



UNITED STATES MARINE CORPS

MARINE CORPS BASE  
BOX 555008  
CAMP PENDLETON, CALIFORNIA 92055-5008

IN REPLY REFER TO:  
5090.10  
ENVSEC/415  
JUL 24 2002

US Dept of CMRC Nat'l Oceanic  
Atmospheric Admin c/o US EPA  
Attn: Ms. Laurie Sullivan  
75 Hawthorne Street  
San Francisco ca 94105

Dear Ms. Sullivan,

I am calling on the assistance of the Technical Review Committee (TRC) once again. Marine Corps Base, Camp Pendleton's Installation Restoration Program has completed the Five-Year Review Report for Installation Restoration (IR) Site 9 - Operable Unit 1, Marine Corps Base Camp Pendleton, California. The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) requires a five-year review be conducted to evaluate the protectiveness of the remedy being implemented at the site.

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Reference Desk  
330 North Coast Highway  
Oceanside, California

I would like to also request your participation at a TRC meeting to be held at Marine Corps Base, Camp Pendleton on August 20, 2002, at 1:00 p.m. in Building 2282. An overview of the IR Program will be presented. Please bring any review comments on the document with you to the meeting. A map with directions to the meeting location is provided in enclosure (2). The meeting should not last more than two hours.

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**JUL 24 2002**

Black & Veatch Waste Sci., Inc.  
Attn: Mr. William Leever  
6 Venture, Suite 315  
Irvine, CA 92618

Dear Mr. Leever,

I am calling on the assistance of the Technical Review Committee (TRC) once again. Marine Corps Base, Camp Pendleton's Installation Restoration Program has completed the Five-Year Review Report for Installation Restoration (IR) Site 9 - Operable Unit 1, Marine Corps Base Camp Pendleton, California. The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) requires a five-year review be conducted to evaluate the protectiveness of the remedy being implemented at the site.

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**JUL 24 2002**

City of Oceanside  
Community Services Department  
Attn: Ms. Ester Beatty  
Public Works  
300 North Coast Highway  
Oceanside, CA 92054

Dear Ms. Beatty,

I am calling on the assistance of the Technical Review Committee (TRC) once again. Marine Corps Base, Camp Pendleton's Installation Restoration Program has completed the Five-Year Review Report for Installation Restoration (IR) Site 9 - Operable Unit 1, Marine Corps Base Camp Pendleton, California. The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) requires a five-year review be conducted to evaluate the protectiveness of the remedy being implemented at the site.

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ENVSEC/415

**JUL 24 2002**

County of San Diego  
Air Pollution Control District  
Attn: Ms. Rosa Salcedo  
9150 Chesapeake Drive  
San Diego, CA 92123-1096

Dear Ms. Salcedo,

I am calling on the assistance of the Technical Review Committee (TRC) once again. Marine Corps Base, Camp Pendleton's Installation Restoration Program has completed the Five-Year Review Report for Installation Restoration (IR) Site 9 - Operable Unit 1, Marine Corps Base Camp Pendleton, California. The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) requires a five-year review be conducted to evaluate the protectiveness of the remedy being implemented at the site.

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3/2/2



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ENVSEC/415  
JUL 24 2002

San Diego Department of Health Services  
Site Assessment and Mitigation Division  
Attn: Mr. George McCandless  
1255 Imperial Avenue, Third Floor  
San Diego, CA 92138-5261

Dear Mr. McCandless,

I am calling on the assistance of the Technical Review Committee (TRC) once again. Marine Corps Base, Camp Pendleton's Installation Restoration Program has completed the Five-Year Review Report for Installation Restoration (IR) Site 9 - Operable Unit 1, Marine Corps Base Camp Pendleton, California. The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) requires a five-year review be conducted to evaluate the protectiveness of the remedy being implemented at the site.

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JUL 24 2002

U.S. Dept. of Health and Human Services  
Public Health Service Agency for  
Toxic Substances and Disease Registry  
Attn: Ms. Carol Hossom  
Executive Park, Building 33  
1600 Clifton Road  
Atlanta, GA 30333

Dear Ms. Hossom,

I am calling on the assistance of the Technical Review Committee (TRC) once again. Marine Corps Base, Camp Pendleton's Installation Restoration Program has completed the Five-Year Review Report for Installation Restoration (IR) Site 9 - Operable Unit 1, Marine Corps Base Camp Pendleton, California. The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) requires a five-year review be conducted to evaluate the protectiveness of the remedy being implemented at the site.

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ENVSEC/415

**JUL 24 2002**

United States Department of the Interior  
Fish and Wildlife Service  
Attn: Ms. Judy Gibson  
2730 Locker Avenue West  
Carlsbad, CA 92008

Dear Ms. Gibson,

I am calling on the assistance of the Technical Review Committee (TRC) once again. Marine Corps Base, Camp Pendleton's Installation Restoration Program has completed the Five-Year Review Report for Installation Restoration (IR) Site 9 - Operable Unit 1, Marine Corps Base Camp Pendleton, California. The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) requires a five-year review be conducted to evaluate the protectiveness of the remedy being implemented at the site.

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ENVSEC/415  
**JUL 25 2002**

Department of Fish and Game  
OSPR Headquarters  
Attn: Ms. Vicki Lake  
1700 K Street, Suite 250  
Sacramento, CA 95814

Dear Ms. Lake,

I am calling on the assistance of the Technical Review Committee (TRC) once again. Marine Corps Base, Camp Pendleton's Installation Restoration Program has completed the Five-Year Review Report for Installation Restoration (IR) Site 9 - Operable Unit 1, Marine Corps Base Camp Pendleton, California. The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) requires a five-year review be conducted to evaluate the protectiveness of the remedy being implemented at the site.

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**JUL 23 2002**

Commanding General  
Assistant Chief of Staff, Facilities  
Water Resources Office  
Attn: Mr. Larry Carlson  
Box 555013, Bldg 1142  
Marine Corps Base  
Camp Pendleton, CA 92055-5013

Dear Mr. Carlson,

I am calling on the assistance of the Technical Review Committee (TRC) once again. Marine Corps Base, Camp Pendleton's Installation Restoration Program has completed the Five-Year Review Report for Installation Restoration (IR) Site 9 - Operable Unit 1, Marine Corps Base Camp Pendleton, California. The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) requires a five-year review be conducted to evaluate the protectiveness of the remedy being implemented at the site.

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Naval Hospital, Camp Pendleton  
Industrial Hygiene Department  
Attn: LCDR Dan Field  
Box 555191, Bldg H-100  
Camp Pendleton, CA 92055-5191

Dear LCDR Field,

I am calling on the assistance of the Technical Review Committee (TRC) once again. Marine Corps Base, Camp Pendleton's Installation Restoration Program has completed the Five-Year Review Report for Installation Restoration (IR) Site 9 - Operable Unit 1, Marine Corps Base Camp Pendleton, California. The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) requires a five-year review be conducted to evaluate the protectiveness of the remedy being implemented at the site.

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**JUL 23 2002**

Marine Corps Air Station, Camp Pendleton  
Environmental Office  
Attn: Ms. Diane Walsh  
Box 555151, Bldg. 23171  
Camp Pendleton, CA 92055-5151

Dear Ms. Walsh,

I am calling on the assistance of the Technical Review Committee (TRC) once again. Marine Corps Base, Camp Pendleton's Installation Restoration Program has completed the Five-Year Review Report for Installation Restoration (IR) Site 9 - Operable Unit 1, Marine Corps Base Camp Pendleton, California. The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) requires a five-year review be conducted to evaluate the protectiveness of the remedy being implemented at the site.

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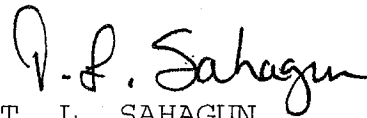
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Commanding General  
Assistant Chief of Staff, Environmental Security  
Attn: Ms. La Rae N. Landers  
Box 555008, Bldg 22165  
Marine Corps Base  
Camp Pendleton, CA 92055-5008

If you have any further questions, please call Ms. La Rae Landers, Installation Restoration Branch Head, at (760) 725-9744.

Sincerely,



T. L. SAHAGUN  
RCRA Division Head  
Assistant Chief of Staff,  
Environmental Security  
By direction of the  
Commanding General

Enclosures: (1) Selected sections from the Five-Year Review Report for Installation Restoration (IR) Site 9 - Operable Unit 1, Marine Corps Base Camp Pendleton, California, May 20, 2002

(2) Meeting location map

Copy to w/out Enclosure (1):

U.S. Environmental Protection Agency  
Region IX, Code SFD-8-B  
Attn: Mr. Martin Hausladen  
75 Hawthorne Street  
San Francisco, CA 94105-3901

California Environmental Protection Agency  
California Regional Water Quality Control Board  
Site Mitigation and Clean-up Unit  
Attn: Ms. Beatrice Griffey  
9174 Sky Park Court, Suite 100  
San Diego, CA 92123-4340

California Environmental Protection Agency  
Department of Toxic Substance Control  
Site Mitigation Branch  
Attn: Mr. Tayseer Mahmoud  
5796 Corporate Avenue  
Cypress, CA 90603

U.S. Environmental Protection Agency  
Region IX, Superfund Division, Code SFD-3  
Attn: Ms. Viola Cooper  
75 Hawthorne Street  
San Francisco, CA 94105-3901

California Environmental Protection Agency  
Department of Toxic Substance Control  
Public Participation Branch  
Attn: Ms. Leticia Hernandez  
5796 Corporate Avenue  
Cypress, CA 90630

Commanding Officer  
Southwest Division Naval Facilities Engineering Command  
Attn: Mr. Mike Bilodeau, Code 5CEN.MB  
1220 Pacific Highway  
San Diego, CA 92132-5190

Parsons Engineering Science, Inc.  
Attn: Mr. Steve Griswold  
100 West Walnut Street  
Pasadena, CA 91124

IT Corporation  
Attn: Mr. Max Pan  
3347 Michelson Dr., Suite 200  
Irvine, CA 92612

**Five-Year Review Report for  
Installation Restoration (IR) Site 9 – Operable Unit 1  
Marine Corps Base Camp Pendleton  
Camp Pendleton, California**

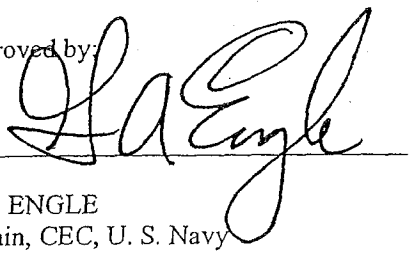
**Five-Year Review Report**

**May 20, 2002**

**PREPARED BY:**

**Southwest Division  
Naval Facilities Engineering Command  
San Diego, California**

Approved by:

  
\_\_\_\_\_  
G. A. ENGLE  
Captain, CEC, U. S. Navy  
Commander

Date:

2 JUL 02

# *Section 1*

## *Introduction*

The United States Department of the Navy (DoN) has conducted a 5-year review of the remedial actions implemented in accordance with the Record of Decision (ROD) issued for Installation Restoration (IR) Site 9, 41 Area Stuart Mesa Stabilization Pond, in the southwest portion of Marine Corps Base (MCB) Camp Pendleton (Figure 1-1). This review was conducted from December 2000 through January 2001. This report documents the results of the review. Analysis for the 5-year review was conducted by the Southwest Division Naval Facilities Engineering Command (SWDIV), with technical support from OHM Remediation Corp. (OHM), a wholly owned subsidiary of The IT Group (IT). This report was prepared in accordance with the draft guidance developed by the U.S. Environmental Protection Agency (EPA, 1999). A draft version of this report was submitted to federal and state regulatory agencies for review in March 2001. This report was finalized in accordance with the review comments and responses to comments. A copy of the comments and responses is provided in Appendix A. During the finalization process, both the DoN and the EPA issued their final guidance on conducting the five-year review. This document was reviewed and finalized for compliance with DoN (DoN, 2001) and EPA (EPA, 2001) final guidance.

The DoN has conducted this 5-year review as required by the ROD and consistent with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) requirements 121 (c), 42 U.S.C. 9621 (c) and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), 40 C. F. R. 300.430 (f) (4) (ii). CERCLA §121(c), as amended, that states the following:

If the President selects a remedial action that results in any hazardous substances, pollutants, or contaminants remaining at the site, the President shall review such remedial action no less than each 5 years after initiation of such remedial action to assure that human health and the environment are being protected by the remedial action being implemented.

As set forth in the NCP, Title 40 of the Code of Federal Regulations (CFR), Part 300.430(f)(4)(ii), states the following:

If a remedial action is selected that results in hazardous substances, pollutants, or contaminants remaining at the site above levels that allow for unlimited use and unrestricted exposure, the lead agency shall review such action no less often than every 5 years after the initiation of the selected remedial action.

As outlined in DoN (DoN, 2001) and EPA (EPA, 2001) guidance documents, the purpose of a 5-year review is to determine whether the remedy at the site is protective of human health and the environment. The methods, finding, and conclusions of the reviews are documented in 5-year review reports. In addition, 5-year review reports identify deficiencies found during reviews, if any, and recommendations to address them.



The ROD for IR Site 9 was signed on December 12, 1995 (date of the last signature of the FFA members, the RWQCB). Because the hazardous substances, pollutants, or contaminants remaining at the site exceed concentrations that allow for unrestricted use and unlimited exposure, a 5-year review is required. This is the 5-year review for IR Site 9. Depending on future development of the site, another 5-year review could be required in the future if the remaining contamination continues to restrict unlimited use of the site.

# Five-Year Review Summary Form

## SITE IDENTIFICATION

Site name (from WasteLAN) Site 9, 41 Area Stuart Mesa Stabilization Pond

EPA ID (from WasteLAN) CA2170023533

Region: 09

State: CA

City/County: Camp Pendleton / San Diego County

## SITE STATUS

NPL status: ☒ Final ☐ Deleted ☐ Other (specify) \_\_\_\_\_

Remediation status (choose all that apply): ☐ Under Construction ☒ Operating ☐ Complete

Multiple OUs? ☐ YES ☒ NO

Construction completion date: \_\_\_\_ / \_\_\_\_ / \_\_\_\_

Has site been put into reuse? ☐ YES ☒ NO

## REVIEW STATUS

Reviewing agency: ☒ EPA ☒ State ☐ Tribe ☒ Other Federal Agency \_\_\_\_ DoN \_\_\_\_

Author name: Ed Miranda

Author Title: Remedial Project Manager

Author affiliation: Southwest Division Naval Facilities Engineering Command

Review period: December / 2000 to January / 2001

Date(s) of inspection: 12 / 21 / 2000

Type of review: ☒ Statutory

☐ Policy

(☐ Post-SARA ☐ Pre-SARA ☐ NPL-Removal only

☐ Non-NPL Remedial Action Site ☐ NPL State/Tribe-lead

☐ Regional Discretion)

Review number: ☒ 1 (first) ☐ 2 (second) ☐ 3 (third) ☐ Other (specify) \_\_\_\_\_

### Triggering action:

☐ Actual RA Onsite Construction at OU # \_\_\_\_

☐ Actual RA Start at OU # \_\_\_\_

☐ Construction Completion

☐ Previous Five-Year Review Report

☒ Other (specify) Initial 5-year review per NCP Part 300.430(f)(4)(ii) – contaminants remaining at the site exceed concentrations that allow for unlimited use and unrestricted exposure.

Triggering action date (from WasteLAN): 12 / 07 / 1995

Due date (five years after triggering action date): 12 / 07 / 2000

## Five-Year Review Summary Form

### Deficiencies:

- Base personnel are not aware of the reason for the restricted use classification for the site area due to a lack of signs indicating hazardous substances are present in the groundwater.
- Not enough groundwater data to fully evaluate the fate of PCE contamination.
- PCE has not degraded in one well as predicted in the fate and transport model and the concentration in this well are higher than 5 years ago.
- One of the security fence panels at the former grease disposal pit needs to be repaired.
- The dedicated groundwater sampling pump in well MW03-S needs to be repaired or replaced.
- Four additional wells need to be included in the monitoring plan to meet the ROD requirements of 12 wells to be sampled on a semi-annual basis.
- More soil and groundwater data are needed to assess the possible source of the increasing PCE in monitoring well 9W-07A.

### Recommendations and Follow-up Actions:

- Repair the security fence panel at the grease disposal pit.
- Repair or replace the dedicated sampling pump in well MW-03S.
- Install signs to reinforce access restrictions to the site and provide contact information.
- Monitor groundwater levels in wells to establish the groundwater hydrology and identify the well screens in relation to the hydrogeologic units at the site.
- Collect groundwater samples from existing monitoring wells once to assess the extent of PCE and help redefine the 12 well monitoring plan per the ROD.
- Collect additional soil samples from the southeast portion of the waste stabilization pond through the installation of one soil boring in this area. The soil boring will be converted into a groundwater monitoring well for sampling of groundwater directly underlying the pond.
- Reassess the current monitoring program based on additional soil and groundwater sampling results. Modify the monitoring program as required so that the effectiveness of natural attenuation can be better assessed.

### Protectiveness Statement(s):

Currently, there are no exposure routes to groundwater at Site 9. The remedy at IR Site 9 is protective of human health and the environment unless the exposure routes to groundwater change significantly in the future. Although the assumptions used at the time of the remedy selection may need revisions, such revisions are not expected to have a critical impact on the exposure risk. The revisions are more likely to impact the projection on the overall time frame required for the remedy to achieve the remedial goal. Institutional controls implemented for the site will continue to restrict the future land and groundwater uses in the vicinity of the site. These measures are the primary means for protecting human health and the environment from exposure risk.

### Other Comments:

The effectiveness of natural attenuation will be reevaluated after additional groundwater monitoring data become available. The evaluation will be presented in the groundwater monitoring reports compiled on a semiannual basis.

## *Section 2*

### *Site Chronology*

MCB Camp Pendleton is the primary Marine Corps amphibious training center on the west coast. In addition to amphibious training, training for many of the various Marine Corps missions also is accomplished at MCB Camp Pendleton. Construction of MCB Camp Pendleton started in March 1942, and President Franklin D. Roosevelt dedicated the base in September 1942. Although MCB Camp Pendleton has been an important training facility since its inception in 1942, it was not designated a permanent base until October 1944. The base covers approximately 125,000 acres, almost entirely in San Diego County. The base currently supports more than 36,000 military personnel and employs approximately 4,600 civilians.

The DoN, acting on behalf of and in concert with the USMC and in accordance with authority in CERCLA, the NCP and Executive Order 12580, conducted and implemented the IR program at MCB Camp Pendleton since the early 1980s. The IR program is designed, in part, to evaluate and remediate, if necessary, contamination caused by hazardous substances, pollutants, or contaminants, pursuant to CERCLA. The initial list of eight IR sites at MCB Camp Pendleton was established on the basis of the results of the initial site assessment performed in 1983/1984 (Naval Energy and Environmental Support Activity [NEESA], 1984). In November 1989, MCB Camp Pendleton was added to the National Priorities List (NPL), primarily because an herbicide was detected in two drinking water production wells in a groundwater basin of the base.

IR Site 9 was identified during the site inspection process in 1988 (SWDIV, 1994). The site was used as a sewage lagoon for oxidation and percolation of raw sewage generated in Las Flores 41 Area in the southwestern part of MCB Camp Pendleton (Figure 2-1) from 1963 to 1974 or 1975. The site is southwest of Stuart Mesa Road and consists of an approximately 400- by 500-foot waste stabilization pond surrounded by engineered earthen berms and a partially fenced grease disposal pit to the east of the waste stabilization pond (Figure 2-2). The waste stabilization pond reportedly was used for stockpiling soil contaminated with petroleum hydrocarbons, primarily fuel and oil. Mounds of dirt and dark stains were visible on the bottom of the waste stabilization pond, as indicated in the ROD. The visual inspection in 1988 also indicated that waste oils and other liquids may have been disposed of at the site in the past.

Under the base IR program, the parties to the Federal Facility Agreement (FFA) assigned IR sites to groups in alphabetical order (starting with Group A) based on potential impact to health and the environment. Those sites that posed the highest threat were addressed first (i.e., Group A sites). Along with five other sites, IR Site 9 was assigned to Group A. A remedial investigation (RI) of the Group A sites (SWDIV, 1993) was conducted between February 1992 and April 1993 and indicated that IR Site 9 was the only site requiring further remedial action via a feasibility study (FS). Three additional rounds of groundwater monitoring (Phase II RI) were conducted between May 1993 and April 1994. The IR Site 9 FS was completed in 1994 (SWDIV, 1994) under the remedial investigation/feasibility study (RI/FS) program for Operable Unit (OU) 1 (OU1). The remedial action for IR Site 9 was established through the signing of the OU1 ROD on December 12, 1995. IR Site 9 was the only site requiring further action under the OU1 ROD; no other sites addressed in the OU1 ROD required remedial action.

Based on the OUI ROD, the major components of the remedy for IR Site 9 include the following:

- Amend the Base MasterPlan to restrict future access to groundwater in the immediate vicinity of IR Site 9 for the duration of the long-term monitoring or until groundwater contaminants no longer exceed cleanup goals.
- In the unlikely event that the site is converted to residential use, considerable regrading and import of clean fill, as well as notification requirements to inform interested parties of remaining site contaminants and their concentrations, would be required.
- Sample and analyze groundwater semiannually for 10 years to verify that dispersion and natural attenuation are occurring.
- Evaluate the effectiveness of the remedy no less often than every 5 years.
- Conduct compliance demonstration monitoring consisting of eight sampling events evenly spaced throughout a 1-year period during the eighth year of groundwater monitoring to assess the effectiveness of dispersion and natural attenuation processes.

The following is a chronology of events for IR Site 9, 41 Area Stuart Mesa Stabilization Pond:

#### Chronology of Site Events

Event	Date
Initial discovery of the Site and Process	1988 Site Inspection and sampling
Pre-NPL Responses	None
NPL Listing of MCB Camp Pendleton	15 November 1989
Removal Actions	None
Phase I RI	February 1992 through April 1993
Phase II RI (groundwater monitoring)	May 1993 through April 1994
FS	1994
ROD Signature	December 12, 1995
ROD Amendments	None
Other Enforcement Documents	None
Remedial Design (start, finish)	Not required, remediation is by natural attenuation
Remedial Construction (start, finish)	Not applicable
Remedial Action (start)	December 7, 1995
Monitoring of Remedial Action	Semiannually since April 30, 1997
Final Closeout Report	None
Previous Five-Year Reviews	None

## *Section 8*

### *Deficiencies*

The visual inspection of the site and interviews with base personnel indicated that site conditions and land uses have not changed in the last 5 years. With the exception of one panel of the security fence at the former grease disposal pit, there is no sign of damage that requires repair or maintenance.

Base personnel are not aware of the reason for the restricted use classification for the site area due to a lack of signs indicating hazardous substances are present in the groundwater.

A review of the groundwater monitoring data indicated that the dedicated groundwater sampling pump in well MW-03S needs to be repaired or replaced. In addition, the groundwater data collected through the current groundwater monitoring plan do not provide an adequate basis for a full evaluation of the effectiveness of the selected remedy. As such, additional data, including groundwater level measurements and water-quality sampling, are required.

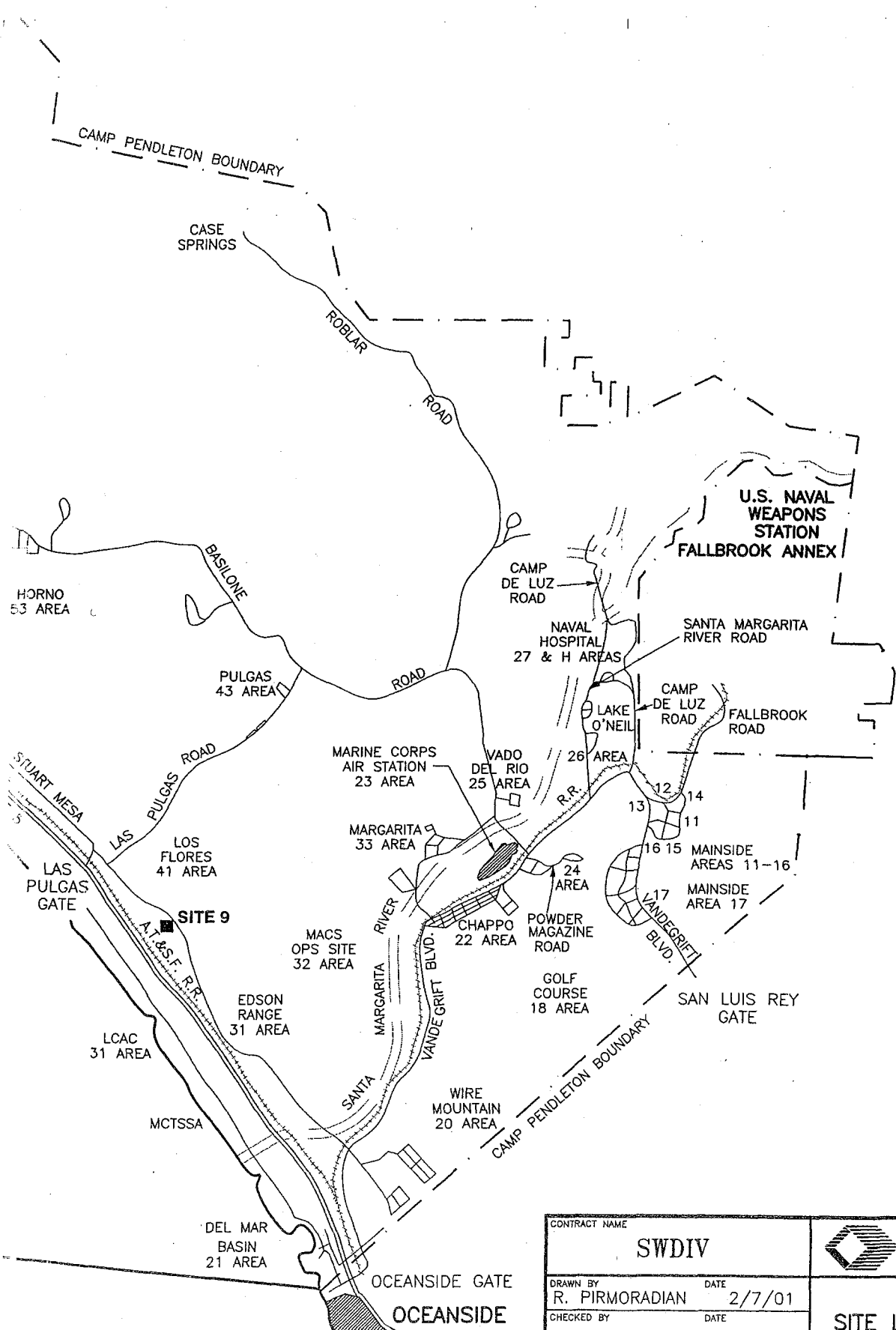
The ROD specified that semi-annual groundwater monitoring should include a total of 12 wells. The current monitoring program included only 8 wells and was not sampled consistently on a semi-annual basis. Therefore, the current monitoring program needs to be modified to include at least four more wells and be implemented on a timely manner. The exact purpose of the monitoring well (i.e., function of the well, monitoring parameters, evaluation criteria) should also be identified so that the monitoring data can be properly evaluated.


## *Section 9*

### *Recommendations and Follow-up Actions*

Based on responses to review comments (presented in Appendix A) made on the draft version of this report and discussions made during the 66<sup>th</sup> FFA meeting held on November 14, 2001, the DoN will take the following action to rectify the deficiencies identified by this review:

- Repair the security fence panel at the grease disposal pit.
- Repair or replace the dedicated sampling pump in well MW-03S.
- Install signs to reinforce access restrictions to the site and provide contact information.
- Monitor groundwater levels in existing wells to establish the groundwater hydrology and identify the well screens in relation to the hydrogeologic units at the site.
- Collect groundwater samples from existing monitoring wells once to assess the extent of PCE migration and help redefine the 12 well monitoring plan per the ROD.
- Although the ROD already specified that the soil contamination at the site required no further action, it was decided in the 66<sup>th</sup> FFA meeting that, in light of continuing detection of PCE in groundwater sample from Well 9W-7A, additional soil samples will be collected from the southeast portion of the waste stabilization pond. This area appeared to have not been sampled during the RI stage. The soil sampling will be performed through the installation of one soil boring in this area. The soil boring will be converted into a groundwater monitoring well for sampling of groundwater. The DoN and Marine Corps should develop a work plan in collaboration with the FFA members on details of the sampling approach.
- Reassess the current monitoring program after the above information becomes available. Modify the monitoring program as required so that the effectiveness of natural attenuation can be fully monitored and assessed.
- If additional soil and/or groundwater data indicated that a previously unidentified source is causing the groundwater contamination found in 9W-7A, additional action should be initiated as required.



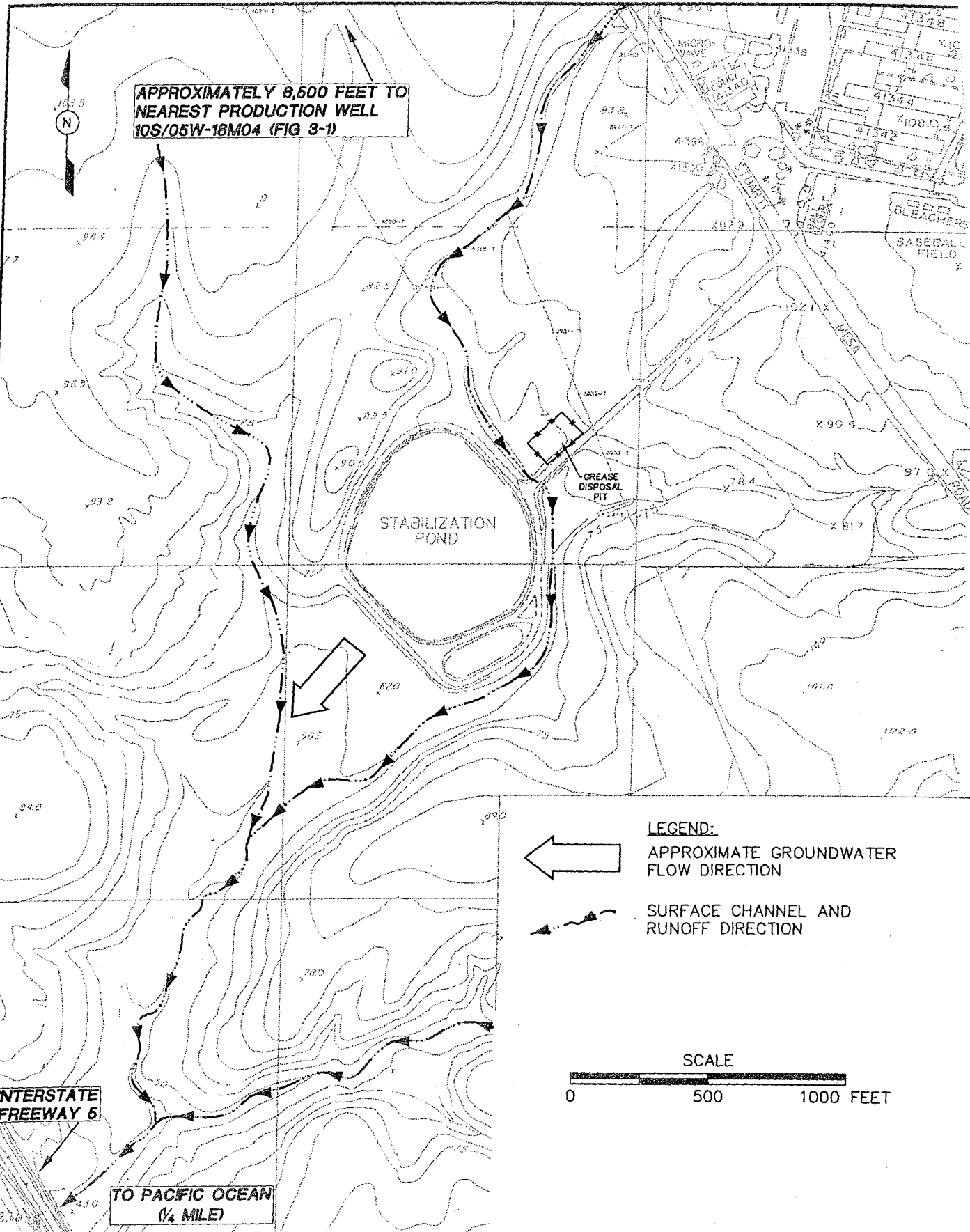
CONTRACT NAME <b>SWDIV</b>		 <b>OHM Remediation Services Corp</b> A Subsidiary of OHM Corporation SAN DIEGO, CA	
DRAWN BY <b>R. PIRMORADIAN</b>		DATE <b>2/7/01</b>	
CHECKED BY		DATE	
APPROVED BY <i>[Signature]</i>		DATE <b>2-22-01</b>	
PROJECT MANAGER <i>[Signature]</i>		DATE <b>2-22-01</b>	
AUTOCAD FILE No. <b>780516011.DWG</b>			
SCALE <b>NONE</b>	SHEET <b>1</b>	OF <b>1</b>	DOCUMENT CONTROL No. <b>SW10151</b>
		OHM PROJECT No. <b>780516</b>	DRAWING No. <b>FIG 2-1</b>

**SITE LOCATION AND BASE AREAS**

**MARINE CORPS BASE  
CAMP PENDLETON, CALIFORNIA**

REVISIONS		
DESCRIPTION	DATE	APPROVED





**OHM Remediation Services Corp.**  
 A Subsidiary of OHM Corporation  
 SAN DIEGO, CA

CONTRACT NAME

**SWDIV**

DRAWN BY	DATE
R. PIRMORADIAN	3/14/01
CHECKED BY	DATE
APPROVED BY	DATE
PROJECT MANAGER	DATE

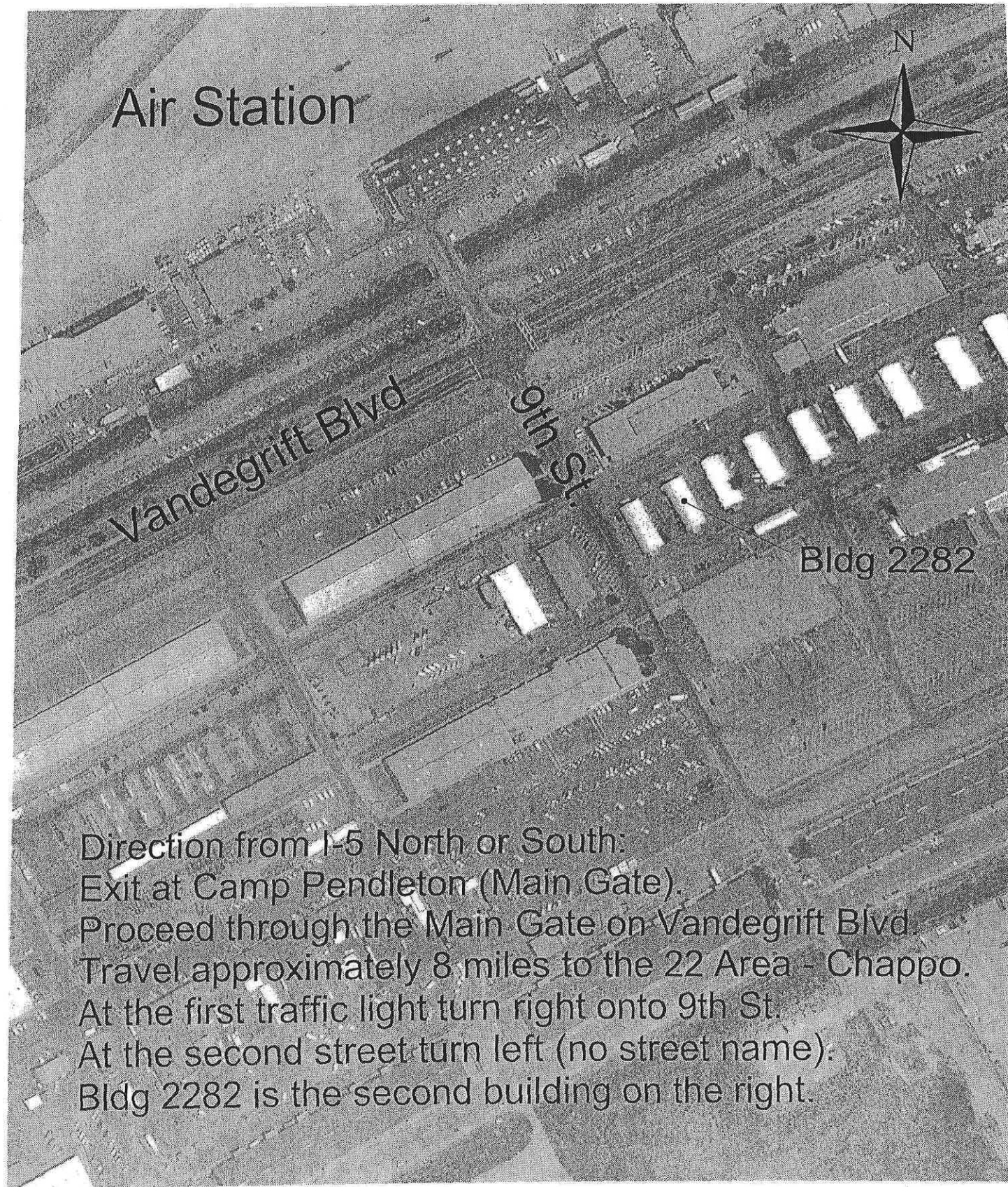
**IR SITE 9**  
**SURFACE RUNOFF DIRECTION**

**MARINE CORPS BASE**  
**CAMP PENDLETON, CALIFORNIA**

AUTOCAD FILE No.	PLOT SCALE	SHEET	OF	SCALE	DOCUMENT CONTROL No.	OHM PROJECT No.	FIGURE No.	REVISION
780516010.DWG	1=1	1	1	1"=500'	SW10151	780516	FIG 3-2	0

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# Directions to AC/S Environmental Security Training Bldg 2282



Direction from I-5 North or South:  
Exit at Camp Pendleton (Main Gate).  
Proceed through the Main Gate on Vandegrift Blvd.  
Travel approximately 8 miles to the 22 Area - Chappo.  
At the first traffic light turn right onto 9th St.  
At the second street turn left (no street name).  
Bldg 2282 is the second building on the right.

500

0

500

1000 Feet