the subject site, indicating little commercial development prior to 1950.

4.2.5 Orange County Building and Safety Department Files

Based on reviews of aerial photographs, topographic maps and interviews with the property owner and County personnel, the site has never been fully developed. Therefore, a review of building department records was not conducted for this ESA.

4.3 Regulatory Database Search

EEI reviewed known electronic database listings for possible hazardous waste generating establishments in the vicinity of the site, as well as on sites in the area with known environmental concerns. Facilities were identified by county, state, or federal agencies and either generate, store, or dispose of hazardous materials. The majority of information in this section was obtained from FirstSearch®, an environmental information/database retrieval service. A copy of the FirstSearch® report is provided in **Appendix D**, along with a description of the individual databases. The subject property was not listed in any of the databases reviewed as having environmental concerns. For discussion purposes, the term "non-geocoded" is applied to sites that either have non-existent or incomplete addresses. EEI has attempted to locate these sites, based on the location description provided in the records search. Below is a list of databases that were reviewed in the preparation of this report

4.3.1 Federal Databases

National Priority List (NPL) (Superfund) - No listings within one mile of the subject site.

Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) - No listings within one mile of the subject site.

No Further Remedial Actions Planned (NFRAP) - No listings within one mile of the subject site.

RCRA TSD Facility list (RCRA-D) - No listings within one mile of the subject site.

RCRA Corrective action sites (COR) - No listings within one mile of the subject site.

RCRA Generators (RCRA-G) -The Environmental Protection Agency (EPA) regulates generators of hazardous material through the Resource Conservation and Recovery Act (RCRA). All hazardous waste generators are required to notify EPA of their existence by submitting the Federal Notification of Regulated Waste Activity Form (EPA Form 8700-12) or a state equivalent form. Three non-geocoded sites were identified within one mile of the subject property. The sites are actually located greater than one mile from the subject property. Therefore, these sites are not considered environmental concerns at this time.

RCRA No Longer Regulated (NLR) - No listings within one mile of the subject site.

Emergency Response Notification System (ERNS) - Eleven non-geocoded sites were reported within one mile of the subject property. The calls appear to be mostly highway/railway related with no or minor amounts of materials released. All eleven sites appear to be at least one half mile away from the subject site. Therefore, these reports are not considered environmental concerns at this time.

The subject site was not identified by any of the sources listed above as having an environmental concern or operating permit.

4.3.2 State and Regional Databases

Sites that are Contaminated or Potentially Contaminated by Hazardous Wastes (State Sites) - One non-geocoded site was reported within one mile of the subject property. The **Capistrano Unified School District** proposed a school location within one mile of the subject site. The Department of Toxic Substances Control was called to the location for an inspection. No action was needed. Therefore, this incident is not considered an environmental concern.

Sites with a record of spills, leaks, investigations, and cleanups (Spills - 1990) - No listings within one mile of the subject site.

Solid Waste Landfills (SWL) - Seven non-geocoded sites were reported were reported within one mile of the subject property. **Prima Deschecha Sanitation Landfill** (at the end of La Pata Road) is greater than one mile from the subject site. This site disposes of non-hazardous wastes. **La Pata Greenwaste Facility** (31748 La Pata Avenue) is greater than one mile from the subject site. Other reported sites are either greater than one mile from the subject site or do not have enough information to be properly located. Based on their distances from the subject property, none of these sites are considered environmental concerns at this time.

Establishments Issued a Permit to Track Site Status as a hazardous waste generator, gas station, TSD, underground tanks, violations, or unauthorized releases (Permits) - No listings within one mile of the subject site.

Other Unique Databases (Other) - One site was reported within one mile of the subject property. **Lomas San Juan Model Home Site** was identified as a LUST site. This case is further discussed in the LUST section below.

Permitted Underground/Aboveground Storage Tanks (REG UST/AST) - Four non-geocoded sites were reported within one mile of the subject property. Upon further evaluation, EEI located these sites greater than one mile from the subject site. Based on the distance and the fact that operating permits are not considered rationale for further investigation, these sites are not considered an environmental concern at this time.

Leaking Underground Storage Tanks (Leaking UST): One non-geocoded site was identified within one mile of the subject property. **Lomas San Juan Model Home Site** is non-geocoded and the location of the site is unknown. A gasoline leak was reported on January 1, 1965, and the aquifer is reportedly impacted. Soil at the site was excavated and treated or removed. The site was closed on December 11, 1991. Based on the status of the case (closed), this site is not considered an environmental concern at this time.

Releases into air and surface water (Releases) - Two non-geocoded sites were reported within one mile of the subject property. These sites are located along Oso Street, San Juan Capistrano, which is greater than one mile from the subject site. Therefore, these sites are not considered an environmental concern at this time.

PCB Activity Database System (PADS) - No listings within one mile of the subject site.

The subject site was not identified by any of the sources listed above as having an environmental concern or operating permit.

4.4 Regulatory Agency Review

4.4.1 Orange County Fire Authority

EEI contacted the Orange County Fire Authority's (OCFA) office for information regarding hazardous materials storage at the subject site. According to Fire Department personnel, the site does not have an official address or hazardous materials permit file, and is not currently under a regular inspection schedule. They further stated that they were not aware of any violations, hazardous materials spills, or emergency responses at the subject property.

4.4.2 Orange County Health Care Agency

EEI reviewed Orange County Health Care Agency databases including Leaking Underground Fuel Tank (LUFT) Sites, Underground Storage Tank (UST) Facilities, Non-petroleum Underground Tanks, Hazardous Waste Generators (HWG) and Land Fill Sites, to determine if the subject site or any properties within the site vicinity were listed as having an environmental concern. The subject site was not listed as having an environmental concern or operating permit. However, several sites in the vicinity of the subject property were identified on the LUFT list, including **California Silica Products** and **Oglebay Norton Industrial Sand** (31302 Ortega Highway, approximately one quarter mile west), and **Ford Aerospace Company** (33600 Ortega Highway, approximately one-quarter mile south). All three cases are closed, and reportedly did not impact groundwater. Therefore, these cases are not considered environmental concerns at this time. **Oglebay Norton Industrial Sands** was also listed on the UST and HWG databases. These are listings for operating permits only, and operating permits do not pose an immediate environmental concern. Therefore, this site is not considered an environmental concern at this time.

4.4.3 California Regional Water Quality Control Board

EEI reviewed the online database GeoTracker, maintained by the California Regional Water Quality Control Board - San Diego Region (SDRWQCB), to determine whether the site or any nearby property was listed as having a leaking underground tank, spill, leak, or aboveground tank problem. There were no listings for the subject site or any adjacent site.

4.4.4 Review of Division of Oil, Gas and Geothermal Resources Files

EEI reviewed information regarding oil production near the site provided by the California Division of Oil, Gas, and Geothermal Resources. According to the information reviewed, no petroleum exploration or production has occurred on or adjacent to the site.

4.5 Interview with Site Personnel

EEI contacted Fred Vorhees, Ranch Manager for Rancho Mission Viejo (property owner), who was interviewed regarding key site information. Mr. Vorhees indicated that he has been working at the Ranch for approximately 30 years and is familiar with the subject property. A list of the questions asked, and a summary of their responses, is included below.

Q: Is the property or any adjoining property used for an industrial or agricultural use?

A: No.

Q: To the best of your knowledge, was the property or any adjoining property used for industrial or agricultural purposes in the past?

A: Yes, the land was used to mine clay until the early 1960's.

Q: Are you aware of any current or previous uses of the site or adjoining properties which may create an environmental concern?

A: No.

Q: To the best of your knowledge has the property or any adjoining property ever been used as a gasoline station, motor repair facility, commercial printing facility, dry cleaners, photo developing laboratory, junkyard or landfill, or as a waste treatment, storage, disposal, processing or recycling facility?

A: No.

Q: Are there currently, or to the best of your knowledge have there been previously, any damaged or discarded automotive or industrial batteries, or pesticides, paints or other chemicals in individual containers of greater than 5 gal (19 L) in volume or 50 gal (190 L) in the aggregate, stored on or used at the property or at the facility?

A: No.

Q: Are there currently, or to the best of your knowledge have there been previously, any industrial drums (typically 55 gal) or sacks of chemicals located on the property or at the facility?

A: No.

Q: Has fill dirt been brought onto the property that may have originated from a contaminated site or that is of an unknown origin?

A: No.

Q: Are there currently, or to the best of your knowledge have there been previously, any pits, ponds, or lagoons located on the property in connection with waste treatment or waste disposal?

A: No.

Q: *Is there currently, or to the best of your knowledge has there been previously, any stained soil on the property?*

A: No.

Q: Are there currently, or to the best of your knowledge have there been previously, any registered or unregistered storage tanks (above or underground) located on the property, aside from the existing aboveground waste oil tank?

A: No.

Q: Are there currently, or to the best of your knowledge have there been previously, any vent pipes, fill pipes, or access ways indicating a fill pipe protruding from the ground on the property or adjacent to any structure located on the property?

A: No.

Q: Are there currently, or to the best of your knowledge have there been previously, any flooring, drains, or walls located within the facility that are stained by substances other than water or are emitting foul odors?

A: No.

Q: If the property is served by a private well or non-public water system, have contaminants been identified in the well or system that exceed guidelines applicable to the water system or has the well been designated as contaminated by any government environmental/health agency?

A: No.

Q: Does the owner or occupant of the property have any knowledge of environmental liens or governmental notification relating to past or recurrent violations of environmental laws with respect to the property or any facility located on the property?

A: No.

Q: Has the owner or occupant of the property been informed of the past or current existence of hazardous substances or petroleum products or environmental violations with respect to the property or any facility located on the property?

A: No.

Q: Does the owner or occupant of the property have any knowledge of any environmental site assessment reports prepared for the property or facility that indicated the presence of hazardous substances or petroleum products on, or contamination of, the property or recommended further assessment of the property?

A: No.

Q: Does the owner or occupant of the property know of any past, threatened, or pending lawsuits or administrative proceedings concerning a release or threatened release of any hazardous substance or petroleum products involving the property by any owner or occupant of the property?

A: No.

Q: Does the property discharge waste water on or adjacent to the property other than storm water into a sanitary sewer system?

A: No.

Q: To the best of your knowledge, have any hazardous substances or petroleum products, unidentified waste materials, tires, automotive or industrial batteries or any other waste materials been dumped above grade, buried and/or burned on the property?

A: No.

Q: Is there a transformer, capacitor, or any hydraulic equipment for which there are any records indicating the presence of PCBs?

A: No.

4.6 Other Environmental Issues

4.6.1 Asbestos Containing Materials

Asbestos is a natural mineral fiber used in the manufacture of a number of different building materials. Asbestos has also been identified as a human carcinogen. Most friable (i.e., those that are easily broken or crushed) asbestos-containing materials (ACM) were banned in building materials by 1978. By 1989, most major manufacturers had voluntarily removed non-friable ACM (i.e., flooring, roofing, and mastics/sealants) from the market. However, these materials were not banned completely.

In October 1995, the Federal Occupational Safety and Health Administration (OSHA) redefined the manner by which building materials are classified in regards to asbestos and the also the way these materials are to be handled. Under this ruling, "thermal system insulation and sprayed-on or troweled on or otherwise applied surfacing materials" applied before 1980 are considered presumed asbestos containing materials (PACM). Other building materials such as " floor or ceiling tiles, siding, roofing, transite panels" (i.e., non-friable) are also considered PACM unless tested.

There are no structures on the subject property. Therefore, the presence of ACM is not considered likely.

4.6.2 Lead-Based Paint

Lead-based paint is identified by OSHA , the Environmental Protection Agency (EPA) and the Department Housing and Urban Development Department (HUD) as being a potential health risk to humans, particularly children, based upon its effects to the central nervous system, kidneys, and bloodstream. The risk of lead-based paint has been classified by HUD based upon the age and condition of the painted surface. This classification includes the following:

- maximum risk is from paint applied before 1950
- a severe risk is present from paint applied before 1960
- a moderate risk is present from paint applied before 1970
- a slight risk is present from paint applied before 1977
- paint applied after 1977 is not expected to contain lead.

There are no structures on the property. Therefore the presence of lead-based paint is not considered likely.

4.6.3 Radon

Radon is a radioactive gas which has been identified as a human carcinogen. Radon gas is typically associated with fine-grained rock and soil, and results from the radioactive decay of radium. EPA recommends that homeowners in areas with radon screening levels greater than 4 pCi/L (picocurries per liter) conduct mitigation of radon gas to reduce exposure.

Sections 307 and 309 of the Indoor Radon Abatement Act of 1988 (IRAA) directed EPA to list and identify areas of the U.S. with the potential for elevated indoor radon levels. EPA's Map of Radon Zones (EPA-402-R-93-071) assigns each of the 3,141 counties in the U.S. to one of three zones based on radon potential:

- Zone 1 counties have a predicted average indoor radon screening level greater than 4 pCi/L.
- Zone 2 counties have a predicted average indoor radon screening level between 2 and 4 pCi/L.
- Zone 3 counties have a predicted average indoor radon screening level less than 2 pCi/L.

Based on such factors as indoor radon measurements; geology; aerial radioactivity; soil permeability; and foundation types, EPA has identified Orange County as Zone 3 (i.e., low potential for radon gas). Therefore, EEI does not consider radon as a concern at this time.

5.0 SITE RECONNAISSANCE

5.1 Purpose

The purpose of the site reconnaissance was to visually and physically observe the site, site structures, and adjoining properties for conditions indicating an existing release, past release, or threatened release of any hazardous substances or petroleum products into structures of the site, or into soil and/or groundwater beneath the site. This would include any evidence of contamination, distressed vegetation, petroleum-hydrocarbon staining, waste drums, illegal dumping, or improper waste storage/handling.

5.2 Results of Site Reconnaissance

5.2.1 Subject Site

On March 31, 2003, EEI personnel visited the entire site. Photographs 1 through 10 (**Appendix D**) document the site reconnaissance, which is summarized in **Table 2**.

EEI personnel conducted a driving and walking inspection around the perimeter of the subject property, then traversed the site from east to west and north to south. The site is located along Cristianitos Road, south of Ortega Highway. The property encompasses approximately three-hundred acres, and is situated within Cristianitos Canyon. Access to the site is through gated driveway from the west, or through the adjacent lease to the east. Several unpaved roads traverse the subject property, from Cristianitos Road towards the north-northeast part of the property.

The majority of the property is vacant, although several areas that had previously been mined for clay were noted in the central and southern areas of the property during the site visit. No evidence of contamination, petroleum-hydrocarbon staining, waste containers, and improper waste storage/handling were noted.

5.2.2 Adjacent Properties

Adjacent properties are agricultural/undeveloped to the north, south, east, and west. No environmental concerns were noted.

TABLE 2
Summary of Site Reconnaissance

ITEM	CONCERNS	COMMENTS
General Housekeeping	No	Property is in good condition.
Surface Spills	No	None observed.
Stained Soil/pavement	No	None observed.
Fill Materials	No	None observed.
Pits/ponds/lagoons	No	None observed.
Surface Impoundments	No	None observed.
AGT's/UST's	No	None observed.
Distressed Vegetation	No	None observed.
Wetlands	No	None observed.
Electrical Substations	No	None observed.
Areas of Dumping	No	None observed.
Pole-mounted Transformers	No	None observed.
Waste/scrap storage	No	None observed.
Chemical use/storage	No	None observed.

6.0 CONCLUSIONS/RECOMMENDATIONS

EEI conducted a Phase I Environmental Site Assessment (ESA) at the subject property in March/April 2003. The ESA included a review of regulatory database lists as per ASTM 1527-00. Pursuant to the requirements of Section 65962.5 of the California Government Code, the subject property was not located on the State list of identified hazardous waste and/or hazardous substance sites.

Based on a site reconnaissance, a review of physiographic, historical and regulatory information, and information provided by the property owner, no evidence of *recognized environmental conditions* has been revealed in connection with the subject site, nor any adjacent property.

7.0 REFERENCES

California Division of Mines and Geology, 1973, Geo-Environmental Maps of Orange County, California.

California Division of Mines and Geology, 1994, Fault Activity Map of California and Adjacent Areas.

California Regional Water Quality Control Board - Los Angeles Region, 1994, Water Quality Control Plan - San Diego Region: California State Water Resources Control Board Publication.

Norris, Robert M., and Webb, Robert W., 1990, Geology of California, Second Edition, John Wiley, and Sons, Inc., New York.

Southern California Earthquake Center, 1999, Faults in California - Los Angeles Region.

United States Department of Agriculture - Soil Conservation Service, 1978, Soil Survey of Orange County and Western Part of Riverside County, California.

EEI

Expertise . . Service . . *Solutions*

PHASE I ENVIRONMENTAL SITE ASSESSMENT

PLANNING AREA 7
(CRISTIANITOS CANYON)
Cristianitos Road and Ford Aerospace Drive
San Juan Capistrano, California

May 1, 2003
(Revised February 2004)

EEI Project No. V030305-38A-PA7

456 Arneill Road Camarillo CA 93010 Phone: (805) 987-8728 Fax: (805) 987-0758 e-mail: eeiven@earthlink.net

Phase I Environmental Site Assessment

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Site Location:

PLANNING AREA 7
(CRISTIANITOS CANYON)
Cristianitos Road and Ford Aerospace Drive
San Juan Capistrano, California

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1.0 INTRODUCTION

1.1 Purpose

The purpose of this Phase I Environmental Site Assessment (ESA) was to assess the possible presence of *recognized environmental conditions* in the Planning Area Seven (Cristianitos Canyon) portion of Rancho Mission Viejo, located along Cristianitos Road approximately five miles east of San Juan Capistrano, California (**Site Location Map, Figure 1**). *Recognized environmental conditions* include those property uses that may indicate the presence or likely presence of an existing, historical, or threatened release of any hazardous substances or petroleum products into structures, soil, and/or groundwater beneath the property. The term *recognized environmental conditions* is not intended to include *de minimus* conditions that generally do not present a material risk of harm to public health or the environment.

This ESA was performed in general conformance with the American Society for Testing and Materials (ASTM) *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process,* designation E1527-00.

1.2 Scope of Services

The scope of services outlined below was performed in accordance with the Agreement for Professional Services dated February 12, 2003 (Proposal 39A), between Morgan Lewis, & Bockius, LLP, and EEI.

- A review of available documents for topographic, geologic, and hydrogeologic data affecting the site.
- A review of available maps, aerial photographs and other documents to estimate historical site usage and development.
- A review of previous investigations conducted by EEI.
- A review of federal, state, county, and city documents concerning hazardous material storage, generation, and disposal, active and inactive landfills, nearby environmental concerns, and associated permits.
- Interviews with individuals having knowledge of the site.
- A site reconnaissance to ascertain the current condition of the site.
- The preparation of this report which presents our findings, conclusions, and recommendations.

1.3 Reliance

This ESA has been prepared for the sole use of Morgan Lewis, & Bockius, LLP, and Rancho Mission Viejo. This assessment should not be relied upon by other parties without the express written consent of EEI, Morgan Lewis, & Bockius, LLP, and Rancho Mission Viejo. Therefore, any use or reliance upon this assessment by a party other than Morgan Lewis, & Bockius, LLP, and Rancho Mission Viejo, shall be solely at the risk of such third party and without legal recourse against EEI, its employees, officers, or directors, regardless of whether the action in which recovery of damages is brought is based upon contract, tort, statute or otherwise.

This assessment should not be interpreted as a statistical evaluation of the site, but is rather intended to provide a preliminary indication of on-site impacts from previous site usage or the release of hazardous materials. If no significant indicators of the presence of hazardous materials are encountered during this search, this does not preclude their presence.

The findings in this report are based upon a review of published geologic and hydrogeologic information, information (both documentary and oral) provided by Rancho Mission Viejo, Ford Motor Company, Orange County Planning/Building and Safety Department, Orange County Fire Authority, Orange County Health Care Agency, Orange County Agricultural Commissioner, First Search (an environmental database retrieval system), various state and federal agencies, and field observations. Some of these data are subject to change over time. Some of these data are based on information not currently observable or measurable, but recorded by documents or orally reported by individuals.

2.0 PROPOSED PROJECT

2.1 Overall Description of Proposed Project

As proposed by Rancho Mission Viejo, the project includes 22,815 acres general planned and zoned for development of up to 14,000 dwelling units in nine planning areas and other uses and open space within four planning areas. Other uses include 91 acres of urban activity center uses, 240 acres of business park uses, 50 acres of neighborhood retail uses, up to four golf courses and approximately 15,576 acres of open space area which includes a proposed 1,034 acre regional park. Within the nine planning areas proposed for development, approximately 7,694 acres would be developed. Ranching and other agricultural activities would also be retained within a portion of the proposed open space area. Infrastructure would be constructed to support all of these uses, including road improvements, utility improvements and schools. The Planning Area Location Map (**Plate 1**) illustrates the boundaries of the proposed project.

2.2 Description of Planning Area

Planning Area Seven is located north of the existing TRW site, and this planning area would designate 1,442 acres of 1B-Suburban Residential. Approximately 1,480 dwelling units are proposed on 853 acres of this planning area. The remaining 589 acres are proposed as open space within this planning area. This planning area would also support an overlay zone with a ten-acre commercial site providing approximately 100,000 square feet of neighborhood center. Existing authorized land uses would continue until the commencement of any new proposed land use for the affected areas.

3.0 PHYSIOGRAPHIC SETTING

3.1 Site Description

The subject property is located approximately five miles east of San Juan Capistrano, south of Ortega Highway along Cristianitos Road. The property is located on portions of several existing lots, identified by assessors parcel numbers 125-150-62, 125-150-29, 125-150-35, 125-150-61 (**Parcel Map, Appendix A**).

The property is located near Cristianitos Canyon, and is bound by undeveloped land/open range in all directions. Christianitos Meadow is located to the northwest of the property, and TRW is located approximately one-half mile south of the property. According to the Orange County Planning Department, the site is zoned A-1 (general agriculture, **Zoning Information, Appendix B**).

The site is currently undeveloped/vacant, except for single storage structure located in the southeast portion of the property, and for a small area used for agricultural purposes in the northeast portion (**Site Plan, Figure 2**). The eastern half of the property was most recently occupied by Ford Philco, which operated a weapons research and testing facility from 1969 until 1993, while the western half was most recently occupied by Riverside Cement/California Portland Cement (CPC-south), which conducted a limited clay mining operation from 1988 until 1993. A description of the Ford Philco and Riverside Cement/CPC (south) lease properties is included below in section 4.6.

3.2 Topography

The site is located within and adjacent to Cristianitos Canyon, north and west of Gabino Canyon, in a series of moderately sloping, north-south trending alluvial valleys and ridges. The site elevations range from approximately 400 to 1000 feet above mean sea level (amsl). The topographic gradient in the site vicinity ranges from 0.14 to 0.33 feet per foot to the southeast (in the eastern portion) and from 0.08 to 0.20 feet per foot to the southwest (in the central and western portions). Surface drainage from the site flows south and east into Gabino Canyon, then eventually into the Pacific Ocean, approximately 5 miles to the southwest.

3.3 Regional and Local Geology

The site is located in an alluvial valley (Cristianitos Creek) on the southwestern slopes of the Santa Ana Mountains (Norris and Webb, 1990). The Santa Ana Mountains form the northwest margin of the Peninsular Ranges Geomorphic Province, and are comprised principally of granitic, metavolcanic, and sedimentary rocks of Jurassic to Pliocene age. The mountains are the result of relatively slow, late-Quaternary uplift which has shaped the range into a dissected horst block.

Sedimentary deposits in the site vicinity are a homoclinal sequence of marine and nonmarine formations including the Pliocene Capistrano and Monterey Formations, the Miocene Topanga Formation, the Eocene Sespe and Santiago Formations, the Paleocene Silverado Formation, and the Upper Cretaceous Williams and Ladd Formations (Morton, 1974). These deposits lie unconformably upon the older metamorphic and volcanic rocks, including the Jurassic Santiago Peak Volcanics and the Bedford Canyon Formation. Quaternary alluvial soils, derived primarily from weathering of the Santa Ana Mountains, form the gently sloping river terraces in the site vicinity.

Riverside Cement had previously mined the clay deposits of the Lower Silverado Formation. These clays are of three principal types, which include: 1) smooth gray suitable for refractory use; 2) pisolitic

clay; and 3) mottled red clay which grades to siltstone. In addition, coal deposits of up to 10 feet in thickness have been encountered in association with refractory clay.

Soil in the vicinity of the site has been identified by the United States Department of Agriculture - National Resource Conservation Service as belonging to the Myford, Cieneba and Alo associations (USDA, 1978). Soil in the Myford association is typically found on nearly level to moderately steep coastal terraces and consists of moderately well drained sandy loams that have a strongly developed topsoil. Soil in the Cieneba association is typically found on steep to very steep coastal foothills and consists of somewhat excessively drained sandy loams. Soil in the Alo association is typically found on strongly sloping to steep ridges and side slopes in the foothills and consists of well drained clays. Runoff in these associations is medium to rapid and the erosion hazard is moderate to high.

Structural deformation in the vicinity of the site is related to the Elsinore Fault Zone, a major northwest-southeast trending strike-slip fault zone located approximately 15 miles to the northeast. Motion along the Elsinore Fault Zone is primarily right-lateral, although a vertical component may also be present. The Elsinore Fault Zone is considered active, with major ruptures occurring roughly every 250 years at magnitudes of between 6.5 - 7.5 (SCEC, 1998). Other major faults in the vicinity of the site include the Christianitos Fault (just west of the site), the Mission Viejo Fault (just east of the site), and the Newport Inglewood Fault (offshore, southwest of the site).

3.4 Regional and Local Hydrogeology

According to the Basin Plan published by the San Diego Regional Water Quality Control Board (SDRWQCB, 1994), the site lies within the San Mateo Hydrologic Area of the San Juan Hydrologic Unit. In general, groundwater in this subarea has been designated as beneficial for domestic/municipal, agricultural, and industrial uses. Groundwater levels in the vicinity of the site are seasonally variable, but should generally occur at between 3 and 25 feet below ground surface (Rancho Mission Viejo personnel, personal communication).

The San Mateo Hydrologic Area is located within the San Mateo Creek watershed. San Mateo Creek (southeast of the site), and Christianitos Creek (west of the site) are the major drainages within this watershed. According to the SDRWQCB, the drainages within this watershed are exempt from municipal use, but have been designated as beneficial for warm water habitat, wildlife habitat, and recreational 1 and 2.

4.0 SITE BACKGROUND

4.1 Site Ownership

Information regarding site ownership was provided by Rancho Mission Viejo. The current owner is listed as the San Juan Partnership No. One and San Juan Company. The owners address is listed as PO Box 9, San Juan Capistrano, California, 92693.

4.2 Site History

EEI reviewed available information sources to evaluate historic land use in and around the property. Aerial photographs, United States Geological Survey maps, Sanborn Maps, City Directories and other sources were researched.

4.2.1 Aerial Photograph Review

Aerial photographs were reviewed to identify historical land development and any uses which may have impacted the site. Photographs dating from 1952 to 1999 were reviewed at Continental Aerial Photo in Los Alamitos, California. In addition, EEI also reviewed an aerial photograph dating from 2002 (EDAW). **Table 1** summarizes the results of the aerial photograph review. A copy of a 2000 aerial photograph is included in **Figure 3**.

TABLE 1
Summary of Aerial Photograph Review

Year	Photo ID	Comments
1952	AXK-4K-43 [(1)]	The majority of the site is undeveloped, and several dirt roads are visible traversing the property. The central and northern portions of Riverside Cement/CPC South are being mined.
1959	9-32-83 [(1)]	A pond was noted in the southeast corner of the property. No other pertinent changes were noted since the previous photograph.
1967	2-154 [(1)]	Mining was noted in the southeast portion of Riverside Cement/CPC South. No other pertinent changes were noted since the previous photograph.
1970	61-9-213 [(1)]	Structures were noted along the southeastern margin of the site (former Ford Philco lease area). The mining operation was noted in the southwestern portion of the property. The remainder of the property was noted as undeveloped.
1973	132 13-15 [(1)]	A few structures were noted along the most northern part of main road (in the former Ford Philco lease area). No other pertinent changes were noted since the previous photograph.
1977	181 15-15 [(1)]	No pertinent changes were noted since the previous photograph.
1983	14-29/15-25 [(1)]	Four large structures were noted in the northern portion of the former Ford Philco lease area, and three large structures were present in the central portion of the subject site. A large facility of approximately 10 buildings was noted in the southern portion. Riverside Cement/CPC South mining activities continue in the southwestern portion of the subject site. A large pond was noted along the southwestern margin, and a large structure was noted in the southwest corner of the subject site. No other pertinent changes were noted since the previous photograph.
1985	2761 [(1)]	The road through the central portion of the site was paved. There were at least nine buildings located along the road in the southeastern portion of the property (former Ford Philco lease area), as well as a heliopad, and vehicle storage. Along the road in the central portion of the property were at least 15 structures. Several roads were noted to traverse the property from north to south, and there was a road along the southern margin. No changes were noted to the Riverside Cement/CPC South area. No other pertinent changes were noted since the previous photograph.
1987	F290-F291 [(1)]	Three retention basins were noted in the southwestern portion (Riverside Cement/CPC South lease). The structure at the southwest corner was no longer present. No changes were noted to the Ford Philco lease area. No other pertinent changes were noted since the previous photograph.
1993	C90-4-140 [(1)]	Only one large structure was noted in the southern portion of the subject site (former Ford Philco area). No changes were noted to the Riverside Cement/CPC South lease property. The remainder of the subject site was vacant.
1995	USGS	No pertinent changes were noted since the previous photograph.
1999	C-136-44-168/167 [(1)]	No pertinent changes were noted since the previous photograph.
2002	EDAW [(2)]	No pertinent changes were noted since the previous photograph. The site appears in its current configuration.

[(1)] Aerial Photograph viewed at Continental Aerial Photographs, Los Alamitos, California

[(2)] Aerial Photograph obtained from EDAW

4.2.2 Historic Maps

EEI reviewed United States Geological Survey topographic maps dating from 1948 to1978 at the University of California at Santa Barbara, Map and Imagery Laboratory. The maps were published by the United States Geological Survey.

The 1948 map notes the presence of two clay mines in the southwestern portion of the property.

The 1968 map notes the presence of two additional clay mines in the western portion, and a corral in the southwestern corner. Cristianitos Road is present to the west, and several dirt roads are noted to traverse the property from north to south. No development of the remainder of the subject site was indicated.

The 1975 map notes the presence of five structures in the northern portion of the property, just north of the access road, two structures in the central portion, and two structures along the southern margin, all in the boundaries of the former Ford Philco lease area. The clay mines and the corral were still noted in the western portion (on the Riverside Cement/CPC South lease area). No other changes were noted.

No changes were noted on the 1978 map.

4.2.3 City Directories

EEI reviewed historic city directories for southern Orange County at the Central Library in Santa Ana, California. There were no listings for the subject property.

4.2.4 Sanborn Maps

EEI researched available Sanborn Fire Insurance Maps of the subject site. Sanborn Maps provide detailed information on site structures, uses, and occupancies and were typically utilized by insurance companies to evaluate potential fire risk. Based on EEI's review, no Sanborn Fire Insurance Maps are available for the area surrounding the subject site, indicating little commercial development prior to 1950.

4.2.5 Orange County Building and Safety Department Files

EEI contacted the Orange County Building and Safety Department for information related to development of the subject property. EEI was previously able to review building permits issued to the tenant of 33600 Ortega Highway (the eastern portion of the subject property), Ford Aeronautics, which indicated building activity from 1969 through at least 1985 (Section 4.6). Other subject property sites do not have physical addresses. Therefore, no permits were available for review.

4.3 Regulatory Database Search

EEI reviewed known electronic database listings for possible hazardous waste generating establishments in the vicinity of the site, as well as on sites in the area with known environmental concerns. Facilities were identified by county, state, or federal agencies and either generate, store, or dispose of hazardous materials. The majority of information in this section was obtained from FirstSearch®, an environmental information/database retrieval service. A copy of the FirstSearch® report is provided in **Appendix C**, along with a description of the individual databases. The subject property was not listed in any of the databases reviewed as having environmental concerns. For discussion purposes, the term "non-

geocoded" is applied to sites that either have non-existent or incomplete addresses. EEI has attempted to locate these sites, based on the location description provided in the records search. Below is a list of databases that were reviewed in the preparation of this report.

4.3.1 Federal Databases

National Priority List (NPL) (Superfund) - No listings within one mile of the subject site.

Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) - No listings within one mile of the subject site.

No Further Remedial Actions Planned (NFRAP) - No listings within one mile of the subject site.

RCRA TSD Facility list (RCRA-D) - No listings within one mile of the subject site.

RCRA Corrective action sites (COR) - No listings within one mile of the subject site.

RCRA Generators (RCRA-G) -The Environmental Protection Agency (EPA) regulates generators of hazardous material through the Resource Conservation and Recovery Act (RCRA). All hazardous waste generators are required to notify EPA of their existence by submitting the Federal Notification of Regulated Waste Activity Form (EPA Form 8700-12) or a state equivalent form. Three non-geocoded sites were identified. Upon further evaluation, EEI located these sites to be located greater than one mile from the subject property. Based on this distance, these sites are not considered environmental concerns at this time.

RCRA No Longer Regulated (NLR) - No listings within one mile of the subject site.

Emergency Response Notification System (ERNS) - Eleven non-geocoded sites were reported within one mile of the subject property. The calls appear to be mostly highway/railway related with no or minor amounts of materials released. All eleven sites appear to be at least one half mile away from the subject site. Therefore, these reports are not considered environmental concerns at this time.

The subject site was not identified by any of the sources listed above as having an environmental concern or operating permit.

4.3.2 State and Regional Databases

Sites that are Contaminated or Potentially Contaminated by Hazardous Wastes (State Sites) - One non-geocoded site was reported within one mile of the subject property. The **Capistrano Unified School District** proposed a school location within one mile of the subject site. The Department of Toxic Substances Control was called to the location for an inspection. No action was needed. Therefore, this incident is not considered an environmental concern.

Sites with a record of spills, leaks, investigations, and cleanups (Spills - 1990) - No listings within one mile of the subject site.

Solid Waste Landfills (SWL) - Seven non-geocoded sites were reported were reported within one mile of the subject property. **Prima Deschecha Sanitation Landfill** (at the end of La Pata Road) is greater than one mile from the subject site. This site disposes of non-hazardous wastes. **La Pata Greenwaste Facility** (31748 La Pata Avenue) is greater than one mile from the subject site. Other reported sites are either greater than one mile from the subject site or do not have enough information

to be properly located. Based on their distances from the subject property, none of these sites are considered environmental concerns at this time.

Establishments Issued a Permit to Track Site Status as a hazardous waste generator, gas station, TSD, underground tanks, violations, or unauthorized releases (Permits) - No listings within one mile of the subject site.

Other Unique Databases (Other) - One site was reported within one mile of the subject property. **Lomas San Juan Model Home Site** was identified as a LUST site. This case is further discussed in the LUST section below.

Permitted Underground/Aboveground Storage Tanks (REG UST/AST) - Four non-geocoded sites were reported within one mile of the subject property. Upon further evaluation, EEI located these sites greater than one mile from the subject site. Based on the distance and the fact that operating permits are not considered rationale for further investigation, these sites are not considered an environmental concern at this time.

Leaking Underground Storage Tanks (LUST) - The subject property and one other site were identified within one mile of the subject property. The former tenant of the property, **Ford Aerospace** (33600 Ortega Highway, approximately one half mile south of the subject site) reported as gasoline release on January 1, 1965. Reportedly, only the surrounding soil was impacted. The contaminated soil was removed and the case was closed March 19, 1992. EEI also reviewed other documents regarding the LUST case at the site, and a discussion of these reports is included within **Appendix E**. Based on several factors, including the status of the case (closed) this is not considered an environmental concern at this time. The second site, **Lomas San Juan Model Home Site**, is non-geocoded and the location of the site is unknown. A gasoline leak was reported on January 1, 1965, and the aquifer is reportedly impacted. Soil at the site was excavated and treated or removed. The site was closed on December 11, 1991. Based on the status of the case (closed), this site is not considered an environmental concern at this time.

Releases into air and surface water (Releases) - Two non-geocoded sites were reported within one mile of the subject property. These sites are located along Oso Street, San Juan Capistrano, which is greater than one mile from the subject site. Therefore, these sites are not considered an environmental concern at this time.

PCB Activity Database System (PADS) - No listings within one mile of the subject site.

Ford Philco, located in the eastern portion of the subject property was identified on the LUST database. The case is closed and is not considered an environmental concern at this time.

4.4 Regulatory Agency Review

4.4.1 Orange County Fire Authority

EEI contacted the Orange County Fire Authority during previous environmental site assessments at the subject property. According to Fire Department personnel, the site does not currently hold any permits, does not store any chemicals, has no recorded violations, and it is currently not under a regular inspection schedule.

4.4.2 Orange County Health Care Agency

EEI reviewed OCHCA databases including Leaking Underground Fuel Tanks (LUFT), Ground Water Cleanup Sites, Underground Tank Facilities, Non-petroleum Underground Tanks, Hazardous Waste Generators and Land Fill Sites, to determine if the subject site was listed as having an environmental concern. The site was identified as having a closed LUFT case. According to the information reviewed, **Ford Aerospace** (33600 Ortega Highway) reported gasoline and diesel releases in 1990. Reportedly only the soil was impacted, and the cases were closed in March 1992. In January 2003, EEI completed a Phase I ESA for this site (EEI, 2003), and this report is discussed below in section 4.6.2.

4.4.3 California Regional Water Quality Control Board

EEI contacted the California Regional Water Quality Control Board - San Diego Region (SDRWQCB) to determine whether the site or any nearby property was listed as having a leaking underground tank, spill, leak, or aboveground tank problem. In addition, EEI reviewed the Underground Storage Tank Information System (LUSTIS) and Spills, Leaks, Investigations, and Cleanup (SLIC) List, published by the SDRWQCB. There were no listings for the subject site nor any adjacent property.

4.4.4 Review of Division of Oil, Gas and Geothermal Resources Files

EEI reviewed information regarding oil production near the site provided by the California Division of Oil, Gas, and Geothermal Resources. According to the information reviewed, no petroleum exploration or production has occurred on or adjacent to the site. EEI identified one underground jet fuel pipeline (16-inch), operated by Kinder Morgan, which is located in the southwest corner of the property (**Figure 2**).

4.5 Interview with Property Owner

In August 2001, EEI contacted Fred Vorhees, Ranch Manager for Rancho Mission Viejo (property owner), who was interviewed regarding key site information for the former Riverside Cement/CPC South lease property (EEI, 2001). Mr. Vorhees indicated that he has been working at the Ranch for approximately 30 years and is familiar with the subject property. Mr. Vorhees stated that a portion of the property was used for clay mining. No other items of environmental concern were noted during the interview.

In January 2003, EEI contacted Mr. Vorhees and interviewed him regarding key site information for the Ford Philco lease (EEI, 2003). Mr. Vorhees stated that there was historically a maintenance shop on the southwest portion of the property, along with some UST's. No other items of environmental concern were noted during the interview.

In April 2003, EEI contacted Mr. Vorhees and interviewed him regarding key site information for the remainder of the subject property. A list of the questions asked, and a summary of their responses, is included below.

Q: Is the property or any adjoining property used for an industrial or agricultural use?

A: Yes, a small part of the property in the north is farmed..

Q: To the best of your knowledge, was the property or any adjoining property used for industrial or agricultural purposes in the past?

A: A portion of the property was used for farming, and the rest as open range.

Q: Are you aware of any current or previous uses of the site or adjoining properties which may create an environmental concern?

A: No.

Q: To the best of your knowledge has the property or any adjoining property ever been used as a gasoline station, motor repair facility, commercial printing facility, dry cleaners, photo developing laboratory, junkyard or landfill, or as a waste treatment, storage, disposal, processing or recycling facility?

A: No.

Q: Are there currently, or to the best of your knowledge have there been previously, any damaged or discarded automotive or industrial batteries, or pesticides, paints or other chemicals in individual containers of greater than 5 gal (19 L) in volume or 50 gal (190 L) in the aggregate, stored on or used at the property or at the facility?

A: No.

Q: Are there currently, or to the best of your knowledge have there been previously, any industrial drums (typically 55 gal) or sacks of chemicals located on the property or at the facility?

A: No.

Q: Has fill dirt been brought onto the property that may have originated from a contaminated site or that is of an unknown origin?

A: No.

Q: Are there currently, or to the best of your knowledge have there been previously, any pits, ponds, or lagoons located on the property in connection with waste treatment or waste disposal?

A: No.

Q: *Is there currently, or to the best of your knowledge has there been previously, any stained soil on the property?*

A: No.

Q: Are there currently, or to the best of your knowledge have there been previously, any registered or unregistered storage tanks (above or underground) located on the property, aside from the existing aboveground waste oil tank?

A: No.

Q: Are there currently, or to the best of your knowledge have there been previously, any vent pipes, fill pipes, or access ways indicating a fill pipe protruding from the ground on the property or adjacent to any structure located on the property?

A: No.

Q: Are there currently, or to the best of your knowledge have there been previously, any flooring, drains, or walls located within the facility that are stained by substances other than water or are emitting foul odors?

A: No.

Q: If the property is served by a private well or non-public water system, have contaminants been identified in the well or system that exceed guidelines applicable to the water system or has the well been designated as contaminated by any government environmental/health agency?

A: No.

Q: Does the owner or occupant of the property have any knowledge of environmental liens or governmental notification relating to past or recurrent violations of environmental laws with respect to the property or any facility located on the property?

A: No.

Q: Has the owner or occupant of the property been informed of the past or current existence of hazardous substances or petroleum products or environmental violations with respect to the property or any facility located on the property?

A: No.

Q: Does the owner or occupant of the property have any knowledge of any environmental site assessment reports prepared for the property or facility that indicated the presence of hazardous substances or petroleum products on, or contamination of, the property or recommended further assessment of the property?

A: No.

Q: Does the owner or occupant of the property know of any past, threatened, or pending lawsuits or administrative proceedings concerning a release or threatened release of any hazardous substance or petroleum products involving the property by any owner or occupant of the property?

A: No.

Q: Does the property discharge waste water on or adjacent to the property other than storm water into a sanitary sewer system?

A: No.

Q: To the best of your knowledge, have any hazardous substances or petroleum products, unidentified waste materials, tires, automotive or industrial batteries or any other waste materials been dumped above grade, buried and/or burned on the property?

A: No.

Q: Is there a transformer, capacitor, or any hydraulic equipment for which there are any records indicating the presence of PCBs?

A: No.

4.6 Previous Assessments

4.6.1 Phase I Environmental Site Assessment - Riverside Cement/CPC South

In August 2001, EEI completed a Phase I environmental site assessment of the property occupied by Riverside Cement/CPC South, located at Cristianitos Road and Ford Aerospace road in the western portion of the subject property (EEI, 2001). According to the report, the site was first leased by Riverside Cement, then most recently by California Portland Cement Corporation (CPC South). Approximately 55 acres of the site was used for open clay mining, and the remainder was left as open space. The subject site was not identified by any search database as having an environmental concern or operating permit.

The site was not identified with the Fire Department as holding any permits or storing any hazardous materials, nor was it listed with the Orange County Health Care Agency as an environmental concern. During EEI's site visit, clay pit mining was noted in six locations, along with four ponds associated with clay mining. According to the report, no evidence of recognized environmental concerns were revealed in connection with the subject site.

4.6.2 Phase I Environmental Site Assessment - Former Ford Philco Lease

In January 2003, EEI completed a Phase I environmental site assessment of the property formerly occupied by Ford Philco, located at 33600 Ortega Highway in the eastern portion of the subject site (EEI, 2003). At the time of the report, the site was vacant, except for a single storage structure. However, the site was occupied by Ford Aerospace from 1969 to 1990, and then by Loral Aeronautics (a division of Ford) until 1993. Ford Philco operated a weapons research and testing facility, including gunnery ranges for the M1 Abrams Tank and related systems.

The site was identified on the RCRA generators database as a small waste generator, on the leaking underground fuel tank (LUFT) database, and on the hazardous waste information system (HWIS). According to the report, the LUFT case was described as soil-impacted only, and the case was closed by OCHCA in 1992. The other listings were for operating permits only, which are not considered as environmental concerns. No concerns were identified with the Fire Department or with OCHCA. In addition, no evidence of environmental concerns was observed at the property during the time of EEI's assessment.

Several previous environmental assessment reports performed at the site were reviewed by EEI as part of the ESA. These described investigative and decommissioning activities conducted at the site, and included: 1) Radiological decontamination and decommissioning of the gun range; 2) Underground Storage Tank (UST) closures; 3) Asbestos assessments fo the various structures; 4) Demilitarization of range impact areas; 5) Environmental site investigation and remediation of contaminated areas; and 6) Explosive ordinance disposal (EOD) range closure. A complete discussion of these reports is included in the report. Based on the information reviewed and the fact that regulatory closure of the facility had been granted by the DTSC in 1995, no further investigation was recommended by EEI.

4.7 Other Environmental Issues

4.7.1 Asbestos Containing Materials

Asbestos is a natural mineral fiber used in the manufacture of a number of different building materials. Asbestos has also been identified as a human carcinogen. Most friable (i.e., those that are easily broken or crushed) asbestos-containing materials (ACM) were banned in building materials by 1978. By 1989, most major manufacturers had voluntarily removed non-friable ACM (i.e., flooring, roofing, and mastics/sealants) from the market. However, these materials were not banned completely.

In October 1995, the Federal Occupational Safety and Health Administration (OSHA) redefined the manner by which building materials are classified in regards to asbestos and the also the way these materials are to be handled. Under this ruling, "thermal system insulation and sprayed-on or troweled on or otherwise applied surfacing materials" applied before 1980 are considered presumed asbestos containing materials (PACM). Other building materials such as " floor or ceiling tiles, siding, roofing, transite panels" (i.e., non-friable) are also considered PACM unless tested.

An ACM survey was not included as a part of this ESA. However, an ACM survey was included as part of the site decommissioning procedures for the former Ford Philco lease property in 1992. The results of these tests are discussed in the Phase I report (EEI, 2003). Based on the information reviewed and EEI's site reconnaissance, the presence of ACM's in the remaining site structure is considered unlikely.

4.7.2 Lead-Based Paint

Lead-based paint is identified by OSHA , the Environmental Protection Agency (EPA) and the Department Housing and Urban Development Department (HUD) as being a potential health risk to humans, particularly children, based upon its effects to the central nervous system, kidneys, and bloodstream. The risk of lead-based paint has been classified by HUD based upon the age and condition of the painted surface. This classification includes the following:

- maximum risk is from paint applied before 1950
- a severe risk is present from paint applied before 1960
- a moderate risk is present from paint applied before 1970
- a slight risk is present from paint applied before 1977
- paint applied after 1977 is not expected to contain lead.

A lead-based paint survey was not included as part of this ESA. However, based on the date of construction (1970's), the presence of lead based paint in the remaining structure is considered likely.

4.7.3 Radon

Radon is a radioactive gas which has been identified as a human carcinogen. Radon gas is typically associated with fine-grained rock and soil, and results from the radioactive decay of radium. EPA recommends that homeowners in areas with radon screening levels greater than 4 pCi/L (picocurries per liter) conduct mitigation of radon gas to reduce exposure.

Sections 307 and 309 of the Indoor Radon Abatement Act of 1988 (IRAA) directed EPA to list and identify areas of the U.S. with the potential for elevated indoor radon levels. EPA's Map of Radon

Zones (EPA-402-R-93-071) assigns each of the 3,141 counties in the U.S. to one of three zones based on radon potential:

- Zone 1 counties have a predicted average indoor radon screening level greater than 4 pCi/L.
- Zone 2 counties have a predicted average indoor radon screening level between 2 and 4 pCi/L.
- Zone 3 counties have a predicted average indoor radon screening level less than 2 pCi/L.

Based on such factors as indoor radon measurements; geology; aerial radioactivity; soil permeability; and foundation types, EPA has identified Orange County as Zone 3 (i.e., low potential for radon gas). Therefore, EEI does not consider radon as a concern at this time.

5.0 SITE RECONNAISSANCE

5.1 Purpose

The purpose of the site reconnaissance was to visually and physically observe the site, site structures, and adjoining properties for conditions indicating an existing release, past release, or threatened release of any hazardous substances or petroleum products into structures of the site, or into soil and/or groundwater beneath the site. This would include any evidence of contamination, distressed vegetation, petroleum-hydrocarbon staining, waste drums, illegal dumping, or improper waste storage/handling.

5.2 Results of Site Reconnaissance

5.2.1 Subject Site

EEI conducted a drive-by reconnaissance of the Riverside Cement/CPC South and Ford Philco portions of the subject property, during previous environmental site assessment investigations in July 2001, May 2002, and June 2002. The information collected during those site reconnaissances are included within the individual reports (EEI, 2001 and EEI, 2003), and a brief summary is included above in Section 4.6.

On March 31, 2003, EEI personnel conducted a drive-by reconnaissance of the remainder of the property. Photographs 1 through 16 (**Appendix D**) document the site reconnaissance, which is summarized in **Table 2**.

EEI personnel conducted a driving inspection around the perimeter of the subject property, then traversed the site from east to west and north to south on available roads. The site consists largely of undeveloped open range, and is located east of Christianitos Creek. The site is situated along two broad, north-south trending alluvial valleys, which slope moderately to the south and west. A prominent ridgeline separates the two valleys, while a second ridegline forms the eastern margin of the property.

Clay pit mining is evident in six locations on the western half of the property, principally in the central portion along a distinctive ridegline. The mines are generally large, multilevel pads surrounded by large stockpiles of clay. Four large ponds, associated with the clay pits, are also present in the southern portion of the site. Unpaved roadways hauls roads provide access to the mine areas and ponds.

A large corral area was noted in the southwestern margin of the site, along Ford Aerospace Road. In addition, a small windmill was noted along the southern property margin, along Talega Creek. A small area in the northern portion of the property is being cultivated for citrus crops.

There is one structure remaining on site. This steel storage building is located in a fenced compound along the southeastern margin of the property. There are paved roads which run along the western and southern margins of the property, and also a paved road which bisects the property, running from south to north until looping west into Cristianitos Road. Several concrete slabs and driveways were noted along this central paved road, indicating the former position of structures and facilities at the former Ford Philco facility. A water tank and utility shed were also noted along this road near the center of the property.

A large graded area was noted along the southern margin of the property, along Talega Creek. This area corresponds to the former impact area of the gunnery range. No evidence of spent ordinance was noted. A second graded area was noted along the southern margin of the property, at the intersection with the central paved road, in the location of the former maintenance shop. No evidence of stained soil or waste storage/handling was noted in this area.

Signs indicating the presence of a buried petroleum pipeline were noted in the southwest portion of the site. The pipeline apparently enters the property from the west, along Cristianitos Road, then cuts southeast across the site, exiting along Gabino Creek onto the adjacent TRW property to the south.

No evidence of contamination, distressed vegetation, petroleum-hydrocarbon staining, waste drums, illegal dumping, or improper waste storage/handling were noted during the site reconnaissance.

TABLE 2
Summary of Site Reconnaissance

ITEM	CONCERNS	COMMENTS
Surface Spills	No	None observed.
Stained Soil/pavement	No	None observed.
Fill Materials	No	None observed.
Pits/ponds/lagoons	No	None observed.
Surface Impoundments	No	None observed.
Railroad Spurs	No	None observed
AGT's/UST's	No	None observed.
Distressed Vegetation	No	None observed.
Electrical Substations	No	None observed.
Areas of Dumping	No	None observed.
Pole-mounted Transformers	No	None observed.
Waste/scrap storage	No	None observed.
Chemical use/storage	No	None observed.

5.2.2 Adjacent Properties

Adjacent properties are agricultural/undeveloped to the north, east, and west. The TRW is located to the south. However, a large buffer (approximately one-quarter mile) was observed between the southern margin of the property and the main TRW facility. Therefore, no environmental concerns were noted.

6.0 CONCLUSIONS/RECOMMENDATIONS

EEI conducted a Phase I Environmental Site Assessment (ESA) at the subject property in March/April 2003. The ESA included a review of regulatory database lists as per ASTM 1527-00. Pursuant to the requirements of Section 65962.5 of the California Government Code, the subject property was not located on the State list of identified hazardous waste and/or hazardous substance sites.

Based on a site reconnaissance, a review of physiographic, historical and regulatory information, and information provided by the property owner, no evidence of *recognized environmental conditions* has been revealed in connection with the subject site, nor any adjacent property, except for the following:

1. A variety of potential environmental concerns were previously identified at the former **Ford Philco** site. These included the manufacturing and testing of depleted uranium ammunition rounds, the presence of three UST's (one 10,000-gallon diesel, one 2,000-gallon gasoline, and one 3,000-gallon wastewater), removed from the site in 1990, the former presence of three target range impact areas, and a number of site locations where surface spillage or contaminated soils had been identified. However, based on a review of documentation provided by Ford Philco, all of these potential concerns have been addressed, and the site has been remediated in accordance with applicable regulatory action levels. Therefore, no further investigation related to these issues appears to be warranted.

2. Evidence of past agricultural uses has been revealed. If residential or other potentially health-sensitive uses are contemplated (e.g., schools, child care facilities, etc.), EEI recommends that an investigation be conducted to assess the possible presence of residual pesticides in accordance with DTSC's Interim Guidance for Sampling Agricultural Soils dated June 28, 2000.

7.0 REFERENCES

California Division of Mines and Geology, 1973, Geo-Environmental Maps of Orange County, California.

California Division of Mines and Geology, 1994, Fault Activity Map of California and Adjacent Areas.

California Regional Water Quality Control Board - San Diego Region, 1994, Water Quality Control Plan - San Diego Region: California State Water Resources Control Board Publication.

EEI, August 2001, Phase I Environmental Site Assessment - Riverside Cement/CPC South, Cristianitos Road and Ford Aerospace Drive, San Juan Capistrano, California.

EEI, January 2003, Phase I Environmental Site Assessment - Former Ford Philco Lease, 33600 Ortega Highway, San Juan Capistrano, California.

Morton, P K., 1974*, Geology and Engineering Geologic Aspects of the South Half of the Canada Gobernadora Quadrangle, Orange County, California,* California Division of Mines and Geology.

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EEI

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PHASE I ENVIRONMENTAL SITE ASSESSMENT

PLANNING AREA 8
TRW (Northrop Grumman Space Technology)

33000 Avenida Pico
San Clemente, California

May 15, 2003
(Revised February 2004)

EEI Project No. V030305-38A-PA8

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Phase I Environmental Site Assessment

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Site Location:

PLANNING AREA 8
TRW (Northrop Grumman Space Technology)
33000 Avenida Pico
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1.0 INTRODUCTION

1.1 Purpose

The purpose of this Phase I Environmental Site Assessment (ESA) was to assess the possible presence of *recognized environmental conditions* at Planning Area 8, including the TRW (currently known as Northrop-Grumman Space Technology) Capistrano Test Site (CTS) located at 33000 Avenida Pico in San Clemente, California (**Site Location Map, Figure 1**). *Recognized environmental conditions* include those property uses that may indicate the presence or likely presence of an existing, historical, or threatened release of any hazardous substances or petroleum products into structures, soil, and/or groundwater beneath the property. The term *recognized environmental conditions* is not intended to include *de minimus* conditions that generally do not present a material risk of harm to public health or the environment.

This ESA was performed in general conformance with the American Society for Testing and Materials (ASTM) *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process,* designation E1527-00.

1.2 Scope of Services

The scope of services outlined below was performed in accordance with the Agreement for Professional Services dated March 1, 1999 (Proposal 38A), between Morgan, Lewis, & Bockius, LLP, and EEI.

- A review of available documents for topographic, geologic, and hydrogeologic data affecting the site.
- A review of available maps, aerial photographs and other related information to evaluate historical site usage and development.
- A review of previous environmental investigation reports prepared by Tetra Tech, Inc., McLaren Environmental Engineering, and Riedel Environmental Services.
- A review of federal, state, county, and city documents concerning hazardous material storage, generation, and disposal, active and inactive landfills, nearby environmental concerns, and associated permits.
- Interviews with individuals having knowledge of the site.
- A site reconnaissance to ascertain the current condition of the site.
- The preparation of this report which presents EEI's findings, conclusions, and recommendations.

1.3 Reliance

This ESA has been prepared for the sole use of Morgan, Lewis, & Bockius, LLP, and Rancho Mission Viejo. This assessment should not be relied upon by other parties without the express written consent of EEI, Morgan, Lewis, & Bockius, LLP, and Rancho Mission Viejo. Therefore, any use or reliance upon this assessment by a party other than Morgan, Lewis, & Bockius, LLP, and Rancho Mission Viejo, shall be solely at the risk of such third party and without legal recourse against EEI, its employees, officers, or directors, regardless of whether the action in which recovery of damages is brought is based upon contract, tort, statute or otherwise.

This assessment should not be interpreted as a quantitative evaluation of the site, but is rather intended to provide a preliminary and qualitative indication of on-site impacts from previous site usage or the release of hazardous materials. If no significant indicators of the presence of hazardous materials are encountered during this search, this report does not preclude their presence.

The findings in this report are based upon a review of published geologic and hydrogeologic information, information (both documentary and oral) provided by Rancho Mission Viejo, TRW (Northrop Grumman Space Technology), Orange County Planning/Building and Safety Department, Orange County Fire Authority, Orange County Health Care Agency, First Search (an environmental database retrieval system), various state and federal agencies, and field observations. Some of these data are subject to change over time. Some of these data are based on information not currently observable or measurable, but recorded by documents or orally reported by individuals.

2.0 PROPOSED PROJECT

2.1 Overall Description of Proposed Project

As proposed by Rancho Mission Viejo, the project includes 22,815 acres general planned and zoned for development of up to 14,000 dwelling units in nine planning areas and other uses and open space within four planning areas. Other uses include 91 acres of urban activity center uses, 240 acres of business park uses, 50 acres of neighborhood retail uses, up to four golf courses and approximately 15,576 acres of open space area which includes a proposed 1,034 acre regional park. Within the nine planning areas proposed for development, approximately 7,694 acres would be developed. Ranching and other agricultural activities would also be retained within a portion of the proposed open space area. Infrastructure would be constructed to support all of these uses, including road improvements, utility improvements and schools. The **Planning Area Location Map** is included in **Plate 1**.

2.2 Description of Planning Area

This planning area is located south of Planning Area 7 and north of the southern RMV property boundary. The plan proposes 1,264 gross acres of 1B-Suburban Residential, supporting 1,400 dwelling units on 1,092 acres. Open space (172 acres) is also proposed within this planning area. Within an overlay zone, an additional ten acres of commercial development would provide a total of 100,000 square feet of neighborhood center. This area would also support overlay zones of approximately 80 acres of proposed business park with 1,220,000 square feet of business park uses, and 20 acres for a golf-oriented resort. Existing authorized land uses would continue until the commencement of any new proposed land use for the affected area.

3.0 PHYSIOGRAPHIC SETTING

3.1 Site Description

The subject property is located in southeastern Orange County, approximately five miles northeast of San Clemente. The property encompasses approximately 2,700 acres, and is part of several existing lots, identified by assessors parcel numbers 124-100-09, 124-100-33, 124-100-54, 125-150-23 and 125-150-49 (**Parcel maps, Appendix A**).

The property is located at the northeast terminus of Avenida Pico. It is bounded by undeveloped land/open range to the north, by residential and undeveloped property to the west, and by Camp Pendleton to the south and east. According to the Orange County Planning Department, the site is zoned A-1 (general agriculture, **Zoning Information, Appendix B**).

The site has been occupied by the TRW (now Northrop Grumman Space Technology) Capistrano Test Site (CTS) since 1963 (**Site Plan, Figure 2**). CTS is used to develop and test directed energy systems, spacecraft and rocket propulsion systems, and antennas. Prior site uses have also included the development and testing of "clean coal" technology. Facilities at the property include office and research facilities, a chemical laboratory (Chem Lab), a fossil energy test site (FETS), a number of testing and monitoring facilities including the high energy propulsion test site (HEPTS), vertical engine test site (VETS), and high altitude test stand (HATS), and various maintenance and support structures.

3.2 Topography

The site is located on an east-west rending ridge, north of Talega Canyon and south of Gabino and La Paz Canyons. The site elevations range from approximately 100 feet to over 1100 feet above mean sea level (amsl). The topographic gradient in the site vicinity ranges from 0.14 to 0.33 feet per foot to the southwest and from 0.14 to 0.20 feet per foot to the southeast. Surface drainage from the site flows west and south into Christianitos Creek, or south into Talega Creek, then eventually into the Pacific Ocean, approximately 4 miles to the southwest.

3.3 Regional and Local Geology

The site is located on the southwestern slopes of the Santa Ana Mountains (Norris and Webb, 1990). The Santa Ana Mountains form the northwest margin of the Peninsular Ranges Geomorphic Province, and are comprised principally of granitic, metavolcanic, and sedimentary rocks of Jurassic to Pliocene age. The mountains are the result of relatively slow, late-Quaternary uplift which has shaped the range into a dissected horst block.

Sedimentary deposits in the site vicinity are a homoclinal sequence of marine and nonmarine formations including the Pliocene Capistrano and Monterey Formations, the Miocene Topanga Formation, the Eocene Sespe and Santiago Formations, the Paleocene Silverado Formation, and the Upper Cretaceous Williams and Ladd Formations (Morton, 1974). These deposits lie unconformably upon the older metamorphic and volcanic rocks, including the Jurassic Santiago Peak Volcanics and the Bedford Canyon Formation. Quaternary alluvial soils, derived primarily from weathering of the Santa Ana Mountains, form the gently sloping river terraces in the site vicinity.

Soil in the vicinity of the site has been identified by the United States Department of Agriculture - National Resource Conservation Service as belonging to a number of soil series including Alo varient clays, Cienaba sandy loam, Myford sandy loam, and Yorba cobbly sandy loam (USDA, 1978). Soils in these series are typically found on foothill slopes, ridgetops, terraces, and terrace escarpments, and generally consists of moderate to well drained gravelly and sandy loams.

Structural deformation in the vicinity of the site is related to the Elsinore Fault Zone, a major northwest-southeast trending strike-slip fault zone located approximately 15 miles to the northeast. Motion along the Elsinore Fault Zone is primarily right-lateral, although a vertical component may also be present. The Elsinore Fault Zone is considered active, with major ruptures occurring roughly every 250 years at magnitudes of between 6.5 - 7.5 (SCEC, 1998). Other major faults in the vicinity of the site include the Christianitos Fault (just west of the site), Mission Viejo Fault (eastern portion of the site), and the Newport Inglewood Fault (southwest of the site).

3.4 Regional and Local Hydrogeology

According to the Basin Plan published by the San Diego Regional Water Quality Control Board (SDRWQCB, 1994), the site lies within the San Mateo Hydrologic Area of the San Juan Hydrologic Unit. In general, groundwater in this subarea has been designated as beneficial for domestic/municipal, agricultural, and industrial uses. Groundwater levels in the vicinity of the site are seasonally variable, but should generally occur at between 15 and 50 feet below ground surface (Tetra Tech, 1987).

The San Mateo Hydrologic Area is located within the San Mateo Creek watershed. San Mateo Creek (southeast of the site), and Christianitos Creek (west of the site) are the major drainages within this watershed. According to the SDRWQCB, the drainages within this watershed are exempt from municipal use, but have been designated as beneficial for warm water habitat, wildlife habitat, and recreational uses 1 and 2.

4.0 SITE BACKGROUND

4.1 Site Ownership

Information regarding site ownership was provided by Rancho Mission Viejo. The current owner is listed as the San Juan Company. The owners address is listed as PO Box 9, San Juan Capistrano, California, 92693.

4.2 Site History

EEI reviewed available information sources to evaluate historic land use in and around the property. Aerial photographs, United States Geological Survey maps, Sanborn Maps, City Directories and other sources were researched.

4.2.1 Aerial Photograph Review

Aerial photographs were reviewed to identify historical land development and any uses which may have impacted the site. Photographs dating from 1952 to 1999 were reviewed at Continental Aerial Photos in Los Alamitos, California. In addition, EEI also reviewed select photographs from 1974, 1975, 1977, 1978. 1979, 1981, 1987, and 1993 from TRW (Northrop-Grumman) archives, a 1995 photograph from USGS, and a 2003 aerial photograph from GlobeXplorer. **Table 1** summarizes the results of the aerial photograph review. A copy of the 1995 aerial photograph is included in **Figure 3**.

TABLE 1
Summary of Aerial Photograph Review

Year	Photo ID	Comments
1952	AXK - 4K- 43 [1]	Property is vacant and covered by thick vegetation. An unpaved road cuts through the property from west to east.
1959	9-32-82[1]	No significant changes since the previous photograph noted.
1967	2-154[1]	Buildings are present in several areas. In the CHEM LAB area the Chemical Laboratory Building is present. Two structures are present in the ADMIN/RANGES area, south of the main road (Test support Building and the Central Services Building). In the HEPTS area three structures are present (Buildings 43A, 43D, 43F), in the Main Control area the Control Center Building (42A) is present, in the VETS area Building 42E is present, and west of Main Control Building 45A is present.
1970	61-9-213[1]	No significant changes since the previous photograph noted.
1973	132 13-15[1]	Development of the RANGES area north of the ADMIN area (Buildings 41L, 41NA and 41NB) and south of ADMIN area (Building 41M) is viewed. Chem Lab only contains two structures.
1975	157 15-25[1]	Parking Lot present in the current location of Boneyard Storage. Chemical Laboratory Building and two test cells present in CHEM LAB area.
1977	181 15-16[1]	The Office Building (41P) and Guard Post (41J) in ADMIN/ RANGES area is present. In the VETS area Building 42K is present. FETS area is a vacant lot. The road to FETS area does not yet exist.
1983	15-27[1]	Storage structures are present in CHEM LAB (Building 44F). The Boneyard Storage area contains two structures (42T, 42Z). Structures are also present in FETS (Building 46A), and VETS (Buildings 42Y).
1987	F291[1]	Many new structures are present. In the VETS area Buildings 42A and 42J are present. In the Boneyard Storage area south of main control an additional structure is present (42AT). In the HEPTS area, Buildings 43G and 43GA are present. The FETS and HATS areas have many new structures present. The HPM Facility Building south of the HATS area is also present.
1995	USGS[2]	No significant changes are noted.
1999	C-136-45-176[1]	No significant changes are noted.
2003	GlobeXplorer [3]	The site appears in its current configuration.

[1] Aerial Photograph viewed at Continental Aerial Photographs, Los Alamitos, California
[2] Aerial Photograph obtained from USGS
[3] Aerial Photograph obtained from Mapquest GlobeXplorer

4.2.2 Historic Maps

EEI reviewed United States Geological Survey topographic maps dating from 1948 to 1988 at the University of California at Santa Barbara, Map and Imagery Laboratory. No development of the subject site is indicated on any of the maps reviewed from 1948 to 1968. The 1975 map notes the presence of five structures in the northern portion of the property, just north of the access road, two structures in the central portion, and two structures along the southern margin. No changes were noted in the 1988 map.

4.2.3 City Directories

EEI reviewed historic city directories for southern Orange County at the Central Library in Santa Ana, California. There were no listings for 33000 Avenida Pico from 1972 through 2001, except for an entry from 1980, which identified the site occupant as MIT Lincoln Laboratory. TRW Systems Group was identified as the occupant at 32502 Avenida Pico from 1980 through 1990.

4.2.4 Sanborn Maps

EEI researched available Sanborn Fire Insurance Maps of the subject site. Sanborn Maps provide detailed information on site structures, uses, and occupancies and were typically utilized by insurance companies to evaluate potential fire risk. Based on EEI's research, no Sanborn Fire Insurance Maps are available for the area surrounding the subject site, indicating little commercial development prior to 1950.

4.2.5 Orange County Building and Safety Department Files

EEI contacted the Orange County Building and Safety Department for information related to development of the subject property. EEI was able to review building permits issued to the tenant, TRW, from 1970 to 1994. These permits included:

9/70 - Electrical Permit; vacuum pumps

11/80 - Building Permit; 320 square feet; aluminum cover over existing compressor

8/85 - Grading Permit; cut 40 cubic yards-borrow fill 1290 cubic yards for test installation building

8/86 - Certificate of Occupancy; high energy light system (laser) facility

8/86 - Building Permit; 3250 square feet; see above

10/86 - 2 Certificates of Occupancy; test facility shop building for alterations

11/86 - Certificate of Occupancy; water tank foundation #1202 accessory to proposed "alpha" test facility

2/87 - Plumbing Permit; building #41A office, building #42A office

2/87 - Plumbing Permit; building #42T storage

2/87 - Plumbing Permit; building #41D office and storage

2/87 - Building Permit; 2160 square feet; temporary office trailer

8/87 - Electrical Permit; electronics room

10/87 - Electrical Permit; unspecified

11/88 - Building Permit; 426 square feet; concrete pad, steel support for alpha test facility-fuel module

10/89 - Plumbing Permit; unspecified building

2/91 - Plumbing-Building Permit; building sewer/cesspool to modular office building

2/91 - Building Permit; 6420 square feet; foundation for modular building

3/91 - Plumbing-Building Permit; fire sprinklers to existing office

4/92 - Building Permit; 500 square feet; Issued to "San Juan partnership"; no.6 retaining wall

6/92 - Certificate of Occupancy; electrical power station

9/94 - Certificate of Occupancy; 900 square feet; new weathershield structure for gas pump/roof only,

4.3 Regulatory Database Search

EEI reviewed known data on the hazardous waste generating establishments in the vicinity of the site, as well as on sites with known environmental concerns. These facilities were identified by county, state, or federal agencies and either generate, store, or dispose of hazardous materials. The majority of information in this section was obtained from First Search, an environmental information retrieval service. A copy of the First Search report is provided in **Appendix C**. Below is a list of databases that were reviewed in the preparation of this report:

4.3.1 Federal Databases

Comprehensive Environmental Response, Compensation, and Liability Information System (CERCIS) - No listings within one mile of the subject site.

National Priority List (NPL) - The was one listing within one mile of the subject site. Camp Pendleton Marine Corps Base was listed as having multiple releases to soil and groundwater of petroleum hydrocarbons, solvents, and pesticide residues. Based on the relative distance and position downgradient, this site is not considered an environmental concern at this time.

No Further Remedial Actions Planned (NFRAP) - No listings within one mile of the subject site.

Federal Facilities (FEDFAC) - No listings within one mile of the subject site.

Emergency Response Notification System (ERNS) - No listings within one-half mile of the subject site.

Site Enforcement Tracking System (SETS) - No listings within one mile of the subject site.

Enforcement Docket Systems (DOCKET)/Consent Decree Tracking System (CDETS) - No listings within one-half mile of the subject site.

Criminal Docket System (C-DOCKET) - No listings within one-half mile of the subject site.

Resource Conservation and Recovery Act Violators and Facility list (RCRA) - No listings within one mile of the subject site.

RCRA TSD Facility list (RCRA-D) - No listings within one mile of the subject site.

RCRA Generators (RCRA-G) - No listings within one mile of the subject site.

The subject site was not identified on any of the databases reviewed.

4.3.2 State and Regional Sources

Annual Work Plan (AWP) - No listings within one mile of the subject site.

CALSITES (Abandoned Sites Program Information System) - No listings within one mile of the subject site.

CORTESE - No listings within one mile of the subject site.

California State Leaking Underground Storage Tanks (LUST): No listings within one mile of the subject site.

Solid Waste Information System (SWIS) - No listings within one mile of the subject site.

Toxic Releases (NT) - No listings within one mile of the subject site.

Toxic Pits (TPC) - No listings within one mile of the subject site.

Solid Waste Assessment Test (SWAT)- No listings within one mile of the subject site.

Permitted Underground Storage Tanks (UST) - The subject site was identified as a permitted UST facility. There were no other listing within a one mile radius.

4.4 Regulatory Agency Review

4.4.1 Orange County Fire Authority

EEI contacted the Orange County Fire Department's Clerk of Authority office for information regarding hazardous materials storage at the subject site. According to Fire Department inspection records, **TRW** (33000 Avenida Pico) currently holds hazardous materials operating permits for eight separate site locations. These include the administration area, FETS, ChemLab, Drum Farm, VETS Plate, HEPTS Plateau, Alpha Plateau, and a general (unspecified) location. A list of chemicals stored and the maximum daily amount permitted for storage are given in **Appendix D.**

Administration Area

The most recent inspection report for the administration area, dated March 25, 2003, indicates permits for flammable, inert and oxidizer compressed gases, flammable/ combustible liquids, oxidizing and corrosive hazardous materials, liquified petroleum gases, motor vehicle fuel dispensing stations, spraying/

dipping, and welding/cutting operations. The following chemicals are stored onsite: acetylene (building 41A, 41AB), argon, gasoline, helium, liquid propane (building 41A, 41P, 41D), nitrogen, and oxygen. There were no indications of code violations, hazardous materials spills or emergency responses in Fire Department files.

Fossil Energy Test Site (FETS)

The most recent inspection report for the FETS area, dated March 25, 2003, indicates permits for flammable and inert compressed gases, non-flammable and oxidizer cryogens, explosives or blasting agents, flammable/ combustible liquids, and oxidizing hazardous materials. The following chemicals are stored onsite: deuterium, ethylene, helium, hydrogen, hydrogen peroxide, nitrogen, and nitrogen trifluoride. There were no indications of code violations, hazardous materials spills or emergency responses in Fire Department files.

Chemical Laboratory (CHEMLAB)

The most recent inspection report for the ChemLab area, dated March 25, 2003, indicates permits for flammable, highly toxic, and oxidizer compressed gases, explosives or blasting agents, and oxidizing, corrosive, and unstable/reactive hazardous materials. The following chemicals are stored onsite: hydrogen, hydrogen peroxide, oxygen, fluorine, squib ignitor, nitrogen, and helium. There were no indications of code violations, hazardous materials spills or emergency responses in Fire Department files.

Hazardous Fuel Storage Area (Drum Farm)

The most recent inspection report for the Drum Farm area, dated March 25, 2003, indicates permits for unstable reactive compressed gas, flammable and combustible liquids, and oxidizing, water reactive, highly toxic, unstable reactive or other health hazardous materials. The following chemicals are stored onsite: chlorine, diesel fuel, ethylene glycol, ethanol, fluorine, hydrazine, monomethylhydrazine (MMH), nitrogen tetroxide, JP-8 jet fuel (kerosene) and nitrogen dioxide. There were no indications of code violations, hazardous materials spills or emergency responses in Fire Department files.

Vertical Engine Test Stand (VETS)

The most recent inspection report for the VETS Plate area, dated March 25, 2003, indicates permits for toxic, unstable/ reactive, flammable and inert compressed gases, corrosive, highly toxic, and non-flammable cryogens, combustible liquids, water reactive, corrosive, highly toxic, toxic, and unstable/ reactive hazardous materials, and liquified petroleum gases . The following chemicals are stored onsite: ammonia (building 42B, 42U) chlorine, deuterium (building 42W, 42U), diesel fuel (building 42N, 41UR), ethylene glycol, Potassium phosphate dibasic, liquid fluorine, helium, hydrogen (building 42W, 42U), hydrogen peroxide, Diala type A oil, liquid propane, liquid nitrogen, nitrogen (building 42E, 42U-H-10, B-9) potassium hydroxide(50%) sodium chloride, sodium hydroxide , waste ammonium hydroxide, and petroleum distillate. There were no indications of code violations, hazardous materials spills or emergency responses in Fire Department files.

High Energy Propulsion Test Site (HEPTS)

The most recent inspection report for the HEPTS Plateau area, dated March 25, 2003, indicates permits for unstable/ reactive, inert, and oxidizer compressed gases, highly toxic, non-flammable and oxidizer cryogens, flammable/ combustible liquids, and oxidizing, corrosive, and highly toxic hazardous materials, and liquified petroleum gases. The following chemicals are stored onsite: betz entec 367, argon, deuterium, n,n-diethylethanolamine, cyclohexylamine, morpholine, ethylene glycol, potassium dibasic,

ethanol, fluorine (43B J-13), helium (at ox-inert storage, yard, test cell), hydrazine, hydrogen, hydrogen peroxide 30%, propane, ethane, propene, butanes, hydrogen peroxide 70%, methylhydrazine, carbon black, nitrogen (43D- J-2, 43C- B-7, 43G- F-8), liquid nitrogen (43B- N-6, 43D- F-13, 43D- L-7), nitrogen tetroxide (43C- C12), nitrogen trifluoride, Mobil DTE oil, oxygen, Diala oil AX, kerosene, potassium hydroxide, potassium hydroxide 50%, tolytriazole, phosphonic acid, sodium chloride, sodium hydroxide 50% (42X-D-11,43C-A-5), sulfur fluoride, Cortrol IS 104, triphenyl phosphate, nitrogen tetroxide (43C-B5), and fluorine (43B-K-11). There were no indications of code violations, hazardous materials spills or emergency responses in Fire Department files.

Alpha Plateau

The most recent inspection report for the Alpha Plateau area, dated March 25, 2003, indicates permits for flammable, inert, and limitant/OHH compressed gases, non-flammable and oxidizer cryogens, flammable/ combustible liquids, and corrosive hazardous materials. The following chemicals are stored onsite: sodium fluoride, deuterium, ethylene glycol, helium, hydrogen, isopropanol (Room 41G, 42M), nitrogen liquid, nitrogen gas, oil- mineral petroleum distillates, oxygen (Room 42M, 42D), mineral oil, paraffinic mineral oil, sodium hydroxide 30%, sodium hydroxide 50%, sodium molybdate (V), and sodium nitrite. There were no indications of code violations, hazardous materials spills or emergency responses in Fire Department files.

General (Facility Wide) Permit

The most recent inspection report for the general (unspecified) area, dated March 25, 2003, indicates permits for toxic, flammable, inert, irritant/OHH, and oxidizer compressed gases, corrosive hazardous materials, and liquified petroleum gases. The following chemicals are stored onsite: chlorine, propane, ethane, propylene, butanes, air, deuterium, helium, hydrogen, petroleum distillate, oxygen, sodium hydroxide, sodium fluoride, and propene. There were no indications of code violations, hazardous materials spills or emergency responses in Fire Department files.

4.4.2 Orange County Health Care Agency

EEI contacted the Orange County Health Care Agency (OCHCA) Custodian of Records to obtain copies of any Underground Storage Tank (UST) Operating Permits, Leaking Underground Fuel Tank (LUFT) files and/or any Hazardous Waste Permit (Hazmat) files for the site. The following is a summary of the information contained in OCHCA Files (**Appendix E**).

The site is currently permitted as an Underground Storage Tank Facility. Permit 3947-3 indicates that one tank is present. The tank is a 3,000 gallon, fiberglass-reinforced, double-walled, steel tank containing unleaded gasoline. The tank was installed in 1988. Annual inspection reports from 1995 through 2001 indicate no violations have been issued.

EEI reviewed Hazardous Waste Inspection Reports for the facility dating from June 1995 through August 2001. Waste streams identified during these inspections included coal caustic, waste oil, parts cleaner, aerosol waste, acid/caustic detergent cleaner, thinner waste and solvent (flammables), PCB waste/ ballasts, asbestos floor tile, coal caustic tank, paint filters, lab sink drains, waste water, hydrazine waste water, miscellaneous lab pack waste/ solvent wipes etc, ammonium hydroxide (3%), basic hydrogen peroxide (50% water, 50% sodium/ potassium hydroxide, and hydrogen peroxide (30-98%). No violations were noted in the inspections.

A 500-gallon plastic underground storage tank (UST) was removed from a concrete vault in August 1992 (42A). The vault appeared intact with no apparent cracks. The vault was filled with sand and capped with concrete.

A 4' x 4' x 7' blind concrete sump was removed in November 1990 (44B). Samples were collected directly from the sump site and from a location approximately 30' north of the site. The samples were analyzed for pH, total kjeldahl nitrogen, nitrates, nitrites, sulfates and hydrazine. No further action was required.

Two underground storage tanks were removed and replaced from sites in August 1988. The 1,000 and 2,000 gallon gas tanks were replaced with a 3,000 gallon unleaded gas tank. Soil samples were taken from the excavation pits of each tank and analyzed for aromatic volatile organics. Samples revealed concentrations below detection limits.

An above ground tank (AGT) containing approximately 300 gallons of hydrogen peroxide exploded and destroyed another tank containing sodium hydroxide in August 1999. There were no other details provided in the file. According to TRW personnel, cleanup of the accident site was performed by TRW.

4.4.3 California Regional Water Quality Control Board

EEI contacted the California Regional Water Quality Control Board - San Diego Region (SDRWQCB) to determine whether the site or any nearby property was listed as having a leaking underground tank, spill, leak, or aboveground tank problem. In addition, EEI reviewed the Underground Storage Tank Information System (LUSTIS) and Spills, Leaks, Investigations, and Cleanup (SLIC) List, published by the SARWQCB. There were no listings for the subject site nor any adjacent property.

File data from December 1988 and January 1989 indicated the closure of surface impoundments at the subject facility. In a letter dated December 9, 1988, the SDRWQCB indicates that all hazardous substances have been completely removed from surface impoundments at the facility, and that the reported data do not indicate the presence of contamination in soil or groundwater beneath the impoundments. The letter states that closure of the impoundments has been completed, and that TRW had complied with the requirements of the Toxic Pits Cleanup Act.

EEI reviewed the Waste Discharge Requirements for the Disposal of Treated Domestic Sewage at the TRW Capistrano Test Site (Order No. 94-78 dated October 1994). The permit regulates the operation of a sewage treatment system at the facility, consisting of a 3,000-gallon septic tank, aeration pond, and spray irrigation network. A Facilities Inspection Form for the sewage treatment system, dated June 2000, indicated that the aeration pond was in service and appeared to be working properly. Mosquito larvae were noted in the pond. Aside from the mosquito larvae, the system was deemed to be in satisfactory compliance. The Semi-Annual Aeration Pond Effluent Monitoring Report dated January 2003 indicates that pond effluent analysis results exceeded requirements for Total Dissolved Solids (TDS). The reported value was 1,400 milligrams per liter (mg/l). The maximum allowable limit stated was 1,000 mg/l. No other analytes of concern were noted.

4.4.4 Review of Division of Oil, Gas and Geothermal Resources Files

EEI reviewed information regarding oil production near the site provided by the California Division of Oil, Gas, and Geothermal Resources. Based on file data, no petroleum production has occurred on or adjacent to the site.

4.5. Previous Assessment

As a part of this Phase I ESA, EEI reviewed various documents provided by TRW (**Appendix F**). There have been several investigative and decommissioning activities conducted at the site. These include: 1) Investigation and clean closure of seven surface impoundments; 2) inventory of underground tanks; 3) removal and closure of other underground storage tanks; 4) remediation of diesel contaminated soils; and, 5) soil investigations at various locations. The following is a summary of the information reviewed by EEI.

4.5.1 Investigation and Clean Closure of Surface Impoundments

Until the late 1980's there were seven surface impoundments on the TRW property whose principal function was to hold recirculating cooling water for the various testing operations at the facility. According to a Tetra Tech, Inc., document entitled "Geologic Summary Report for the Capistrano Test Site" August 1987, these surface impoundments were known as:

- FETS Scrubber (capacity: 63,000 gallons)
- FETS Quench (capacity: 63,000 gallons)
- Upper VETS (capacity: 150,000 gallons)
- Lower VETS (capacity: 150,000 gallons)
- Fire extinguishing reservoir (capacity; 150,000 gallons)
- HATS (capacity: 24,000 gallons)
- CHEM (capacity: 76,000 gallons)

Five of these surface impoundments were determined to be subject to the requirements of the Toxic Pits Cleanup Act of 1984 (TPCA) because sodium dichromate corrosion inhibitor was added to these recirculating cool systems. The San Diego Regional Water Quality Control Board (RWQCB) determined that hexavalent and trivalent chromium were constituents of concern in these impoundments due to the use of sodium dichromate. The use of sodium dichromate was discontinued in 1986. The five impoundments were the two at FETS, the upper and lower VETS, and the FIREX. These impoundments were subject under TPCA to the preparation of a Hydrologic Assessment Report (HAR). The above reference document was an interim document prior to the submission of the HAR). The other two impoundments, HATS and CHEM, were not subject to TPCA and not required to be part of the HAR, but TRW chose to conduct subsurface investigations nonetheless.

These impoundments were put into service in the 1960's and 70's. Their construction consisted of 0.05 inch Hypalon liners placed directly over sand (with an accompanying hot tar mop over the sand in the VETS and fire extinguishing reservoirs). There were no double liners, leachate collection, or leak detection monitoring devices on any of the impoundments. Sludge from the bottom of the impoundments was periodically removed by vacuum pump truck and reportedly disposed of in an appropriate facility.

TRW was notified by the RWQCB in October 1986 to establish a detection monitoring program under TPCA. A field program was then designed by TRW and its consultant, Tetra Tech, Inc., to detect the presence of waste constituent in surface water or groundwater down gradient from the impoundments and in the unsaturated zone beneath and adjacent to the impoundments. Field work was performed under the direction of a California Registered Geologist and conducted between February and May 1987.

Seven shallow soil borings (one at each surface impoundment) were drilled to approximately 50 feet and sampled. Samples were collected in each boring in the following manner; 1) in sand immediately above the uppermost clay layer of thickness greater than 5 feet (potential permeability barrier); or 2) at the

approximate depth of the bottom of each impoundment; or 3) at the terminus of each hole. Per the RWQCB, the soil samples were analyzed for heavy metals (including hexavalent chromium), total organic carbon (TOC), and total organic halogens. Some samples were analyzed for total petroleum hydrocarbons (TPH).

Analyses indicated TOC ranging from 100 to 3500 mg/kg. Background TOC ranged from 1,200 to 3,000 mg/kg. The TPH sample analyses had results above detection limits ranging from 0.27 to 5.45 mg/kg. Analyses for total organic halogens resulted in no detection of such compounds (detection limit was 0.5 mg/kg). Heavy metals analysis indicated very low levels of heavy metals, generally in the range of normal background range for sandstones and shales. No samples had metals exceeding (or even approaching) total metal threshold levels as specified in Title 22 of the California Code of Regulations.

Four groundwater monitoring wells proposed to meet the requirements of TPCA. Two wells, at the FETS and HATS sites, were completed. The other two wells drilled did not encounter groundwater. The groundwater monitoring wells completed were sampled principally for the presence of hexavalent and trivalent chromium. Neither constituent was found above the chromium maximum concentration level (MCL) of 0.05 mg/L.

According to a reviewed document prepared by Tetra Tech, Inc. (entitled "Final Closure Report for Surface Impounds at the TRW Capistrano Test Site) in 1988, the seven surface impoundments were removed and sites closed. During the removal activities soil borings were advance at each impoundment to determine the extent, if any, of soil contamination beneath the impoundment liners. The soil borings were advanced from 11 to 20 feet, with samples collected by split-spoon samples and brass sleeves at depths of 0, 2.5, 5, 7.5, 10, 15, and 20 feet (where applicable). Sample analysis was limited to hexavalent chromium, total chromium, nickel, and molybdenum (under the approval of the RWQCB). Actual laboratory analyses was conducted under a tiered approach, i.e., if the surface and 2.5 foot samples indicated elevated levels of a metal then the next level down would be analyzed. Results indicated that at the 2.5 foot level concentrations were much less than the total metals threshold levels established in Title 22 of the California Code of Regulations. Most results were either non-detect (less than 0.05 mg/kg) or under 1% of the threshold levels.

The impoundments were considered clean closed by the RWQCB in a letter dated December 8, 1988 to TRW and no post closure monitoring was required. Based on the above reports it appears that the seven surface impoundments did not contaminate the soil or groundwater in these areas.

4.5.2 Inventory of Underground Tanks

In 1987, TRW retained Tetra Tech, Inc., to conduct an inventory of all existing inground and underground storage tanks at its Capistrano Test Site (CTS). A document was prepared which summarized the locations, descriptions, use, and applicable regulations affecting each tank inventoried. This report, entitled "Capistrano Test Site Underground and Inground Tank Inventory" (November 1987) was reviewed and conclusions are summarized below.

The document reported 32 different storage structures, ranging from underground and above ground storage tanks, to sumps and cooling towers. Tetra Tech reported that all of the underground storage tanks (and related facilities) appeared to be in compliance with state underground storage tank requirements with the exception of the following:

- Two inground concrete sumps at Building 44A and 44B,
- Two underground gasoline storage tanks near Building 41Q,

- Building 41C pump drain tank,
- Brine tank at Building 41G.

Regarding bringing these facilities into compliance, the report summarized the next steps necessary. Additional reports (as described below) were also reviewed for this assessment.

Inground concrete sumps at Building 44A and 44B

The two concrete sumps, which received chemical wastewater from the Chemical Laboratory, were to be upgraded to meet the state underground storage tank requirements. This upgrade was performed in 1988 and hypalon liners and leak detection systems were installed to meet Subchapter 16, Title 23, California Code of Regulations requirements. The upgrade are described in the Tetra Tech document entitled "Final Report for the Retrofit of Chem Lab 44A and 44B Sumps at the TRW Capistrano Test Site"

During the upgrade of the sumps, soil sampling of these concrete sumps was conducted as required for the closure of the sumps as primary, since the hypalon liners become the primary containment with the concrete as the secondary containment. Under the direction of the Orange County Environmental Health Agency a hole was cut out of the bottom of each concrete sump and a sample of the soil beneath was taken using a Shelby-tube sampler. The hole in the sump was then resealed with a non-shrink grout. The samples were then analyzed for pH and metals. Results indicated all soil samples were non-hazardous. The Orange County Environmental Health Agency considered the sump retrofit successfully completed.

Underground Gasoline Storage Tank Replacements

The two underground gasoline storage tank near Building 41Q were removed in August 1988 and reported in a Tetra Tech, Inc., document entitled "Final Report for Underground Gasoline Tank Replacements at the TRW Capistrano Test Site" (October 1988). The two single-walled tanks (1,000 and 2,000 gallons) were replaced with a new 3,000-gallon double-wall fiberglass coated steel tank in order to satisfy the state underground storage tank regulations.

Two soil samples were were taken from the excavation of each tank as they were removed. Two more soil samples were taken from the stockpiled excavated soil. The six soil samples were analyzed by Thermo Analytical Labs, Inc., for VOCs per EPA Test Method 8020. All VOCs were determined to be below the detection limit of 0.002 mg/kg. It was noted in the review of the underground storage tank removals that there appears be no testing reported for the fuel dispenser area and underground piping runs. This was due to the fact that the dispensers and associated piping where located directly above the removed tanks.

The new 3,000-gallon double-wall tank was installed in the excavation where the 2,000-gallon tank was located. The Orange County Environmental Health Agency approved the permit and plans for this new tank. A leak detection system was also installed for both the tank and associated piping.

Building 41C pump drain tank and brine tank at Building 41G

The underground tank inventory report indicates that the tank at Building 41C was under evaluation to bring it into compliance with state underground storage tank requirements. In addition the report stated that the 40,000 brine tank at Building 41G required secondary containment. A containment curb was subsequently installed in 1988.

4.5.3 Removal and Closure of Other Underground Storage Tanks

Four additional reports were reviewed regarding the removal and closure of an underground gasoline storage, wastewater sump, and concrete tanks. The results of these closure reports are as follows.

Closure of the HEPTS Concrete Tank

A concrete tank, used for cooling water storage at the HEPTS (High Energy Propulsion Test Stand), was removed from the TRW facility. A Tetra Tech, Inc., document entitled "Final Closure Report for the HEPTS Concrete Tank at the TRW Capistrano Test Site" November 1988 summarized the closure activities.

Closure activities including removing the concrete walls and floors of the tank and taking soil samples once the soil underneath the concrete tank were exposed. Four soil samples, using a Shelby-tube sampler were taken. Two samples were taken directly at the soil surface, with the other two taken at approximately six inches deep. One sample each were also taken of the concrete and loose soil from the debris storage pile. All sampling was performed under the direction of the Orange County Environmental Health Agency. The six samples were analyzed for heavy metals. Laboratory results indicated that all samples were significantly less than hazardous waste threshold levels. The concrete and soils were classified as nonhazardous and could be disposed of as nonhazardous materials.

The closure report recommended no further investigation and a TRW memo to the file (dated 4/10/89) indicated that Orange County Environmental Health Agency concurred that closure was complete.

Closure of the HATS Concrete Tank

Two adjoining concrete tanks, used for cooling water storage at the HATS (High Altitude Test Stand), were converted to secondary containment for new aboveground storage tanks. In this conversion to secondary containment, its use as primary containment had to be closed. Thus, the closure activities were summarized in the Tetra Tech document entitled "Final Closure Report for the HATS Concrete Tanks at the TRW Capistrano Test Site" (November 1988).

Soil under the concrete tanks was sampled by cutting two holes in the bottom of each of the concrete tanks and using a Shelby-tube sampler to collect the soil sample. The holes in the concrete were then sealed with non-shrink grout which allows the tanks to serve as secondary containment. The four soil samples were analyzed by Thermo Analytical, Inc., for heavy metals. All results were either non-detect or significantly less than the hazardous thresholds.

The closure report recommended no further investigation and a TRW memo to the file (dated 4/10/89) indicated that Orange County Environmental Health Agency concurred that closure was complete.

4.5.4 Remediation Of Diesel Contaminated Soils

A report entitled "Final Report for TRW Fossil Energy Test Site" (February 1991) was reviewed regarding the investigation and remediation of diesel impacted soil on the TRW property. The results of that investigation and remediation follow.

In January 1990, a leak was discovered in a 1.5-inch diameter underground diesel fuel pipeline at the Fossil Energy Test Site (FETS). This pipeline was used to convey diesel fuel for use in a FETS compressor. TRW commissioned CKY, Inc, to collect soil samples adjacent to the pipeline in the

attempt to determine the amount of diesel soil contamination. Soil samples analyzed for total petroleum hydrocarbons (TPH) resulted in concentrations ranging from 600 to 18,000 mg/kg..

The report further reported that in April 1990 Tetra Tech, Inc, performed additional subsurface investigations to delineate the extent of soil contamination. It was estimated from that investigation that approximately 1,000 cubic yards of contaminated soil would have to be excavated in order to meet the San Diego Regional Water Quality Control (RWQCB) cleanup criteria for TPH (as diesel) of 100 mg/kg (i.e., the level of contamination in the soil at which remediation is not required). Further, the RWQCB cleanup objectives for soils contaminated in the adjoining ravine were set at 10 mg/kg to protect surface and groundwater.

When the RWQCB investigation requirements were met, a workplan for the remediation of the contaminated soil was prepared in November 1990 was prepared by Woodward Clyde Consultants. Remediation activities were performed by Riedel Environmental Services, Inc. Soil excavation was conducted, with soil sampling and analyses for TPH, yielding approximately 3,000 cubic yards of potentially contaminated soil. This soil was stockpiled and covered. Subsequently, the stockpile was sampled under supervision of Orange County Integrated Waste Management Department and analyzed in accordance with Orange County Class III Landfill requirements. The analytical results determined that the soil could be take to the nearby Prima Deshecha Class III Landfill. In Janauary 1991, approximately 3,350 tons of hydrocarbon-contaminated soil was disposed at the Prima Deshecha Landfill.

The excavated areas, which met the RWQCB cleanup criteria, were backfilled with clean native soil and compacted to a minimum 90% capacity. Field screening using an Organic Vapor Meter was used to confirm the absence of contaminated soil in the backfill material. The subject site was restored to its original condition, with restoration including resurfacing of approximately 1,200 square feet with asphalt and hydroseeding of the ravine and borrow areas. On May 23, 1991, TRW was issued a letter from the San Diego RWQCB stating that Board staff had determined that soils at the site exceeding cleanup objectives established by the Board had been removed and disposed of in a Class III facility.

Based on the remediation report and accompanying data, it appears that the diesel contaminated soils at the FETS were successfully removed.

4.5.5 Soil Investigations at Various Locations

In 2002, soil investigations were conducted at 14 different investigation areas on the TRW property by the Equipoise Corporation of San Juan Capistrano, California. The stated purpose of these soil investigations was to assess the presence or absence of select constituents of concern in areas of the TRW facility used for, or associated with, the TRW Space Based Laser (SBL) Program. The execution and results of this soils investigation were presented in a report prepared by Equipoise entitled “Space Based Laser Program Initial Soil Investigation” (prepared for TRW, Inc., July 31, 2002).

The fourteen investigation areas where SBL Program activities were conducted are:

- Fire X Reservoir (former fire x and cooling water reservoirs),
- Alpha Chill Water Tank, Building 42E,
- VETS, specifically Shop Building 42Y and the former laser area behind Buildings 42J and 42K,
- HEPTS Former Reservoir,
- Isopropyl Alcohol (IRA) Tank, 41G
- Upper HATS,

- Lower HATS,
- Former Reservoir, 41H,
- Boneyard Storage, 42T,
- PAR (Preliminary Assessment and Research), Building 45A,
- Drum Storage Area, 41E (Hazardous Fuel Storage Area),
- Spray Booth Building, Building 41D (Central Services Building),
- Valve Shop/Clean Room, Building 41A (Test Support Building),
- Surface Irrigation Area.

During the soil investigations, the environmental consultant drilled, sampled, and subsequently abandoned 23 hollow-stem auger and 11 hand auger borings at the 14 sites listed above. The hollow-stem auger borings ranged from 5 to 20 feet deep, with the hand auger borings ranging from 1 to 9 feet deep. Fifty-three discrete soil samples from the 34 borings were collected from various depths in the borings and submitted for laboratory analyses.

Laboratory analyses for the collected samples included: Volatile Organics Compounds (VOCs including acetone, Freon 113, and isopropyl alcohol) via EPA Test Method 8260B; Semi-Volatile Organic Compounds (SVOCs) via EPA Test Method 8270C; Polynuclear Aromatic Hydrocarbons (PAHs) via EPA Test Method 8270; Priority Pollutant Metals via EPA Test Method 6010B and 7421 for mercury; Petroleum Hydrocarbon Distribution via EPA Test Method 8015-Modified; Volatile Fuel Hydrocarbons, Benzene, Toluene, Ethylbenzene, Xylene (BTEX), and Methyl-tert-butyl Ether (MTBE) via EPA Test Methods 8015M and 8021B; and hydrazines (including hydrazine, methylhydrazine, and 1,1-dimethylhydrazine) via gas chromatography.

Laboratory analysis results indicated that a majority of the analyzed constituents of concern (VOCs, SVOCs, PAHs, metal, PCBs, and hydrazines) were not detected at concentrations above their respective analytical method detection limits and none were detected above their respective EPA Preliminary Remediation Goals (PRGs). PRG's have been established to aid in site "screening" i.e., to help identify areas, contaminants, and conditions that do not require further attention at a particular site. Generally, at sites where contaminant concentrations fall below PRGs, no further action or study is warranted. In the case of TRW, residential PRGs were used for comparison sake. Residential PRG's represent the most conservative category of PRG's for soil. For the Petroleum Hydrocarbons, the Los Angeles Regional Water Quality Control Board's Level A Soil Screening guidelines were used and none were detected above the guidelines level. Metals concentrations above their respective detection levels were either below or the within the background range published for California soils.

4.6 Interview with Property Owner

EEI contacted Jerry Buckley, Manager of Facility Operations for TRW Northrop Grumman Space Technology), who was interviewed regarding key site information. Mr. Buckley indicated that he has been working at the facility for over 15 years and is familiar with the subject property. Mr. Buckley also provided EEI with facility maps, a building inventory, photographs, and a variety of other pertinent information regarding site usage and history (**Appendix G**). A list of the questions asked, and a summary of their responses, is included below.

Q: Are you aware of any current or previous uses of the site or adjoining properties which have created an unresolved environmental concern?

A: No.

Q: Has fill dirt been brought onto the property that may have originated from a contaminated site or that is of an unknown origin?

A: No, to the best of our knowledge.

Q: Are there currently, or to the best of your knowledge have there been previously, any pits, ponds, or lagoons located on the property in connection with waste treatment or waste disposal?

A: Yes (documentation provided).

Q: *Is there currently, or to the best of your knowledge has there been previously, any stained soil on the property?*

A: No.

Q: Are there currently, or to the best of your knowledge have there been previously, any registered or unregistered storage tanks (above or underground) located on the property, aside from the existing aboveground waste oil tank?

A: Yes (Documentation provided)

Q: Are there currently, or to the best of your knowledge have there been previously, any vent pipes, fill pipes, or access ways indicating a fill pipe protruding from the ground on the property or adjacent to any structure located on the property?

A: No.

Q: Are there currently, or to the best of your knowledge have there been previously, any flooring, drains, or walls located within the facility that are stained by substances other than water or are emitting foul chemical odors?

A: No.

Q: If the property is served by a private well or non-public water system, have contaminants been identified in the well or system that exceed guidelines applicable to the water system or has the well been designated as contaminated by any government environmental/health agency?

A: No.

Q: Does the owner or occupant of the property have any knowledge of environmental liens or governmental notification relating to past or recurrent violations of environmental laws with respect to the property or any facility located on the property?

A: No.

Q: Has the owner or occupant of the property been informed of the past or current existence of hazardous substances or petroleum products or environmental violations with respect to the property or any facility located on the property?

A: No unresolved issues.

Q: Does the owner or occupant of the property have any knowledge of any environmental site assessment reports prepared for the property or facility that indicated the presence of hazardous substances or petroleum products on, or contamination of, the property or recommended further assessment of the property?

A: Yes (Documentation provided).

Q: Does the owner or occupant of the property know of any past, threatened, or pending lawsuits or administrative proceedings concerning a release or threatened release of any hazardous substance or petroleum products involving the property by any owner or occupant of the property?

A: No.

Q: Does the property discharge waste water on or adjacent to the property other than storm water into a sanitary sewer system?

A: Yes, after passing through a sewage treatment system. CTS has a discharge order from the CRWQCB for surface discharge (irrigation) from one aeration pond. This is restricted to 3,000 gpd. Typical discharge rates have been 1 gpd to 315 gpd over the past 5 yrs. 1998 was especially heavy and averaged 2,043 gallons per day due to El Nino events.

Q: To the best of your knowledge, have any hazardous substances or petroleum products, unidentified waste materials, tires, automotive or industrial batteries or any other waste materials been dumped above grade, buried and/or burned on the property?

A: No.

Q: Is there a transformer, capacitor, or any hydraulic equipment for which there are any records indicating the presence of PCBs?

A: Not any more. Reports documenting removal of PCB liquids is on file.

4.7 Other Environmental Issues

4.7.1 Asbestos Containing Materials

Asbestos is a natural mineral fiber used in the manufacture of a number of different building materials. Asbestos has also been identified as a human carcinogen. Most friable (i.e., those that are easily broken or crushed) asbestos-containing materials (ACM) were banned in building materials by 1978. By 1989, most major manufacturers had voluntarily removed non-friable ACM (i.e., flooring, roofing, and mastics/sealants) from the market. However, these materials were not banned completely.

In October 1995, the Federal Occupational Safety and Health Administration (OSHA) redefined the manner by which building materials are classified in regards to asbestos and the also the way these materials are to be handled. Under this ruling, “thermal system insulation and sprayed-on or troweled on or otherwise applied surfacing materials” applied before 1980 are considered presumed asbestos containing materials (PACM). Other building materials such as “ floor or ceiling tiles, siding, roofing, transite panels” (i.e., non-friable) are also considered PACM unless tested.

An ACM survey was not included as a part of this ESA. However, based on the age of the majority of site structures (i.e., pre-1980), the presence of ACM's is considered likely.

4.7.2 Lead-Based Paint

Lead-based paint is identified by OSHA , the Environmental Protection Agency (EPA) and the Department Housing and Urban Development Department (HUD) as being a potential health risk to humans, particularly children, based upon its effects to the central nervous system, kidneys, and bloodstream. The risk of lead-based paint has been classified by HUD based upon the age and condition of the painted surface. This classification includes the following:

- maximum risk is from paint applied before 1950
- a severe risk is present from paint applied before 1960
- a moderate risk is present from paint applied before 1970
- a slight risk is present from paint applied before 1977
- paint applied after 1977 is not expected to contain lead.

A lead-based paint survey was not included as part of this ESA. However, based on the date of construction, the presence of lead based paint is considered likely.

4.7.3 Radon

Radon is a radioactive gas which has been identified as a human carcinogen. Radon gas is typically associated with fine-grained rock and soil, and results from the radioactive decay of radium. EPA recommends that homeowners in areas with radon screening levels greater than 4 pCi/L (picocurries per liter) conduct mitigation of radon gas to reduce exposure.

Sections 307 and 309 of the Indoor Radon Abatement Act of 1988 (IRAA) directed EPA to list and identify areas of the U.S. with the potential for elevated indoor radon levels. EPA's Map of Radon Zones (EPA-402-R-93-071) assigns each of the 3,141 counties in the U.S. to one of three zones based on radon potential:

- Zone 1 counties have a predicted average indoor radon screening level greater than 4 pCi/L.
- Zone 2 counties have a predicted average indoor radon screening level between 2 and 4 pCi/L.
- Zone 3 counties have a predicted average indoor radon screening level less than 2 pCi/L.

Based on such factors as indoor radon measurements; geology; aerial radioactivity; soil permeability; and foundation types, EPA has identified Orange County as Zone 3 (i.e., low potential for radon gas). Therefore, EEI does not consider radon as a concern at this time.

5.0 SITE RECONNAISSANCE

5.1 Purpose

The purpose of the site reconnaissance was to visually and physically observe the site, site structures, and adjoining properties for conditions indicating an existing release, past release, or threatened release of any hazardous substances or petroleum products into structures of the site, or into soil and/or groundwater beneath the site. This would include any evidence of contamination, distressed vegetation, petroleum-hydrocarbon staining, waste drums, illegal dumping, or improper waste storage/handling.

5.2 Results of Site Reconnaissance

5.2.1 Subject Site

On April 7, and April 11, 2003, EEI personnel conducted a reconnaissance of the entire site. On April 7, 2003, EEI was escorted by Jerry Buckley, Manager of Facility Operations. Mr. Buckley provided access to site facilities and answered questions regarding site operations. It should be noted that CTS is a secure facility, engaged in research involving issues of national security. Therefore, not all areas of the property were accessible to EEI personnel. However, all areas of the property involving the use and/or storage of hazardous substances or waste were included in the site reconnaissance. Photographs 1 through 44 **(Appendix H**) document the site reconnaissance, which is summarized in **Table 2**.

Prior to initiating the site reconnaissance, EEI was provided with a site-specific security and safety orientation. EEI was familiarized with the facility layout, access control information, emergency procedures, hazard communication, and environmental health issues. EEI also reviewed and was provided with the facilities Safety, Health, and Environmental Affairs Manual dated March 2, 1998.

The property consists largely of undeveloped alluvial valleys separated by a prominent, east-west trending ridge lines. The property is bounded by the residential properties and undeveloped land to the west, Talega Creek and Camp Pendleton Marine Corps Base to the south and east, and Rancho Mission Viejo (undeveloped) and Gabino Creek to the north. Only a small fraction (i.e., less than 10 percent) of the property is developed. These developed portions are all located in the western half of the property.

The principal access (main gate - Guard Post #2) to the property is located at the northeast terminus of Avenida Pico. The main gate includes a guarded kiosk. The driveway into the CTS facility proceeds northward from the main gate along Christianitos Creek, crossing the creek near the northwest corner of the property before looping east through the facility.

Two groundwater wells (Well No. 1 and Well No. 2) and related structures were noted along the creek east of the driveway. An area west of the road, near the driveway to Water Well No. 1, was formerly used as a pistol range for the facility security officers until the mid-1990's.

After looping to the east the driveway meets an intersection with Cristianitos Road, which leads north through a gated entrance into Rancho Mission Viejo. Further east is a second intersection with roads leading southwest and south into the Chemical Laboratory (Chemlab) and Fossil Energy Test Site (FETS), respectively. Chemlab is a support facility built in the mid-1960's and used for “clean coal” research and liquid fuel quality assurance/quality control for various rocket propulsion projects at the site. It includes several structures such as the laboratory (44A), warehouse (44F), utility shed (44E), utility sheds, a concrete-block chemical storage room, two explosive storage “igloo” bunkers, and several test cells (empty).

The "clean coal" research involved the use of the "gravimelt" process to "scrub" coal, thereby facilitating desulfurization and deminerlization, resulting in minimal emissions combustion. The gravimelt process included the use of molten caustics (such as sodium hydroxide) to chemically remove sulfur and various minerals from coal. Spent caustics and sulfur/mineral by-products were processed/recovered at Chemlab through a wastewater treatment system for reuse. "Clean coal" research at this facility has ceased, and many of the related systems dismantled. However, this facility is still used for liquid rocket fuel testing. Chemicals used/stored in this location included hydrogen peroxide, nitrogen, hydrogen, oxygen, fluorine, helium, and squib ignitors. Chemical storage was either in drums, located in a concrete-lined and covered containment area, or in bulk storage tanks within a concrete block wall containment structure. Both lined and unlined drainage channels were noted in this area along the western and eastern margins. The drainage channels flow west/southwest toward Cristianitos Creek. No evidence of contamination, distressed vegetation, petroleum-hydrocarbon staining, illegal dumping, or improper waste storage/handling were noted in the Chemlab area during the site reconnaissance.

FETS was designed as a demonstration plant for the burning of clean coal generated by the gravimelt process. This facility was constructed in the late 1970's and operated extensively during the 1980's, but has since been out of use. The facilities at FETS include a control center, warehouse, three test cells, two coal bays, cooling towers, emissions control structures and a number of support structures. Also located at or adjacent to this facility are an equipment boneyard (directly to the south), a concrete pad formerly used as a laser test pad, and an explosives storage area, which includes several "igloo" bunker structures. A large patch was noted in the asphalt driveway, near the water cooling plant. This was apparently the area excavated in 1990 to remediate diesel-impacted soil related to a piping leak.

Chemicals used and/or stored in FETS included deuterium, ethylene, helium, hydrogen, hydrogen peroxide, nitrogen, and nitrogen triflouride. Chemical storage was either in drums, pressurized cylinders, container trucks, or in bulk storage tanks. Surface drainage at the site was generally to the south, toward Cristianitos Creek. No evidence of contamination, distressed vegetation, petroleum-hydrocarbon staining, illegal dumping, or improper waste storage/handling were noted the FETS area during the site reconnaissance.
The Administrative (Admin) area of the property is located to the east along the main driveway, and includes office, maintenance, and other support facilities. These include Guard Post #1, Test Support Building (41A), Main Office (41P), Central Services Building (41D), Spray Booth Building (41DA), Auto Repair Shed/Fueling Station (41Q), Radome Facilities for Ranges 1 and 2, parking lots and helipad, and two receiver sites.

The Test Support Building includes office space, security services, workshop, valve shop/clean room and chemical testing area. A chemical storage area and wastewater treatment system are located along the south side of the structure, along the driveway. A sewage treatment system is located south of and below the driveway.

The Central Services Building includes office space, workshops, records storage, fire/emergency response services, and shipping/receiving. The Spray Booth Building includes a spray paint booth, storage sheds, and welding area. The Auto Repair Shed/Fueling Station includes a 3,000-gallon underground gasoline storage tank, dispenser island, and support structure.

Chemicals used and/or stored in the Admin area include acetylene, argon, chlorine, deuterium, helium, hydrogen, nitrogen, oxygen, propane, petroleum distillates, trichloroethylene, sodium hydroxide, and sulfur fluoride. Chemical storage is generally in small containers, drums, pressurized cylinders, or bulk storage tanks. Drainage in the Admin area is to the south and west, toward Cristianitos Creek. No evidence of contamination, distressed vegetation, petroleum-hydrocarbon staining, illegal dumping, or improper waste storage/handling were noted in the Admin area during the site reconnaissance.

East of the Admin area and north of the driveway is the Hazardous Fuel Storage Area (41E; Drum Farm). The Drum Farm is a concrete paved, fenced, and covered storage area divided into two enclosures and separated by a large berm. The divided areas include fuels storage enclosure, in the western half, and oxidizers storage enclosure, in the eastern half. The Drum Farm is set down in elevation from the road and is isolated from any other structures. Two large concrete-lined containment sumps were noted on either end of the Drum Farm. Drainage in this area is to the north into Blind Canyon. Chemicals stored at the Drum Farm include chlorine, diesel fuel, ethylene glycol, ethanol, fluorine, hydrazine, monomethylhydrazine (MMH), nitrogen tetraoxide, JP-8 jet fuel, and nitrogen dioxide. A spill kit and fire extinguisher were noted adjacent to the enclosures. No evidence of contamination, distressed vegetation, petroleum-hydrocarbon staining, illegal dumping, or improper waste storage/handling were noted the Drum Farm area during the site reconnaissance.

East of the Drum Farm and south of the driveway is the Preliminary Research and Assessment Research building (PAR; 45A). This building was constructed in 1967 and is used for optics research. Compressed gas storage (oxygen, hydrogen, deuterium) was noted along the western margin of the building, while a wastewater treatment system and plastic storage tank were noted along the northern margin. The system was enclosed in a concrete containment structure. A spill kit was noted adjacent to the containment structure. No evidence of contamination, distressed vegetation, petroleum-hydrocarbon staining, illegal dumping, or improper waste storage/handling were noted in the PAR area during the site reconnaissance.

East of PAR the driveway continues into the test plateau, which is divided into a number of separate test sites involving propulsion systems and chemical lasers. These are the High Energy Propulsion Test Site (HEPTS), the Naval Advanced Chemical Laser (NACL)/Baseline Demonstration Laser (BDL) area, the Vertical Engine Test Stand (VETS), the Propulsion Integration Test Stand (PITS), and the High Altitude Test Stand (HATS), which includes the Alpha Plateau. Most of the structures in this area were constructed in the mid-1960's, with additions in the 1970's and 1980's. HEPTS, VETS, and PITS were designed for propulsion system testing and monitoring. NACL/BDL, and HATS were designed for the testing and monitoring of chemical lasers. Support structures/facilities in the test plateau include the Boneyard storage area and warehouse (42T/42Z), bulk fuel storage area (41G), steam plant (42G), pump house and cooling water treatment plant (41C), control center building (42A), and a number of storage and utility structures.

In general, propulsion systems tested at the facility involve the burning of liquid rocket fuels, such as hydrazine and monomethylhydrazine (MMH), in combination with nitrogen tetroxide or nitric acid. The other principal fuels are liquid hydrogen, in combination with liquid oxygen, and hydrogen peroxide.

Chemical lasers tested at the facility include the use of deuterium, which in combination with nitrogen trifluoride and helium creates fluorine. This in turn is mixed with hydrogen to create the hydrogen fluoride (HF) laser. Other chemical reactions used include a mixture of liquid hydrogen peroxide and potassium hydroxide, along with chlorine gas and iodine gas, to create the chemical oxygen iodine (COIL) laser.

Chemicals used and/or stored in the test plateau include the following: (HEPTS) argon, deuterium, ethlyene glycol, ethanol, flourine, helium, hydrazine, hydrogen, hydrogen peroxide, propane, MMH, nitrogen, lubricating oil, oxygen, JP-8, potassium hydroxide, sodium chloride, sodium hydroxide, sulfur hexafluoride, and nitrogen tetroxide; (Alpha Plateau) sulfur hexafluoride, deuterium, helium, hydrogen, isopropanol, nitrogen, paraffinic oil, liquid oxygen, mineral oil, sodium hydroxide, and sodium nitrite; (VETS) ammonia, chlorine, deuterium, diesel fuel, ethylene glycol, potassium phosphate, flourine, helium, hydrogen, hydrogen peroxide, propane, nitrogen, potassium hydroxide, sodium chloride, sodium

hydroxide, ammonium hydroxide, paraffinic oil. Chemical storage is generally in small containers, drums, pressurized cylinders, or bulk storage tanks.

Drainage in the northern portion of the test plateau is to the north, toward Blind Canyon, while drainage in the southern and eastern portions of the test plateau is to the south, toward Talega Creek. No evidence of contamination, distressed vegetation, petroleum-hydrocarbon staining, illegal dumping, or improper waste storage/handling were noted in the test plateau area during the site reconnaissance.

A separate road leads north and east from the test plateau, past the cooling water treatment facility. Just east of the cooling water treatment facility, the main road intersects the Kinder Morgan 16-inch petroleum pipeline, which runs across the property from north to south. This pipeline serves military facilities to the south, and has no connection with the subject property. A road running south along the pipeline leads to the former high power microwave laser test site (HPM) and the Omega Shield Building (42RA).Continuing east from the petroleum pipeline, a second road intersects the main road. This road leads north into Blind Canyon, to two receiver sites, and eventually to a gated entrance into Rancho Mission Viejo. Further east along the main road several portable office buildings were noted to the south. These are apparently being stored in this location on a temporary basis. The main road continues east approximately 1.5 miles, past a pistol range on the north side of the road, before curving north and west toward the 10,000-foot receiver site (41KA). There was no chemical use or storage noted on the property east of the test plateau.

EEI personnel conducted a driving inspection on accessible roads, then attempted to obtain vistas of backcountry areas by walking along ridgetops and river terraces in the northern, eastern, and southeastern portions of the property. EEI was not able to access the eastern or southeastern property boundaries, although these areas are undeveloped. No evidence of contamination, distressed vegetation, petroleum-hydrocarbon staining, illegal dumping, or improper waste storage/handling were noted in backcountry areas during the site reconnaissance.

TABLE 2
Summary of Site Reconnaissance

ITEM	CONCERNS	COMMENTS
General Housekeeping	No	Facility appears well maintained and in good condition. Hazard communication, health and safety, and spill prevention programs in place and in use.
Surface Spills	No	None observed.
Stained Soil/pavement	No	None observed.
Surface Impoundments	No	Fire water storage pond observed 42W, north of pump house 41C.
Fill Materials	No	None observed.
Holding Ponds	No	Holding basins (concrete) observed at Drum Farm (41E).
Surface Drainage	No	To the south and west
Pits/ponds/lagoons	No	Sewage aeration pond observed below (south of) Building 41A.
AGT's/UST's	Yes	One 3,000-gallon gasoline UST observed at the fueling station (41Q). Numerous AGT's on site, containing a variety of chemicals including diesel, waste water, propane, nitrogen, oxygen, helium, hydrogen peroxide, nitrogen triflouride, hydrazine, ammonia, deuterium, argon, methylhydrazine, sulfur hexafluoride, isopropanol, and chlorine.
Electrical Substations	No	Several observed on site. SDGE facilities located along western and southwestern margin of property.
Distressed Vegetation	No	None observed.
Areas of Dumping	No	None observed.
Pole-mounted Transformers	No	Several observed on site.
Solid Waste Disposal	No	Municipal trash service.
Waste scrap storage	No	Boneyards at FETS and at 42T
Water supply/wells	No	Two water supply wells observed along Cristianitos Creek near western margin of property.
Chemical use/storage	Yes	Large quantities of highly toxic, flammable, and oxidizing chemicals used and stored on site.
Other issues	Yes	Two pistol ranges present on site (one no longer in use).

5.2.2 Adjacent Properties

Adjacent properties are agricultural/undeveloped to the north, east, southeast, and northwest. Barracks from the Camp Pendleton Marine Corps Base and residential properties are present to the southwest. No environmental concerns were noted.

6.0 CONCLUSIONS/RECOMMENDATIONS

EEI conducted a Phase I Environmental Site Assessment (ESA) at the subject property in March/April 2003. The ESA included a review of regulatory database lists as per ASTM 1527-00. Pursuant to the requirements of Section 65962.5 of the California Government Code, the subject property was not located on the State list of identified hazardous waste and/or hazardous substance sites.

Based on a site reconnaissance, a review of physiographic, historical and regulatory information, and information provided by the property owner, no evidence of *recognized environmental conditions* has been revealed in connection with the subject site, nor any adjacent property, except for the following:

1. Two pistol ranges are present at the subject property. One (no longer in use) is located near the main gate. The second is located along the road to the 10,000-foot receiver site. These sites represent a potential lead and/or copper hazard and should be assessed and abated. Spent ammunition should be removed and site soils tested to assess residual lead and copper concentrations. Soil with residual lead or copper concentrations exceeding US EPA's Preliminary Remediation Goals' (PRG's) for Region 9 should be removed from the property and disposed of at an appropriate facility.

2. In January 1990, a leak was discovered in a 1.5-inch diameter underground diesel fuel pipeline at the Fossil Energy Test Site (FETS). This pipeline was used to convey diesel fuel for use in a FETS compressor. Soil samples analyzed for total petroleum hydrocarbons (TPH) resulted in concentrations ranging from 600 to 18,000 mg/kg. Soil excavation was conducted, with soil sampling and analyses for TPH, yielding approximately 3,000 cubic yards of potentially contaminated soil. This soil was stockpiled on site, and in January 1991, approximately 3,350 tons of hydrocarbon-contaminated soil was disposed at the Prima Deshecha Landfill. On May 23, 1991, TRW was issued a letter from the San Diego RWQCB stating that Board staff had determined that soils at the site exceeding cleanup objectives established by the Board had been removed and disposed of in a Class III facility. Based on the remediation report and accompanying data, it appears that the diesel contaminated soils at the FETS were successfully removed. Therefore, no further investigation appears to warranted.

3. Operations at the site involve the use of highly toxic, flammable, and oxidizing chemicals. Prior to lease termination, a comprehensive closure plan should be prepared and implemented By TRW (Northrop Grumman Space Technology) to assess, monitor, and mitigate any residual threats to human health or the environment which may remain as a result of site operations. This includes any existing, historical, or threatened releases of any hazardous substances or petroleum products into structures, soil, and/or groundwater beneath the property at any of the many locations where these chemicals are used.

4. Most of the site structures were built prior to 1980, therefore, EEI recommends that a complete asbestos /lead-based paint survey be conducted prior to any demolition or remodeling.

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PHASE I ENVIRONMENTAL SITE ASSESSMENT

PLANNING AREA 9
(GABINO CANYON)
Verdugo Canyon Road
San Juan Capistrano, California

May 1, 2003
(Revised February 2004)

EEI Project No. V030305-38A-PA9

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Phase I Environmental Site Assessment

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1.0 INTRODUCTION

1.1 Purpose

The purpose of this Phase I Environmental Site Assessment (ESA) was to assess the possible presence of *recognized environmental conditions* within the Planning Area Nine (Gabino Canyon) portion of Rancho Mission Viejo, located along Verdugo Canyon Road and east of Ortega Highway in San Juan Capistrano, California (**Site Location Map, Figure 1**). *Recognized environmental conditions* include those property uses that may indicate the presence or likely presence of an existing, historical, or threatened release of any hazardous substances or petroleum products into structures, soil, and/or groundwater beneath the property. The term *recognized environmental conditions* is not intended to include *de minimus* conditions that generally do not present a material risk of harm to public health or the environment.

This ESA was performed in general conformance with the American Society for Testing and Materials (ASTM) *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process,* designation E1527-00.

1.2 Scope of Services

The scope of services outlined below was performed in accordance with the Agreement for Professional Services dated February 12, 2003 (Proposal 39A), between Morgan Lewis, & Bockius, LLP, and EEI.

- A review of available documents for topographic, geologic, and hydrogeologic data affecting the site.
- A review of available maps, aerial photographs and other documents to estimate historical site usage and development.
- A review of federal, state, county, and city documents concerning hazardous material storage, generation, and disposal, active and inactive landfills, nearby environmental concerns, and associated permits.
- Interviews with individuals having knowledge of the site.
- A site reconnaissance to ascertain the current condition of the site.
- The preparation of this report which presents our findings, conclusions, and recommendations.

1.3 Reliance

This ESA has been prepared for the sole use of Morgan Lewis, & Bockius, LLP, and Rancho Mission Viejo. This assessment should not be relied upon by other parties without the express written consent of EEI, Morgan Lewis, & Bockius, LLP, and Rancho Mission Viejo. Therefore, any use or reliance upon this assessment by a party other than Morgan Lewis, & Bockius, LLP, and Rancho Mission Viejo, shall be solely at the risk of such third party and without legal recourse against EEI, its employees, officers, or directors, regardless of whether the action in which recovery of damages is brought is based upon contract, tort, statute or otherwise.

This assessment should not be interpreted as a statistical evaluation of the site, but is rather intended to provide a preliminary indication of on-site impacts from previous site usage or the release of hazardous materials. If no significant indicators of the presence of hazardous materials are encountered during this search, this does not preclude their presence.

The findings in this report are based upon a review of published geologic and hydrogeologic information, information (both documentary and oral) provided by Rancho Mission Viejo, Orange County Planning/Building and Safety Department, Orange County Fire Authority, Orange County Health Care Agency, Orange County Agricultural Commissioner, First Search (an environmental database retrieval system), various state and federal agencies, and field observations. Some of these data are subject to change over time. Some of these data are based on information not currently observable or measurable, but recorded by documents or orally reported by individuals.

2.0 PROPOSED PROJECT

2.1 Overall Description of Proposed Project

As proposed by Rancho Mission Viejo, the project includes 22,815 acres general planned and zoned for development of up to 14,000 dwelling units in nine planning areas and other uses and open space within four planning areas. Other uses include 91 acres of urban activity center uses, 240 acres of business park uses, 50 acres of neighborhood retail uses, up to four golf courses and approximately 15,576 acres of open space area which includes a proposed 1,034 acre regional park. Within the nine planning areas proposed for development, approximately 7,694 acres would be developed. Ranching and other agricultural activities would also be retained within a portion of the proposed open space area. Infrastructure would be constructed to support all of these uses, including road improvements, utility improvements and schools. The Planning Area Location Map (**Plate 1**) illustrates the boundaries of the proposed project.

2.2 Description of Planning Area

Planning Area Nine would cover approximately 9,272 acres in the southeastern portion of the project site, and would retain its existing 5-Open Space land use designation under the General Plan. Preservation of acreage within this Planning Area, as part of the Southern Subregion NCCP/HCP program, will constitute a key component of that program's habitat reserve. The Project applicant also proposes to continue ranching operations. In recognition of the biological sensitivity of the area, a grazing management plan would be developed to ensure the continued coexistence of ranching operations and sensitive species. The grazing management plan will be developed in conjunction with the Southern Subregion NCCP/HCP program.

Also, within a 420-acre overlay zone, known as the O'Neill Ranch, the Project would provide for a total of 100 estate homes on approximately 200 acres, along with 120 casitas on 20 acres, and a 218-acre golf course. The very low-density housing to be developed in this overlay zone would be incorporated within the surrounding open space.

Existing authorized land uses would continue until the commencement of any new proposed land use for the affected areas.

3.0 PHYSIOGRAPHIC SETTING

3.1 Site Description

The subject property is located on a portion of the parcels identified by assessors parcel numbers 125-150-62, 125-150-63, and 125-150-52 (**Assessors Parcel Map, Appendix A**). Access to the site is from Ortega Highway, Verdugo Canyon Road, and several ranch access roads. The site is currently vacant (**Site Plan, Figure 2**).

The property is bounded by Ortega Highway and open space to the west, and by open space/grazing land to the north, east, and south. According to the Orange County Planning Department, the site is zoned A-1 (General Agriculture). A copy of the County Zoning Map is included in **Appendix B**.

3.2 Topography

The site is located southeast of San Juan Creek. Site elevations range from approximately 500 feet above mean sea level (amsl) to 800 feet amsl throughout the property. The topographic gradient in the site vicinity is to the south/southwest at approximately 0.15 feet per foot. Surface drainage from the site flows south west into San Juan Creek, and eventually into the Pacific Ocean, approximately 12 miles to the southwest. Based on the Flood Zone Map published by the Federal Emergency Management Agency (FEMA), the site does not lie within a 100-year flood zone. The nearest flood plain is San Juan Creek, approximately 1000 feet west of the subject property.

3.3 Regional and Local Geology

The site is located in an alluvial valley (San Juan Creek) on the southwestern slopes of the Santa Ana Mountains (Norris and Webb, 1990). The Santa Ana Mountains form the northwest margin of the Peninsular Ranges Geomorphic Province, and are comprised principally of granitic, metavolcanic, and sedimentary rocks of Jurassic to Pliocene age. The mountains are the result of relatively slow, late-Quaternary uplift which has shaped the range into a dissected horst block.

Sedimentary deposits in the San Juan Creek area are a homoclinal sequence of marine and nonmarine formations including the Pliocene Capistrano and Monterey Formations, the Miocene Topanga Formation, the Eocene Sespe and Santiago Formations, the Paleocene Silverado Formation, and the Upper Cretaceous Williams and Ladd Formations. These deposits lie unconformably upon the older metamorphic and volcanic rocks, including the Jurassic Santiago Peak Volcanics and the Bedford Canyon Formation. Quaternary alluvial soils, derived primarily from weathering of the Santa Ana Mountains, form the gently sloping river terraces in the site vicinity.

Soil in the vicinity of the site has been identified by the United States Department of Agriculture - National Resource Conservation Service as belonging to the Soboba and Capistrano associations (USDA, 1978). Soil in these associations are typically well- to excessively- drained clay and sandy loams, and form from granitic to calcareous sandstone and shale of the Santa Ana mountains. The soils are slow to moderately permeable, runoff and erosion is high if slopes are bare.

Structural deformation in the vicinity of the site is related to the Elsinore Fault Zone, a major northwest-southeast trending strike-slip fault zone located approximately 12 miles to the northeast. Motion along the Elsinore Fault Zone is primarily right-lateral, although a vertical component may also be present. The Elsinore Fault Zone is considered active, with major ruptures occurring roughly every 250 years at magnitudes of between 6.5 - 7.5 (SCEC, 1998). Other major faults in the vicinity of the site include the

Cristianitos Fault (west of the site), the Mission Viejo Fault (just west of the site) and the Newport Inglewood Fault (southwest of the site).

3.4 Regional and Local Hydrogeology

According to the Basin Plan published by the San Diego Regional Water Quality Control Board (SDRWQCB, 1994), the northern portion of the site lies within the Upper San Juan Hydrologic Subarea of the San Juan Hydrologic Unit, and the southern portion lies within the San Mateo Hydrologic Area of the San Juan Hydrologic Unit. In general, groundwater in this area has been designated as beneficial for domestic/municipal, agricultural, and industrial uses. Groundwater levels in the vicinity of the site are seasonally variable, but generally occur at between 10 and 100 feet bgs.

The Upper San Juan Hydrologic Subarea is located within the San Juan Creek watershed. San Juan Creek (immediately north of the site), Verdugo Canyon (east of the site), and Bell Canyon (northwest of the site) are the major drainages within this watershed. According to the SDRWQCB, the drainages within this watershed are exempt from municipal use, but have been designated as beneficial for agricultural, industrial, warm water habitat, cold water habitat, wildlife habitat, and recreational 1 and 2.

The San Mateo Hydrologic Area is located within the San Mateo Creek watershed. San Mateo Creek (south of the site), and Christianitos Creek (west of the site) are the major drainages within this watershed. According to the SDRWQCB, the drainages within this watershed are exempt from municipal use, but have been designated as beneficial for warm water habitat, wildlife habitat, and recreational 1 and 2.

4.0 SITE BACKGROUND

4.1 Site Ownership

Information regarding site ownership was provided by Rancho Mission Viejo. The current owner is listed as the San Juan Partnership No. 1 and No. 5. The owner's address is listed as PO Box 9, San Juan Capistrano, California, 92693.

4.2 Site History

EEI reviewed available information sources to evaluate historic land use in and around the property. Aerial photographs, United States Geological Survey maps, and Sanborn maps were researched. The site does not have an assigned address, therefore a review of city directories and other sources requiring a specific address were not included as a part of this ESA.

4.2.1 Aerial Photograph Review

Aerial photographs were reviewed to identify historical land development and any uses which may have impacted the site. Photographs dating from 1952 to 1999 were reviewed at the Continental Air Photo. In addition, an aerial photograph from 2002 (EDAW) was reviewed. **Table 1** summarizes the results of the aerial photograph review. A copy of the 2000 photograph is provided in **Figure 3**.

TABLE 1
Summary of Aerial Photograph Review

Year	Photo ID	Comments
1952	AXK-4K-46 (1)	The site and vicinity are unoccupied and undeveloped with thick brush throughout the property.
1959	9-33-131 (1)	No pertinent changes are noted since the previous photograph.
1970	61-8-210 (1)	No pertinent changes are noted since the previous photograph.
1973	B2-14-11 (1)	No pertinent changes are noted since the previous photograph.
1977	181-15-13 (1)	A pond is located in the central portion of the site along Gabino Canyon. No additional changes are noted since the previous photograph.
1983	15-23 (1)	A small area (approximately 4 acres) in the southern portion of the site is cleared and partly cultivated with a small trailer on the property. The rest of the site is vacant with thick brush.
1997	C-117-43-48/47 (1)	No structures were noted, and the majority of the property was vacant with thick brush.
1999	C-136-43-149 (1)	No pertinent changes are noted since the previous photograph.
2002	EDAW (2)	A few small structures were noted in the southern portion of the site (possibly beehives). The remainder of the site is vacant and appears in its current configuration.

(1) Aerial Photograph viewed at Continental Aerial Photographs, Los Alamitos, California

(2) Aerial Photograph obtained from EDAW

4.2.2 Historic Maps

EEI reviewed topographic maps dating from 1942 to1988 at the University of California at Santa Barbara, Map and Imagery Laboratory. The 1942 map was published by the United States Army Corps of Engineers. The 1948, 1968, 1975, 1980, 1982, and 1988 maps were published by the United States Geological Survey.

The 1942 map noted the presence of a water tank along Verdugo Canyon and one along Gabino Canyon in the southern portion.

No changes were noted on the 1948 map, except for the presence of a water tank in the cental portion of the property, in Gabino Canyon, and the presence of Verdugo Canyon Road and the other ranch access roads.

The 1986 through 1988 maps note the presence of the three afore-mentioned water tanks, along with a windmill near the water tank along Verdugo Canyon. No other changes were noted.

4.2.3 Sanborn Maps

EEI researched available Sanborn Fire Insurance Maps of the subject site. Sanborn Maps provide detailed information on site structures, uses, and occupancies and were typically utilized by insurance companies to evaluate potential fire risk. Based on EEI's review, no Sanborn Fire Insurance Maps are available for the area surrounding the subject site, indicating little commercial development prior to 1950.

4.2.4 Orange County Building and Safety Department Files

Based on reviews of historic aerial photographs, historic topographic maps and interviews with the property owner, the site has never been developed. Therefore, a review of building department records was not conducted for this ESA.

4.3 Regulatory Database Search

EEI reviewed known electronic database listings for possible hazardous waste generating establishments in the vicinity of the site, as well as on sites in the area with known environmental concerns. Facilities were identified by county, state, or federal agencies and either generate, store, or dispose of hazardous materials. The majority of information in this section was obtained from FirstSearch®, an environmental information/database retrieval service. A copy of the FirstSearch® report is provided in **Appendix C**, along with a description of the individual databases. The subject property was not listed in any of the databases reviewed as having environmental concerns. For discussion purposes, the term "non-geocoded" is applied to sites that either have non-existent or incomplete addresses. EEI has attempted to locate these sites, based on the location description provided in the records search. Below is a list of databases that were reviewed in the preparation of this report.

4.3.1 Federal Databases

National Priority List (NPL) (Superfund) - No listings within one mile of the subject site.

Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) - No listings within one mile of the subject site.

No Further Remedial Actions Planned (NFRAP) - No listings within one mile of the subject site.

RCRA TSD Facility list (RCRA-D) - No listings within one mile of the subject site.

RCRA Corrective action sites (COR) - No listings within one mile of the subject site.

RCRA Generators (RCRA-G) -The Environmental Protection Agency (EPA) regulates generators of hazardous material through the Resource Conservation and Recovery Act (RCRA). All hazardous waste generators are required to notify EPA of their existence by submitting the Federal Notification of Regulated Waste Activity Form (EPA Form 8700-12) or a state equivalent form. Four sites were identified within one mile of the subject property. **Ortega Rock Quarry** is approximately one mile north of the subject site. They are listed as a small quantity generator (generates 100-1000 kg a month of hazardous waste). Three other non-geocoded sites were identified. The sites are actually located greater than one mile from the subject property. Operating permits are not generally considered rational for environmental concern unless a documented release has occurred at the property. Therefore, these sites are not considered environmental concerns at this time.

RCRA No Longer Regulated (NLR) - No listings within one mile of the subject site.

Emergency Response Notification System (ERNS) - Eleven non-geocoded sites were reported. The calls appear to be mostly highway/railway related with no or a minor amount of material released. All eleven sites appear to be at least one half mile away from the subject site. Therefore, these reports are not considered environmental concerns at this time.

The subject site was not identified by any of the sources listed above as having an environmental concern or operating permit.

4.3.2 State and Regional Databases

Sites that are Contaminated or Potentially Contaminated by Hazardous Wastes (State Sites) - One non-geocoded site was reported within one mile of the subject site. The Capistrano Unified School District proposed a school location within one mile of the subject site. The Department of Toxic Substances Control was called to the location for an inspection. No action was needed. Therefore, this incident is not considered an environmental concern.

Sites with a record of spills, leaks, investigations, and cleanups (Spills - 1990) - No listings within one mile of the subject site.

Solid Waste Landfills (SWL) - Seven non-geocoded sites were reported were reported within one mile of the subject property. **Prima Deschecha Sanitation Landfill** (at the end of La Pata Road) is greater than one mile from the subject site. This site disposes of non-hazardous wastes. **La Pata Greenwaste Facility** (31748 La Pata Avenue) is greater than one mile from the subject site. Other reported sites are either greater than one mile from the subject site or do not have enough information to be properly located. Based on their distances from the subject property, none of these sites are considered environmental concerns at this time.

Establishments Issued a Permit to Track Site Status as a hazardous waste generator, gas station, TSD, underground tanks, violations, or unauthorized releases (Permits) - No listings within one mile of the subject site.

Other Unique Databases (Other) - Two sites were reported within one mile of the subject property. **Lomas San Juan Model Home Site** and **Los Pinos Forestry Camp** (39251 Ortega Highway) were identified as LUST sites. They are further discussed in the LUST section below.

Permitted Underground/Aboveground Storage Tanks (REG UST/AST) - Six sites were identified within one mile of the subject site. **Ortega Rock Quarry** (33977 Ortega Highway) was listed twice, although no details were provided on the tanks located on the site. The four other listed sites were non-geocoded, and after further inspection, EEI located the sites greater than one mile from the subject property. Based on the distances from the subject property and the fact that operating permits are not generally considered rational for environmental concern (unless documented releases have occurred at the property), these sites are not considered as environmental concerns at this time.

Leaking Underground Storage Tanks (Leaking UST) - Two sites were reported within one mile from the subject property. **Los Pinos Forestry** (approximately one mile north of the site) reported a gasoline leak on August 14, 1992 (case number 9UT2481). Reportedly the aquifer is impacted, and a preliminary site assessment is underway. Based on the distance from the subject site (i.e., over one-quarter mile) and the position relative to the subject property (i.e., downhill/downgradient) this site is not considered an environmental concern at this time. The second site, **Lomas San Juan Model Home Site** is non-geocoded and the location of the site is unknown. A gasoline leak was reported on January 1, 1965, and the aquifer is reportedly impacted. Soil at the site was excavated and treated or removed. The site was closed on December 11, 1991. Based on the status of the case (closed), this site is not considered an environmental concern at this time.

Releases into air and surface water (Releases) - Two non-geocoded sites were reported within one mile of the subject property. These sites are located along Oso Street, San Juan Capistrano, which is greater than one mile from the subject site. Therefore, these sites are not considered an environmental concern at this time.

PCB Activity Database System (PADS) - No listings within one mile of the subject site.

The subject site was not listed in any of the databases above.

4.4 Regulatory Agency Review

4.4.1 Orange County Fire Authority

EEI contacted the Orange County Fire Authority's office for information regarding hazardous materials storage at the subject site. According to Fire Department personnel, the site does not have an official address or hazardous materials permit file, and is not currently under a regular inspection schedule.

4.4.2 Orange County Health Care Agency

EEI reviewed Orange County Health Care Agency (OCHCA) databases including Leaking Underground Storage Tank (LUST) sites, Underground Storage Tank (UST) Facilities, Non-petroleum Underground Tanks, Hazardous Waste Generators (HWG) and Land Fill Sites, to determine if the subject site or any properties within the site vicinity were listed as having an environmental concern. Neither the subject property nor any adjacent properties were listed on any of the databases researched.

4.4.3 California Regional Water Quality Control Board

EEI contacted the California Regional Water Quality Control Board - San Diego Region (SDRWQCB) to determine whether the site or any nearby property was listed as having a leaking underground tank, spill, leak, or aboveground tank problem. In addition, EEI reviewed the Underground Storage Tank Information System (LUSTIS) and Spills, Leaks, Investigations, and Cleanup (SLIC) List, published by the SDRWQCB. There were no listings for the subject site nor any adjacent property.

4.4.4 Review of Division of Oil, Gas and Geothermal Resources Files

EEI reviewed information regarding oil production near the site provided by the California Division of Oil, Gas, and Geothermal Resources. Based on file data, one exploratory well, drilled in 1964 to approximately 3,370 feet below ground surface was drilled adjacent to the subject property to the southwest. The well is listed as an abandoned plugged hole (no production) and is not considered as an environmental concern at this time.

4.5 Interview with Key Site Personnel

EEI contacted Fred Vorhees, Ranch Manager for Rancho Mission Viejo (property owner), who was interviewed regarding key site information. Mr. Vorhees indicated that he has been working at the Ranch for approximately 30 years and is familiar with the subject property. A list of the questions asked, and a summary of their responses, is included below.

Q: Is the property or any adjoining property used for an industrial or agricultural use?

A: No.

Q: To the best of your knowledge, was the property or any adjoining property used for industrial or agricultural purposes in the past?

A: No.

Q: Are you aware of any current or previous uses of the site or adjoining properties which may create an environmental concern?

A: No.

Q: To the best of your knowledge has the property or any adjoining property ever been used as a gasoline station, motor repair facility, commercial printing facility, dry cleaners, photo developing laboratory, junkyard or landfill, or as a waste treatment, storage, disposal, processing or recycling facility?

A: No.

Q: Are there currently, or to the best of your knowledge have there been previously, any damaged or discarded automotive or industrial batteries, or pesticides, paints or other chemicals in individual containers of greater than 5 gal (19 L) in volume or 50 gal (190 L) in the aggregate, stored on or used at the property or at the facility?

A: No.

Q: Are there currently, or to the best of your knowledge have there been previously, any industrial drums (typically 55 gal) or sacks of chemicals located on the property or at the facility?

A: No.

Q: Has fill dirt been brought onto the property that may have originated from a contaminated site or that is of an unknown origin?

A: No.

Q: Are there currently, or to the best of your knowledge have there been previously, any pits, ponds, or lagoons located on the property in connection with waste treatment or waste disposal?

A: No.

Q: *Is there currently, or to the best of your knowledge has there been previously, any stained soil on the property?*

A: No.

Q: Are there currently, or to the best of your knowledge have there been previously, any registered or unregistered storage tanks (above or underground) located on the property, aside from the existing aboveground waste oil tank?

A: No.

Q: Are there currently, or to the best of your knowledge have there been previously, any vent pipes, fill pipes, or access ways indicating a fill pipe protruding from the ground on the property or adjacent to any structure located on the property?

A: No.

Q: Are there currently, or to the best of your knowledge have there been previously, any flooring, drains, or walls located within the facility that are stained by substances other than water or are emitting foul odors?

A: No.

Q: If the property is served by a private well or non-public water system, have contaminants been identified in the well or system that exceed guidelines applicable to the water system or has the well been designated as contaminated by any government environmental/health agency?

A: No.

Q: Does the owner or occupant of the property have any knowledge of environmental liens or governmental notification relating to past or recurrent violations of environmental laws with respect to the property or any facility located on the property?

A: No.

Q: Has the owner or occupant of the property been informed of the past or current existence of hazardous substances or petroleum products or environmental violations with respect to the property or any facility located on the property?

A: No.

Q: Does the owner or occupant of the property have any knowledge of any environmental site assessment reports prepared for the property or facility that indicated the presence of hazardous substances or petroleum products on, or contamination of, the property or recommended further assessment of the property?

A: No.

Q: Does the owner or occupant of the property know of any past, threatened, or pending lawsuits or administrative proceedings concerning a release or threatened release of any hazardous substance or petroleum products involving the property by any owner or occupant of the property?

A: No.

Q: Does the property discharge waste water on or adjacent to the property other than storm water into a sanitary sewer system?

A: No.

Q: To the best of your knowledge, have any hazardous substances or petroleum products, unidentified waste materials, tires, automotive or industrial batteries or any other waste materials been dumped above grade, buried and/or burned on the property?

A: No.

Q: Is there a transformer, capacitor, or any hydraulic equipment for which there are any records indicating the presence of PCBs?

A: No.

4.6 Other Environmental Issues

4.6.1 Asbestos Containing Materials

Asbestos is a natural mineral fiber used in the manufacture of a number of different building materials. Asbestos has also been identified as a human carcinogen. Most friable (i.e., those that are easily broken or crushed) asbestos-containing materials (ACM) were banned in building materials by 1978. By 1989, most major manufacturers had voluntarily removed non-friable ACM (i.e., flooring, roofing, and mastics/sealants) from the market. However, these materials were not banned completely.

In October 1995, the Federal Occupational Safety and Health Administration (OSHA) redefined the manner by which building materials are classified in regards to asbestos and the also the way these materials are to be handled. Under this ruling, "thermal system insulation and sprayed-on or troweled on or otherwise applied surfacing materials" applied before 1980 are considered presumed asbestos containing materials (PACM). Other building materials such as " floor or ceiling tiles, siding, roofing, transite panels" (i.e., non-friable) are also considered PACM unless tested.

There are no structures located on the subject site. Therefore the presence of ACM is not anticipated.

4.6.2 Lead-Based Paint

Lead-based paint is identified by OSHA , the Environmental Protection Agency (EPA) and the Department Housing and Urban Development Department (HUD) as being a potential health risk to humans, particularly children, based upon its effects to the central nervous system, kidneys, and bloodstream. The risk of lead-based paint has been classified by HUD based upon the age and condition of the painted surface. This classification includes the following:

- maximum risk is from paint applied before 1950
- a severe risk is present from paint applied before 1960
- a moderate risk is present from paint applied before 1970
- a slight risk is present from paint applied before 1977
- paint applied after 1977 is not expected to contain lead.

There are no structures located on the subject property. Therefore the presence of lead-based paint is not anticipated.

4.6.3 Radon

Radon is a radioactive gas which has been identified as a human carcinogen. Radon gas is typically associated with fine-grained rock and soil, and results from the radioactive decay of radium. EPA recommends that homeowners in areas with radon screening levels greater than 4 pCi/L (picocurries per liter) conduct mitigation of radon gas to reduce exposure.

Sections 307 and 309 of the Indoor Radon Abatement Act of 1988 (IRAA) directed EPA to list and identify areas of the U.S. with the potential for elevated indoor radon levels. EPA's Map of Radon Zones (EPA-402-R-93-071) assigns each of the 3,141 counties in the U.S. to one of three zones based on radon potential:

- Zone 1 counties have a predicted average indoor radon screening level greater than 4 pCi/L.
- Zone 2 counties have a predicted average indoor radon screening level between 2 and 4 pCi/L.
- Zone 3 counties have a predicted average indoor radon screening level less than 2 pCi/L.

Based on such factors as indoor radon measurements; geology; aerial radioactivity; soil permeability; and foundation types, EPA has identified Orange County as Zone 3 (i.e., low potential for radon gas). Therefore, EEI does not consider radon as a concern at this time.

5.0 SITE RECONNAISSANCE

5.1 Purpose

The purpose of the site reconnaissance was to visually and physically observe the site, site structures, and adjoining properties for conditions indicating an existing release, past release, or threatened release of any hazardous substances or petroleum products into structures of the site, or into soil and/or groundwater beneath the site. This would include any evidence of contamination, distressed vegetation, petroleum-hydrocarbon staining, waste drums, illegal dumping, or improper waste storage/handling.

5.2 Results of Site Reconnaissance

5.2.1 Subject Site

On April 9, 2003, EEI personnel visited the entire site. Photographs 1 through 10 (**Appendix D**) document the site reconnaissance, which is summarized in **Table 2**.

EEI personnel conducted a driving inspection around the perimeter of the subject property, then traversed the site from east to west and north to south. The site is an undeveloped and unoccupied area located along Verdugo and Gabino Canyons, east of Ortega Highway and west of the county line. The property encompasses approximately 90 one-acre lots and a larger, approximately 300-acre area along Gabino Canyon. Verdugo Canyon is a northeast-southwest trending valley stretching from Riverside County towards San Juan Creek and Ortega Highway. Gabino Canyon is a north-south trending valley stretching from Verdugo Canyon south-southwest.

Access to the site is through a gated entrance on Ortega Highway. An unpaved access road crosses through the site along Verdugo Canyon and continues to the northeast towards the county line and into the adjacent hills. A second unpaved access road heads south through Gabino Canyon, where it meets up with several other unpaved (and unnamed ranch access roads).

The subject property is predominantly vacant, used for grazing and open space. A windmill was noted along Verdugo Canyon Road, within one of the one-acre parcels.

No evidence of evidence of contamination, distressed vegetation, petroleum-hydrocarbon staining, waste drums, illegal dumping, or improper waste storage/handling were noted during the site reconnaissance.

5.2.2 Adjacent Properties

Adjacent properties are undeveloped in all directions. Ortega Highway and a nursery are located to the west. No environmental concerns were noted on any of the adjacent properties.

TABLE 2
Summary of Site Reconnaissance

ITEM	CONCERNS	COMMENTS
General Housekeeping	No	Property appears well maintained and in good condition.
Surface Spills	No	None observed.
Stained Soil/pavement	No	None observed.
Fill Materials	No	None observed.
Pits/ponds/lagoons	No	A medium-sized pond was noted in the central portion of the property, in Gabino Canyon.
Surface Impoundments	No	None observed.
AGT's/UST's	No	None observed.
Distressed Vegetation	No	None observed.
Wetlands	No	None observed.
Electrical Substations	No	None observed.
Areas of Dumping	No	None observed.
Pole-mounted Transformers	No	None observed.
Waste/scrap storage	No	None observed.
Chemical use/storage	No	None observed.

6.0 CONCLUSIONS/RECOMMENDATIONS

EEI conducted a Phase I Environmental Site Assessment (ESA) at the subject property in March/April 2003. The ESA included a review of regulatory database lists as per ASTM 1527-00. Pursuant to the requirements of Section 65962.5 of the California Government Code, the subject property was not located on the State list of identified hazardous waste and/or hazardous substance sites.

Based on a site reconnaissance, a review of physiographic, historical and regulatory information, and information provided by the property owner, no evidence of *recognized environmental conditions* has been revealed in connection with the subject site, nor any adjacent property. Therefore, no further investigation is recommended at this time.

7.0 REFERENCES

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