US Army Corps
of Engineers
HUNTSVILLE DIVISION

Defense Environmental Restoration Program
for
Formerly Used Defense Sites

Ordnance and Explosive Waste
Chemical Warfare Materials

ARCHIVES SEARCH REPORT

FINDINGS

VICTORVILLE PBR N-1, VICTORVILLE PBR #2, VICTORVILLE PBR #7, AND VICTORVILLE PBR #8

SAN BERNARDINO COUNTY, CALIFORNIA

PROJECT NUMBERS J09CA067201, J09CA068601,
J09CA069201, AND J09CA069301

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Prepared by
US ARMY CORPS OF ENGINEERS
ST. LOUIS DISTRICT

ORDNANCE AND EXPLOSIVE WASTE
CHEMICAL WARFARE MATERIALS
ARCHIVES SEARCH REPORT
FOR
VICTORVILLE PBR N-1, PBR #2, PBR #7 AND PBR #8
SAN BERNARDINO COUNTY, CALIFORNIA

DERP-FUDS PROJECT NUMBERS J09CA067201, J09CA068601,
J09CA069201, AND J09CA069301

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1.0 Introduction

1.1 Authority

In 1980, Congress enacted the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) 42 USC 9601 et seq. Ordnance and Explosive Wastes (OEW) are included in the CERCLA definition of pollutants and contaminants that require a remedial response.

In 1983, the Environmental Restoration Defense Account (ERDA) was established by Public Law 98-212. This Congressionally-directed fund was to be used for environmental restoration at Department of Defense (DOD) active installations and formerly used properties. The DOD designated the Army as the sole manager for environmental restoration at closed installations and formerly used properties. The Secretary of the Army assigned this mission to the Corps of Engineers (USACE) in 1984.

The 1986 Superfund Amendments and Reauthorization Act (SARA) amended certain aspects of CERCLA, some of which directly related to OEW contamination. Chapter 160 of the SARA established the Defense Environmental Restoration Program (DERP). One of the goals specified for the DERP is "correction of environmental damage (such as detection and disposal of unexploded ordnance) which creates an imminent and substantial endangerment to the public health or welfare or to the environment."

The DERP requires that a CERCLA response action be undertaken whenever such "imminent and substantial endangerment" is found at:

A. A facility or site that is owned by, leased to, or otherwise possessed by the United States and under the jurisdiction of the Secretary of Defense.

B. A facility or site that was under the jurisdiction of the Secretary of Defense and owned by, leased to, or otherwise possessed by the United States at the time of actions leading to contamination.

C. A vessel owned or operated by the Department of Defense.

The National Contingency Plan (NCP) was established by the Clean Water Act of 1972. The NCP has been revised and broadened several times since then. Its purpose is to provide the organizational structure and procedures for remedial actions to be taken in response to the presence of hazardous substances, pollutants, and contaminants at a site. Section 105 of the 1980 CERCLA states that the NCP shall apply to all response actions taken as a result of CERCLA requirements.

The March 1990 National Oil and Hazardous Substances Pollution Contingency Plan given in 40 CFR part 300 is the latest version of the NCP. Paragraph 300.120 states that "DOD will be the removal response authority with respect to incidents involving DOD military weapons and munitions under the jurisdiction, custody, and control of DOD."

On 5 April 1990, U.S. Army Engineer Division, Huntsville (USAEDH) was designated as the USACE Mandatory Center of Expertise (MCX) and Design Center for Ordnance and Explosive Waste (OEW). As the MCX and Design Center for OEW, USAEDH is responsible for the design and successful implementation of all Department of the Army OEW remediations required by CERCLA. USAEDH will also design and implement OEW remediation programs for other branches of the Department of Defense when requested. In cooperation with the Huntsville Division, the U.S. Army Corps of Engineers St. Louis District has been assigned the task of preparing Archives Search Reports for those Formerly Used Defense Sites (FUDS) suspected of chemical warfare materials (CWM) contamination.

1.2 Subject

This is a combined report covering four of the twenty-five precision bombing ranges (PBR) used by Victorville Army Airfield. The four precision bombing ranges discussed in this report are N-1, #2, #7 and #8, and all are located in San Bernardino County, California. Acquisition of the bombing ranges began with a 2 September 1942 directive to acquire the necessary property for the bombing ranges. There is written information, as well bomb debris, on each bombing range providing evidence that the bombing ranges were used.

PBR N-1 was located approximately 32 miles north and slightly east of Victorville. The 644.75 acre site was acquired by transfer from the Department of Interior (DOI). The target was marked with concentric oiled rings. The property was declared surplus on 28 January 1948 and relinquished to the Department of Interior on 27 June 1949. The land is currently owned by the Bureau of Land Management (BLM).

PBR #2 was located approximately eight miles east of Victorville. The 640 acre site consisted of 440 acres fee and 200 acres transfer from the Department of Interior. The target was marked with wood and concentric oiled rings. Custody of the 440 fee acres was assumed by the War Assets Administration on 3 September 1948. The 200 transfer acres were transferred back to Department of Interior. The entire area has since been subdivided and sold to private individuals some of whom have constructed homes.

PBR #7 was located approximately 24 miles east of Victorville. The 640 acre site consisted of 440 acres fee and 200 acres transfer from the Department of Interior. The target was marked with wood and concentric oiled rings. The property was

declared surplus and custody was assumed by the War Assets Administration in August 1947. BLM currently owns 180 acres and the remainder of the site has been sold to private individuals. The land is currently undeveloped.

PBR #8 was located approximately 26 miles east and slightly south of Victorville. The 640 acre site was acquired by transfer from the Department of Interior. The target was marked with wood and concentric oiled rings. The property was declared surplus and custody was assumed by the Department of Interior on 30 January 1948. The entire area has since been subdivided and sold to private individuals, some of whom have constructed homes.

1.3 Purpose

This Archives Search Report (ASR) compiles information obtained through historical research at various archives and records-holding facilities, air photo review, interviews with people associated with the sites, and site inspections. All efforts were directed at determining the possible use or disposal of conventional ordnance on the sites.

1.4 Scope

This archives search report focuses primarily on the potential for the presence of unexploded ordnance remaining on these sites.

This report presents site history, description and characterization of the immediate surrounding area, real estate ownership information, and evaluation of potential ordnance contamination.

2.0 Previous Site Investigations

An Inventory Project Report (INPR) for PBR N-1 was prepared in August 1992 by the Los Angeles District, Corps of Engineers. However, the property described in the INPR is not PBR N-1. It appears PBR N-1 has been confused with PBR #1.

INPR's for PBR #2, PBR #7, and PBR #8 were prepared in September 1992 by the Los Angeles District, Corps of Engineers.

3.0 Site and Site Area Descriptions

3.1 Location of the Sites

All four of the subject precision bombing ranges are located in the general vicinity of Victorville, California. PBR N-1 was located approximately 32 miles north and slightly east of Victorville. PBR #2 was located approximately eight miles east of Victorville. PBR #7 was located approximately 25 miles east of Victorville. PBR #8 was located approximately 26 miles east and slightly south of Victorville.

3.2 Past Uses of the Sites

All four of the precision bombing ranges were owned by the Department of Interior prior to DOD use. All of the land was undeveloped desert.

3.3 Current Uses of the Sites

PBR N-1 is owned by BLM. PBR #2 and PBR #8 were subdivided and sold to private individuals, some of whom have constructed homes on the property. PBR #7 is partially owned by BLM and the rest has been subdivided and sold to private individuals. PBR #7 remains undeveloped.

3.4 Demographics of the Sites

3.4.1 Centers of Activity

PBR N-1 is located near the City of Barstow, San Bernardino County, California. This community has numerous centers of activity such as Calico Ghost Town, Rainbow Basin, Mojave River Valley Museum, and various parks located throughout the community.

PBR #2, PBR #7, and PBR #8 are located near the City of Victorville, San Bernardino County, California. This community has some activity going on in the area such as a new industrial park. Various parks are located throughout the community. Many residents choose to live in this community and commute to their jobs. Population there is expected to increase.

3.4.2 Population Density

City:	Barstow	County:	San Bernardino
Area:	N\A sq.mi.	Area:	20,064 sq.mi.
POP:	21,472	POP:	1,556,300
PD:	N\A persons per sq.mi.	PD:	77.6 persons per sq.mi.

City:	Victorville	County:	San Bernardino
Area:	50.08 sq.mi.	Area:	20,064 sq.mi.
POP:	54,924	POP:	1,556,300
PD:	1,096 persons per sq.mi.	PD:	77.6 persons per sq.mi.

Population and area are based on the U.S. Department of Commerce, Bureau of the Census, 1990 statistics, and telephone interviews.

3.4.3 Type of Businesses

A review of both telephone interviews and County Business Patterns (1990) assisted in developing business profiles of the Barstow and Victorville areas.

The City of Barstow is diversified. The largest employers are: RHEox, Inc., Continental RPV's, Calico Rock Milling, Kar Ice Services, Inc., Marine Corps Logistics Base, and Yellow Freight Systems.

The City of Victorville is not diversified. The largest employers are: Wal-Mart, Sears, Target, Contel/GTE, Victor Valley Community Hospital, and St. Mary's Desert Valley Hospital.

3.4.4 Type of Industry

Barstow is an economically diverse community. The community supports retail and service industries, along with light industries. Victorville is not an economically diverse community. The community supports retail and service industries.

3.4.5 Type of Housing

Housing in Barstow and Victorville is comprised of both single and multi-family homes.

3.4.6 New Development in the Area

Development in the Barstow area includes residential dwellings as well as new businesses in the area. Development in the Victorville area includes residential dwellings and industry.

3.4.7 Typical Cross-Section of Population

The ancestry in Barstow is diverse. The percentage of those under the age of 18 is 30.9%, over 65 years is 9.0 %. The median age is 29. Approximately 52.6% of the population is white, 10.5% Black, 31.3% Hispanic, 2.2% American Indian or Eskimo, and 3.4% Asian or Pacific Islander. There are approximately 8,509 housing units with a median value of $ 71,900. The work force, based on the number of establishments, of San Bernardino County is broken down into the following: manufacturing, 6.8%; agriculture, 1.7%; services, 31.0%; trade and finance, 38.7%; other, 21.8%.

The ancestry in Victorville is diverse. The percentage of those under the age of 18 is 31.0%, over 65 years is 11.6%. The median age is 30. Approximately 62.6% of the population is white, 9.6% Black, 23.0% Hispanic, 1.1% American Indian or Eskimo, and 3.7% Asian or Pacific Islander. There are approximately 15,627 housing units with a median value of $ 102,800. The work force, based on the number of establishments, of San Bernardino County is broken down into the following: manufacturing, 6.8 %; agriculture 1.7%; trade and finances, 38.7%; services, 31.0%; others, 21.8%.

4.0 Physical Characteristics of the Sites

4.1 Geology/Physiography

The Victorville PBR's are located within the eastern Mojave Desert Section of the Basin and Range physiographic province (Thornbury 1965). The Mojave Desert is outlined by the San Andreas fault on the south and the Garlock fault on the north. The right-lateral slip on the San Andreas and the left-lateral slip on the Garlock indicate the Mojave block is moving relatively east.

The eastern portion of the Mojave Desert is characterized by basins and open valleys between mountainous masses. In the southern part, the mountains and valleys have a northwest alignment, in the northern half, this alignment is nonexistent.

There are many fault zones in the area. Most of which are aligned in a northwest-southeast direction. Evidence suggests that there existed in the Mojave Desert during one or more of the pluvial Pleistocene ages a number of lakes now represented by playas or salines. Two or three such systems existed.

4.2 Soils

The surficial soils around the PBR's Base are very deep, well drained soils formed in alluvium derived from granitic material.

Typically, the surface layer, about nine inches thick, is a pale brown and light yellowish brown silty clayey fine organic sand. The upper part of the subsoil consists of a brown sandy silty somewhat organic clay of about three inches in thickness overlying about 20 inches of reddish brown sandy silty organic clay. The next 14 inches is a pink sandy silty organic clay while the lower part is a light brown silty clayey sand about 34 inches thick. The substratum consists of light yellowish brown sand to a depth of 99 inches.

VICTORVILLE BOMBING RANGES SITE SOILS
TABLE 4.1

DEPTH (IN)	SOIL DESCRIPTION	PERCENTAGE PASSING SIEVE NUMBER #4	#40	#200	LIQUID LIMIT	PLAS-TICITY INDEX
0-9	Silty, clayey fine sand with organics (SM)	85-100	45-65	15-35	----	NP
9-12	Clayey, silty organic sand (SM)	95-100	55-65	25-40	20-25	NP-5
12-32	Sandy, silty organic clay, Silty organic clay (SC,CL)	95-100	70-90	35-70	25-40	10-20
32-46	Silty, clayey sand w/organics (SM)	95-100	55-65	25-50	20-25	NP-5
46-99	Sand, coarse silty clayey sand (SM,SP-SM)	85-100	40-60	5-25	----	NP

SOURCE: SCS SOIL SURVEY OF SAN BERNARDINO COUNTY, CA

Permeability of this soil is moderately slow and the runoff is slow to medium. The hazard of water erosion is slight but there is a high possibility of wind erosion. The risk of corrosion to uncoated steel is high and the risk of corrosion to concrete is low. The vertical permeability of the site surficial soil is low, about 2-6 in./hr. Some of the major limitations for this type of soil are: moderate shrink-swell potential, low strength, and the hazard of sloughing (Tugel and Woodruff 1986).

4.3 Hydrology

4.3.1 Ground Water

The water-bearing alluvial deposits of the Mojave River are the major source of ground water in the area. Hard rock formations along the river divide the coarse river deposits into numerous subsurface basins. Water from the river is trapped in these basins and is the source of ground water. Nearly all recharge is provided by precipitation that falls in the San Bernardino and San Gabriel Mountains (Tugel and Woodruff 1986).

4.3.2 Surface Water

Runoff from PBR N-1, PBR #2, and PBR #8 flows into the Mojave River. Runoff from PBR #7 flows into the Lucerne Lake, and the Mojave River. The Mojave River is sometimes called the "upside-down river" because through most of its course water generally flows underground; water flows aboveground only after storms, yet miles downstream it surfaces and flows for a distance. Perennial flows occur near Victorville, in the vicinity of Camp Cady and in Afton Canyon. The perennial aboveground flows are caused by natural underground barriers, which force ground waters to the surface.

The Mojave River at Lower Narrows near Victorville has a drainage area equal to 513 square miles, with a base flow of 200 cfs. A maximum peak flow of 70,600 cfs corresponding to a stage of 16.7 feet occurred on March 2, 1938. A minimum flow equal to 53 cfs was recorded on March 4, 1950.

The Mojave River at Hesperia near Victorville has a drainage area of 209 square miles. A maximum peak flow of 21,300 cfs corresponding to a stage of 7.61 feet occurred on February 8, 1993. A minimum flow equal to 107 cfs for a stage of 1.4 feet was recorded on February 21, 1990.

4.4 Weather

Based on the climatological data for Barstow and Victorville, rainfall is scant in all months. Precipitation occurs mainly in the winter. Summers are practically rain free. Measurable rain falls on about one day in four from late October into early April, but in three years out of four, traces or less are reported for the entire months of June, July, and August. June is usually the month of minimum rainfall (0.04 inch) on the average. January is usually the month of maximum rainfall (1.01 inch) on the average. The total annual precipitation is about five inches at Victorville. Of this, 30 percent usually falls in April through September. Most of the rains fall during the winter and spring months. Summer rains are irregular and often occur as cloudbursts or thunderstorms which frequently cause considerable damage. Very small amounts of snow are recorded during the winter months. The average seasonal snowfall is about two inches at Victorville. The greatest snow depth at any one time during the period of record was 17 inches at Victorville. Days when there is snow on the ground are rare, and the number of such days varies from year to year.

The climate is normally desert type and mild during the winter months. Summers are long and very hot. Winters are quite warm despite an occasional series of days when the nightly temperature drops below freezing. In winter, the average temperature at Victorville is 45 degrees F. The average daily minimum temperature during the winter months is 30 degrees F. However a temperature equal to 17 degrees F, was recorded in 1949. In summer, the average temperature is 77 degrees F at Victorville.

The average daily maximum temperature is 97 degrees F. The highest recorded temperature in San Bernardino County was 116 degrees F on July 14, 1972 at Barstow.

The average relative humidity in midafternoon is about 20 percent. Humidity is higher at night, and the average at dawn is about 50 percent. Percentage of possible sunshine is 90 percent of the time in summer and 60 percent in winter. The mean annual air temperature for nearby Adelanto is 62 degrees F.

The prevailing wind is from the west. Average windspeed is highest, eight miles per hour, in summer. The highest recorded windspeed is 87.4 miles per hour. Strong dry winds come from varying directions throughout the year. A windspeed of more than 12 miles per hour is sufficient to lift and carry sand. A windspeed of more than 12 miles per hour occurs on an average of 22 percent of the year, at George Air Force Base in Victorville. Most of the erosive winds at George Air Force Base come generally from the south and west.

4.5 Ecology

The information provided for these sites was compiled from the U.S. Fish and Wildlife Service (USFWS) and the California Department of Fish and Game Natural Diversity Data Base (NDDB).

4.5.1 PBR N-1

The following Federally endangered, threatened, or candidate species occur in the vicinity of the Victorville PBR N-1 Site: desert tortoise (Gopherus agassizii), threatened; Mohave ground squirrel (Spermophilus mohavensis), candidate; Mohave tui chub (Gila bicolor mohavensis), endangered; Barstow woolly sunflower (Eriophyllum mohavense), candidate; and Mojave monkeyflower (Mimulus mohavensis), candidate.

The NDDB listed the following species of State concern that are known to occur in the Victorville PBR N-1 Site: Mohave tui chub, endangered; and Mohave ground squirrel, threatened.

4.5.2 PBR #2

The USFWS indicated that the Federally threatened desert tortoise (Gopherus agassizii) occur in the vicinity of the Victorville PBR #2 Site.

The NDDB concurs with the USFWS that the desert tortoise, listed as State threatened, is in the vicinity of the Victorville PBR #2 Site.

4.5.3 PBR #7

The USFWS indicated that the Federally threatened desert tortoise (Gopherus agassizii) occur in the vicinity of the Victorville PBR #7 Site.

The NDDB concurs with the USFWS that the desert tortoise, listed as State threatened, is in the vicinity of the Victorville PBR #7 Site.

4.5.4 PBR #8

The following Federally endangered, threatened, or candidate species occur in the vicinity of the Victorville PBR #8 Site: desert tortoise (Gopherus agassizii), threatened; Mohave ground squirrel (Spermophilus mohavensis), candidate; Cushenbury milk-vetch (Astragalus albens), proposed endangered; Parish's alkali grass (Puccinellia parishii), proposed endangered; Parish's phacelia (Phacelia parishii), candidate; and alkali mariposa lily (Calochortus striatus), candidate.

The NDDB listed the State threatened desert tortoise as the only species of State concern in the vicinity of the Victorville PBR #8 Site.

No additional information on the occurrence of rare or endangered species or natural communities is known at this time. This does not mean that other state or federally-listed species may not be present within the areas of interest. On site inspections by appropriate state and federal personnel may be necessary to verify the presence, absence or location of listed species, or natural communities if remedial action is recommended as part of the final ASR.

5.0 Real Estate

Acquisition of the precision bombing ranges began with a 2 September 1942 directive to acquire the necessary property.

PBR N-1 consisted of 644.75 acres acquired by transfer from the Department of Interior. The property was declared surplus on 28 January 1948 and relinquished to the Department of Interior on 27 June 1949. The land is currently owned by the Bureau of Land Management.

PBR #2 consisted of 440 acres fee and 200 acres transfer from the Department of Interior. Custody of the 440 fee acres was assumed by the War Assets Administration on 3 September 1948. The 200 transfer acres were transferred back to the Department of Interior. The entire area has since been subdivided and sold to private individuals, some of whom have constructed homes.

PBR #7 consisted of 440 acres fee and 200 acres transfer from the Department of Interior. The property was declared surplus and custody was assumed by the War Assets Administration in August 1947. BLM currently owns 180 acres and the remainder of the site has been sold to private individuals. The land is currently undeveloped.

PBR #8 consisted of 640 acres acquired by transfer from the Department of Interior. The property was declared surplus and custody was assumed by the Department of Interior on 30 January 1948. The entire area has since been subdivided and sold to private individuals, some of whom have constructed homes.

6.0 OEW/CWM Site Activities

6.1 General

Victorville PBR N-1, PBR #2, PBR #7, and PBR #8 were used by the Victorville Advanced Flying School at Victorville Army Air Field.

Military personnel from March Field, Riverside, California and Castle Field, Merced, California were to use PBR #2 and PBR #7 for experimental P-80 jet use (War Department 1946).

No buildings or structures were erected on PBR #7 (Classification 1948).

6.2 CWM Activities

We found no evidence of chemical munitions ever having been used at any of the Victorville precision bombing ranges.

6.3 OEW Activities

PBR #2 was scattered with fragments of practice "blue" bombs (Headquarters 1st Fighter Wing 1947). A dedudding certificate from October 25, 1947 specifies only 100 pound M38A2 practice bombs were dropped on the target (Corps of Engineers 1947).

Dedudding operations of PBR #7 (and ten others) occurred October 20, 1947 through January 24, 1948. A list of duds on all 11 ranges include 2,800 M38A2 practice bombs and 32 M26 aircraft parachute flare bombs (Civil Engineers, Los Angeles District 1948). Large bomb fragments are scattered about (Classification 1948). Only approximately ten acres were used for bombing (Farm Credit Administration n.d.).

Dedudding operations of PBR #8 (and six others) occurred July 7, 1947 through October 18, 1947. A list of duds found on all seven ranges include two 2,000 pound light case HE AN-M56 bombs, thirteen 100 pound HE bombs, one M26 aircraft parachute flare bomb, and 629 M38A2 practice bombs (War Department 1947).

6.4 References Cited

Civil Engineers, Los Angeles District

1948 Certificate of Clearance dated 22 March 1948. Record Group 121, Accession 9NSS-121-85-001, Box 47, Folder: Victorville Precision Bombing Range No. 7, National Archives - Pacific Sierra Region, San Bruno, CA.

Classification

1948 Complete Classification of Victorville Precision Bombing Range #7, dated 28 April 1948. Record Group 121, Accession 9NSS-121-85-001, Box 47, Folder: Victorville Precision Bombing Range No. 7, National Archives - Pacific Sierra Region, San Bruno, CA

Corps of Engineers

1947 A dedudding certificate from Captain T. L. Pfleuger dated 25 October 1947. Record Group 341, Accession 61A-1464, Box 7, Washington National Records Center, Suitland, MD.

Farm Credit Administration

n.d. Location, character, etc. of Victorville Bombing Range No. 7, Record Group 21, Accession 9NSS-121-85-001, Box 47, Folder: Tract No. 73, National Archives - Pacific Sierra Region, San Bruno, CA.

Headquarters 1st Fighter Wing

1947 Declaration of Excess from Lieutenant Colonel W. R. Mamerow dated 5 November 1947. Record Group 341, Entry 494, Box 46, Folder: Victorville, National Archives - Suitland Reference Branch.

War Department

1946 Correspondence of Withdrawal of Victorville Bombing Targets from Surplus from Colonel Charles H. Woolley dated 12 March 1946. Record Group 341, Accession 61A-1464, Box 7, Washington National Records Center, Suitland, MD

War Department

1947 Report on dedudding of 7 Victorville Bombing Ranges by Joseph P. Sainato dated 20 October 1947. Record Group 270, Real Property Disposal Case Files, Box 161, National Archives - Pacific Sierra Region, San Bruno, CA.

6.5 Records Reviewed

National Archives and Record Administration
Suitland Reference Branch
Suitland, MD

Record Group 77 (Office of the Chief of Engineers)
- No information was found on the following three entries:
- Entry 391 Construction Completion Reports, 1917-43
- Entry 393 Historical Record of Building, 1905-42
- Entry 51A0059 Aerial Gunnery and Bombing
- Entry 51A0277 District Files, 1945 Los Angeles District
  - Box 138 No pertinent information.
  - Box 139 No pertinent information.
  - Box 141 No pertinent information.
  - Box 142 No pertinent information.
- Entry 52A0259
  - Box 72 No pertinent information.
  - Box 79 No pertinent information.
- Entry 53A0325
  - Box 55 No pertinent information.
- Entry 61A0277 (General Correspondence with Districts)
  - Box 140 Los Angeles District.

Record Group 175 (Office of the Chemical Warfare Service)
- Entry 67A4900 Station File 1946 - 54
  - Box 37 No pertinent information.
  - Box 38 No pertinent information.
  - Box 46 Airfields: Victorville.
- Entry 4L Reports, studies, histories, and other records relating to Chemical Warfare Service, 1920-46
  - Box 15 No pertinent information.
  - Box 36 No pertinent information.
  - Box 45 No pertinent information.
  - Boxes 190 - 195 No pertinent information.
- Entry 2 Index Briefs
  - Box 63 No pertinent information.
  - Box 517 No pertinent information.

Record Group 341 (Office of the Headquarters of the U.S. Air Force)
Entry 494 Air Force Real Estate Facilities 1948-55
Box 45 Selfridge thru Spokane.
Box 46 Folder "Victorville".
Box 54 No pertinent information.
Box 108 Selfridge thru Smyrna.
Box 109 No pertinent information.
Box 176 Shaw AFB thru Topeka AFB.
Box 261 Scott AFB.
Box 361 Suffolk AFB.
Box 382 Bombing and gunnery.
Box 474 Sheppard thru Stewart.
Box 595 Sioux City thru Stewart.
Box 735 Smoky Hill thru Tinker.

Washington National Records Center
Suitland, MD

Record Group 291 (Office of the General Services Administration)
Accession 66A-2712
Box 31 (Victorville: George AFB).

Record Group 341 (Office of the Headquarters of the U.S. Air Force)
Accession 61A1464 Real Estate Files
Box 7 - 8 Victorville BGR's, March Field Air to Ground Gunnery Range.
Box 10 No pertinent information.
Box 31 No pertinent information.

National Personnel Records Center
9700 Page Boulevard
St. Louis, Missouri 63132

Record Group 342 (Office of the U.S. Air Force Commands)
Accession 44A6005 Installation Development
Box 1 1947 Victorville AAF & Satellite Facilities Map.
Victorville Bombing Targets and dedudding correspondence.
Accession 54A 4117
Box 1 Decimal 684 Bombing & Gunnery Ranges.
Accession 54B 4117
Box 1 Pottawatomie and Osage.
Accession 57H-3001
Boxes 1, 2 and 21 (of 23) Decimal 684 Bombing & Gunnery Ranges.

Federal Records Center - San Francisco
1000 Commodore Drive
San Bruno, California

Record Group 95 (Records of the Forest Service)
Accession 71-0372 Victorville - Cadiz
Location 00409513. Special Use 1970.

Record Group 121 (Records of the Public Buildings Service)
Accession 63-0287 Victorville - George AFB.
Box 5 No pertinent information.

National Archives and Records Administration
Pacific Sierra Region
San Bruno, California

Record Group 121 (Records of the Public Buildings Service)
Accession 9NSS-85-001
Box 33 Victorville PBR #6.
Box 45 Dunlap Aux. Field.
Box 46 Victorville PBR #3.
Box 47 Victorville Range map.
Box 49 Victorville PBR #2.
Box 52 Victorville.
Accession 9NSS-87-001
Box 1 Victorville AAF and Mirage Annex Air Field Station #3.
Accession 9NSS-85-002
Box 4 Victorville PBR #4.
Accession 9NSS-85-004
Box 72 Victorville AAF Aux. #3.

Record Group 175 (Records of the Chemical Warfare Service)
Box 1 General Records SFCPD 1940 - 50.

Federal Records Center - Los Angeles
Laguna Niguel, California

Record Group 77 (Records of the Chief of Engineers)
- Accession 70A1364
  - Box 1 Desert Center AAF correspondence & map.
  - Box 2 No pertinent information.
- Accession 70A1819
  - Boxes 1-5 Desert Strike, George AFB and March AFB.
- Accession 82-0045
  - Box 15 Victorville.

National Archives
Pacific Southwest Region
Laguna Niguel, California

Record Group 77 (Records of the Chief of Engineers)
- Accession: Los Angeles District, Military Construction Projects 1950-60.
  - Boxes 54-59 George AFB Construction Projects. Job estimate costs.
- Accession: Military Construction Project Logbooks. 1948-70 George AFB.
  - Boxes 44-48 and 60.
- Maps: Various March AFB military construction and landing field maps.

Record Group 181 (Naval Districts and Shore Establishments)
- 11th District, General Correspondence 1925-52.
  - Box 34 Camp Pendleton and San Diego Marine Corps Base.
  - Box 38 Navy Bombing map of Southwest U.S.
  - Box 39 C-AMA.

Record Group 270 (Records of the War Assets Administration)
- Real Property Disposal Case Files
  - Box 41 Desert Training Center.
  - Box 42 Desert Center AAF.
  - Box 158 Twenty-Nine Palms Air Academy.
  - Box 161 Victorville AAF.
  - Box 162 Victorville PBR# 2, 3, 4, 6, 7 and 19.

U.S. Air Force Historical Research Agency
Maxwell Air Force Base
Montgomery, AL

145.91-569 Bombing and Gunnery Ranges 11/36 - 1/41.
450.01-4 Fighter Training in the 4th Air Force.
450.01-17A - 450.01-18B Fourth Air Force Tow Target Units History.
450.204A - 450.273 Fourth Air Force Station List.
450.273 - 450.607 Fourth Air Force Station List.
450.765 - 452.01-2 Fourth Air Force Ordnance Activity Reports.

Accession A51-59 Corps of Engineers Records
- Box 450 Victorville AAF.
- Box 451 Victorville AAF (686).

National Archives
Downtown Branch
Washington, D.C.

Record Group 18 (Records of the Army Air Forces)
- Central Decimal File 1939-42
  - Box 956 Proposals for Cadiz and Victorville.
  - Box 957 Correspondence for small airfields. Victorville proposals.
  - Box 958 Colorado - Connecticut.
  - Box 1833 Victorville Army Flying School.
  - Box 1834 Technical inspection.
- Entry 1
  - Boxes 839 - 840 Use of bases.
- Decimal Files 1939-42
  - Box 1521 March Civilian Reports.
  - Box 1835 Victorville Bombing Ranges.
  - Box 3192 Victorville - March.

Record Group 153 (Records of the Judge Advocate General)
Reservation Files 1800 - 1950
Box 73 Camp Anza.
Box 74 Items on Blythe.
Box 75 Calif Point to Concord.
Box 76 Items on Desert Center.
Box 77 California. Eureka to Half Moon Bay.
Box 78 Half Moon Bay to Hammond.
Box 79 California. Hawthorne to Kern.
Boxes 80 - 83 California.
Box 84 California. Lomita to L.A. POE.
Boxes 85-90 California.

Record Group 160 (Records of the Army Services Forces)
Entry 27 Correspondence Files 1942-46.
Boxes 48-50 Camp Haan, CAMA and 9th Service Command.
Entry 139 Surplus Industrial Facilities.
Boxes 842, 843 and 845 Real Estate and Facilities.

Record Group 337 (Records of the Army Ground Forces)
Army Field Forces Headquarters 1942-52.
Box 16 Decimal 353.8 to 354.2. Third Army Maneuvers 1943.
Box 17 Decimal 354.2. Camp Campbell.
Box 18 Decimal 354.2. Carolina.

Entry 55 General Correspondence 1942-48.
Box 1123 Firing Ranges. Decimal 684.
Entry 55A
Box 1121 Target Ranges.
Box 1151 Antiaircraft.
Box 1169 Third Army Target and Bombing Ranges.
Box 1268 California - Arizona Maneuver Area.
Box 1269 C-AMA.
Box 1270 California - Arizona Maneuver Area.
Box 1271 C-AMA.
Boxes 1275 - 77 C-AMA.
Entry 56 Decimal File 1949-50.
Box 158 Notes about various ranges under decimal 684.

Record Group 407 (Records of the Adjutant Generals Office)
Project Decimal File 1940-45.
Box 4377 Construction projects at March AFB.
Box 4387 Victorville - Target #8.

U.S. Army Center of Military History
1099 14th Street, N.W.
Washington, D.C.

File Drawer: Camps, Forts and Posts.
Folder: Exercises, Training.
Exercise Clear Water.
Exercise Desert Strike.
Exercise Bristle Cone.

Mojave Desert Heritage and Cultural Association
Goffs Schoolhouse
37198 Lanfair Road
Essex, California 92332-0007

Folder: Desert Training Center. Reports and maps.

6.6 Summary of Interviews

6.6.1 Lt. Hankerson, San Bernardino County Sheriff's Dept, Barstow Station

We visited with Lt. Hankerson during our site visit to Victorville PBR N-1, PBR #2, PBR #7, and PBR #8. Lt. Hankerson has been with the sheriff's dept. for 25 years and is unaware of any ordnance incidents in the vicinity of the 25 bombing targets used by the Victorville AAF.

6.6.2 Sgt. Bob Hall, San Bernardino County Bomb and Arson Squad

Prior to our site visits to the Victorville PBR's, we contacted the various sheriff's stations in the area. Each station advised us to contact the San Bernardino County Bomb and Arson Squad. Our initial contact with the San Bernardino County Bomb and Arson Squad was with Lt. Larry Swope. Lt. Swope was to call back with more information.

The return call was made by Sgt. Bob Hall. We described the areas of concern and Sgt. Hall said they answer a lot of calls about ordnance taken from active installations in the area. He said they may have some information on ordnance incidents and he would let me know. Sgt. Hall called back to say that he had no pertinant information regarding any ordnance incidents.

6.7 Site Inspection

6.7.1 General

These site visits were performed during the period 6 February 1995 through 10 February 1995 and in conjunction with site visits to the Cadiz Lake Sonic Targets #1, #2, and #4.

Participants:

Corps of Engineers

Ted Moore	Project Manager
Kirk James	UXO Specialist and Safety Officer
Jim Luebbert	Historian

Others

John Key	BLM Hazmat Specialist

6.7.2 Detailed Site Inspection

Monday, 6 February 1995

Morning Travel from St. Louis to Victorville, California

1300 The team travelled to PBR N-1 which is located near Barstow, California. There is a high voltage transmission line that traverses the bombing target from northwest to southeast near the center of the target. We parked at the southern border of the target and walked along the transmission line right-of-way toward the center of the target. We began finding practice bomb debris very soon after leaving the vehicle and continued to find practice bomb debris all the way to the target center. The largest concentration of bomb debris is within approximately .15 miles of the target center. The target center is marked with concentric rings constructed of asphalt. The rings have deteriorated but are still clearly visible. We found no evidence of the use of high explosive ordnance or unexploded portions of practice bombs on the site. The pattern of bomb debris found suggests a southeast to northwest approach to the target.

Tuesday, 7 February 1995

0700 The team travelled to PBR #2 which is located just east of Victorville, California. We were able to drive directly to the center of the target. The target center is marked with concentric oiled rings. The rings have deteriorated but are still clearly visible. The largest concentration of bomb debris is within approximately .15 miles of the target center. We found no evidence of the use of high explosive ordnance or

unexploded portions of practice bombs on the site. The pattern of bomb debris found suggests a southwest to northeast approach to the target.

0830 The team travelled to PBR #7 which is located east of Victorville, California. We were able to drive directly to the center of the target. The target center is marked with concentric oiled rings. The rings have deteriorated but are still clearly visible. The largest concentration of bomb debris is within approximately .15 miles of the target center. We found no evidence of the use of high explosive ordnance or unexploded portions of practice bombs on the site. The pattern of bomb debris found suggests a south to north approach to the target.

1000 The team travelled to PBR #8 which is located east of Victorville, California. We were able to drive directly to the center of the target. The target center is marked with concentric oiled rings. The rings have deteriorated but are still clearly visible. The largest concentration of bomb debris is within approximately .15 miles of the target center. We found no evidence of the use of high explosive ordnance or unexploded portions of practice bombs on the site. The pattern of bomb debris found suggests a northeast to southwest approach to the target.

1300 Visits to the San Bernardino County Sheriff's station in Barstow and the BLM office in Barstow.

Wednesday, 8 February 1995 and Thursday, 9 February 1995

Inspection of Cadiz Lake Sonic Targets.

Friday, 10 February 1995

Return to St. Louis.

6.8 Interpretation of Aerial Photography

6.8.1 PBR N-1

Photographic and land-use analysis was performed using the following photographic sources:

Photography Date	Approximate Scale	Source	Frame Identifier(s)
06 May 1952	1"=3,100'	EROS	6 thru 9
15 Dec 1952	1"=1,667'	ASCS	108 thru 112
09 Jan 1953	1"=1,667'	ASCS	60 thru 64
26 Jul 1959	1"=1,667'	ASCS	63 thru 66
25 Apr 1970	1"=2,000'	EROS	234 thru 236

Photography was referenced using the 1971 edition USGS 7.5' topographic quadrangle of Barstow, California.

Photography from 1952 and 1953 shows the precision bombing range and several rectangular wall enclosed features and a circular shaped feature. It does not appear as if there was any bombing going on in the area.

The 1959 photography does not reveal any evidence of bombing that has gone on in the area.

Photos from 1970 do not reveal any evidence of bombing in the area.

6.8.2 PBR #2

Photographic analysis and land-use interpretation were performed using the following photographic sources:

Photography Date	Approximate Scale	Source	Frame Identifier(s)
10 Jun 1952	1"=3,100'	EROS	89 thru 91
21 May 1993	1"=3,000'	CURTIS	578 thru 579

The following USGS topographic quadrangle was used in reference to the photography:

Apple Valley North, CA 1970 edition

No photography before 1952 was available for interpretation. The 1952 photography reveals the bombing target. Several small possible craters are seen in and around the bombing target. A few dirt roads lead to the target area. There are several roads around the target area, along with some buildings.

The 1993 photos reveal the bomb target but the area has now been built up around the target area. The possible craters are not evident in or around the target area.

6.8.3 PBR #7

Photographic analysis and land-use interpretation were performed using the following photographic sources:

Photography Date	**Approximate Scale**	**Source**	**Frame Identifier(s)**
14 Aug 1942	1"=3,000'	NATIONAL ARCHIVES	4 thru 8
28 Nov 1952	1"=1,667'	ASCS	38 thru 42 165 thru 170
22 Jun 1959	1"=1,667	ASCS	21 thru 26
07 Nov 1959	1"=1,667'	ASCS	2 thru 6
27 May 1968	1"=1,667'	ASCS	7 thru 12 13 thru 17 31 thru 36
29 Apr 1975	1"=2,500'	EROS	194 thru 197

Photography was referenced using the following USGS 7.5' topographic quadrangles:

Grand View Mine, CA 1982
White Horse Mtn., CA 1982

Photography prior to 1942 was unavailable for photo interpretation. The 1942 photography reveals the bombing target. There appears to be several areas of disturbance in the area. These disturbances appear to be possible bomb craters.

Photography from 1952 reveals that the bombing range was in use and that the target was evident in the photos. There are several loose surface roads that lead to the site. There are several buildings in the site area and also a small walled in area. Evidence of bombing is seen during the photographic analysis.

The early photography from 1959 reveals the target range, but the photography is too poor to reveal any evidence of OEW waste. The later photography from 1959 also reveals the bombing range and the buildings in the area, but the small walled in area appears to have disappeared.

The 1968 photography reveals the same information as stated in the previous paragraph.

Photography from 1975 does not reveal any evidence of bombing in the area.

6.8.4 PBR #8

Photographic analysis and land-use interpretation were performed using the following photographic sources:

Photography Date	**Approximate Scale**	**Source**	**Frame Identifier(s)**
12 Oct 1945	1"=2,000'	EROS	54 thru 57
28 Nov 1952	1"=1,667'	ASCS	30 thru 33 175 thru 178
07 Nov 1959	1"=1,667'	ASCS	12 thru 14 31 thru 34
08 Jul 1969	1'=2,000'	EROS	6 thru 9
21 May 1993	1"=3,000'	CURTIS	650 thru 652

Aerial photography was referenced using the following USGS 7.5' topographic quads:

Cougar Buttes, CA 1984
Lucerne Valley, CA 1971

No photography prior to 1945 was available for interpretation. The 1945 photos show the bombing range and the actual bombing target, but no bombing appears to have gone on in the area at this time.

Photos from 1952 do not indicate any evidence of bombing in the site area. The bombing target is still seen.

Photos from 1959 indicate no change from the 1952 photos, except that there appears to be a lot of development in the area. These include new roads and houses within several hundred feet of and including the bombing target.

The 1969 photography indicates development in the area includes new buildings and roads. The bombing target is still evident in the area but no craters are detected.

Aerial photography from 1993 indicates more development in the area, but as stated in the previous paragraph nothing has changed.

6.9 Map Analysis

6.9.1 PBR N-1

Map analysis was performed using the 1971 Barstow, California USGS 7.5' topographic quadrangle.

Topographic and planimetric features are shown on this quadrangle. The land lies relatively flat. Most drainage in the area is intermittent. Vegetation in the area does not exist. In the southeast corner of the quad there is much activity in the area. There are many hard and loose surface roads, buildings, pipelines, and cultural features. The site itself only contains a powerline.

6.9.2 PBR #2

Map analysis was performed using the following USGS quadrangle:

Apple Valley North, CA 1970 edition

This quad contains both planimetric and topographic features. Loose and hard surface roads are prevalent in the area. The site area is surrounded by buildings and roads. The site area topographically lies relatively flat. There are several hilly areas to the east and west of the site. Drainage and vegetational features are relatively light.

No other areas of ordnance or explosive waste were detected during the photographic and map analysis.

6.9.3 PBR #7

Map analysis was performed using the following USGS topographic quadrangles:

Grand View Mine, CA 1982
White Horse Mtn., CA 1982

Both quadrangles indicate planimetric and topographic features. There are many loose surface roads in the area, along with pipelines and transmission lines.

There are many intermittent drains in the area. The land lies flat in some areas and very rugged in others. The site itself is very flat. Lucerne Lake lies to the southwest of the site. No vegetation was is present in the area.

No other areas of OEW waste was detected during the photographic or map analysis.

6.9.4 PBR #8

Map analysis was performed using the following USGS 7.5' topographic quadrangles:

Cougar Buttes, CA 1994
Lucerne Valley, CA 1971

Planimetric and topographic features for the site area are few. There are several loose surface roads and several buildings in the area. The topography of the area is very flat and sparse in features (i.e. drainage, relief, and vegetation). The remainder of these two quads appear relatively the same. Some mountainous areas and some flat areas.

7.0 Evaluation of Ordnance Contamination

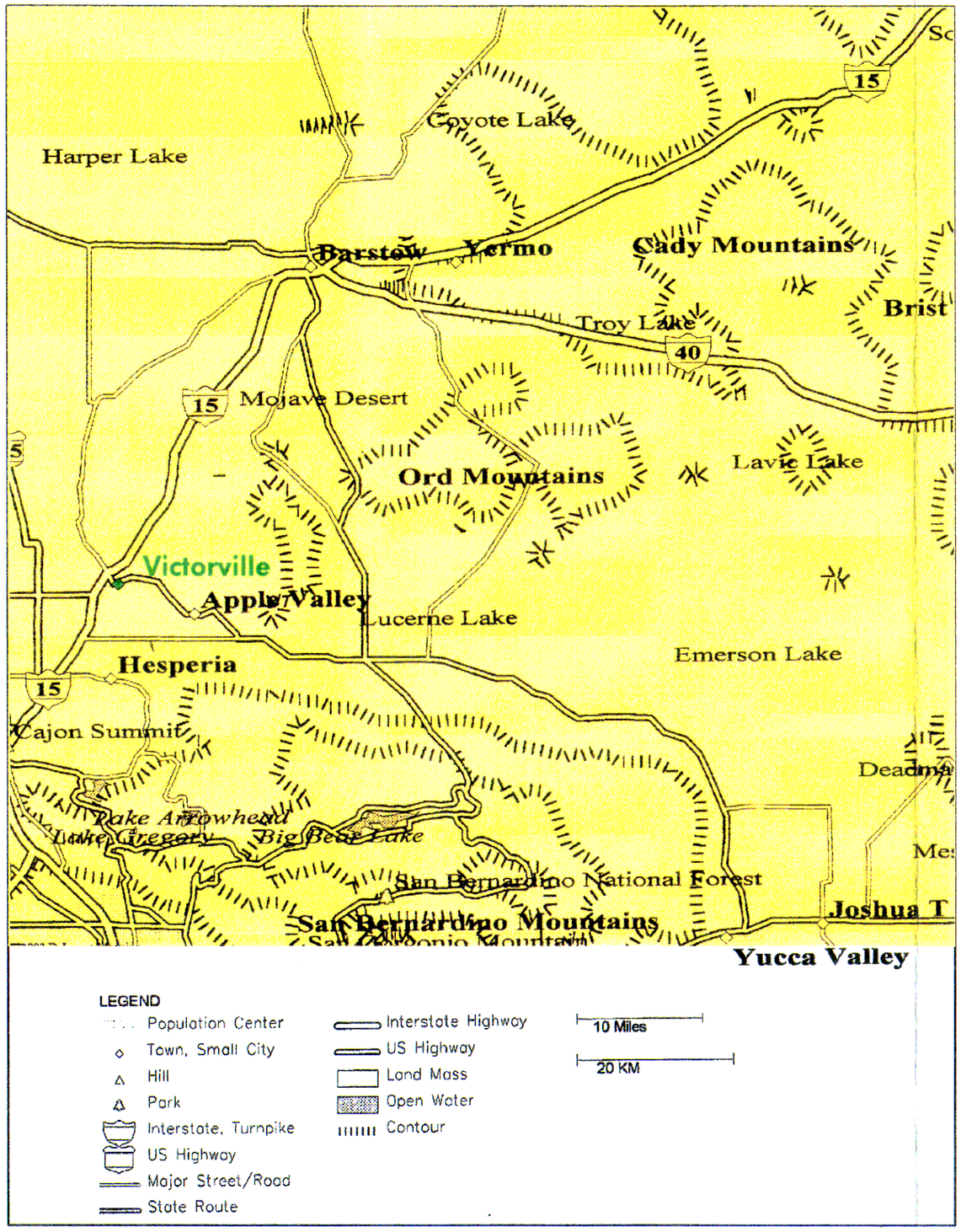
We were able to walk (and drive) to the marked target at each of the bombing targets. The oiled rings marking the target are still visible but are badly deteriorated. At each bombing range, we attempted to determine the type of bombs used, the possibility for unexploded ordnance to remain on the site, and the extent of bomb debris. At each site we inspected the immediate area of the oiled rings and then walked outward until we found no more bomb debris. We then began walking a circle that kept us just outside the bomb debris. At all four bombing targets there was a small area that extended outside the debris circle. We believe this marks the approach to the target center. The debris circle at each bombing range was consistently about 0.3 mile diameter.

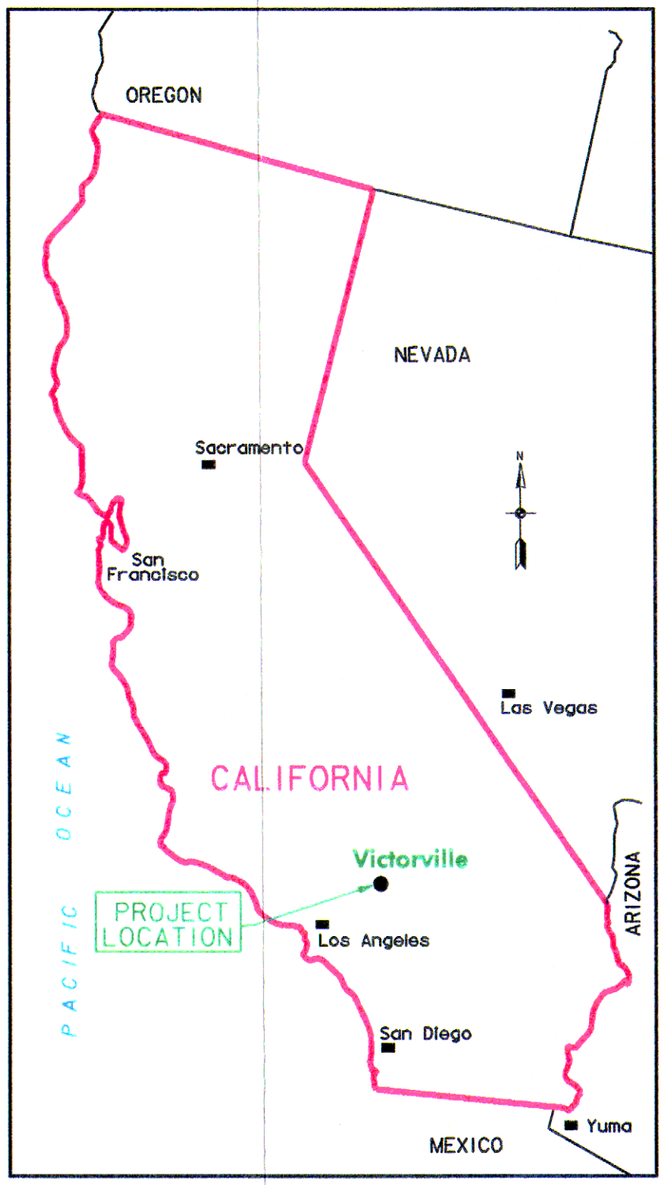
PBR #2 and PBR #8 have residential development and there are roads that intersect in the center of the concentric rings. PBR N-1 and PBR #7 are in more remote areas. There is no development near PBR N-1 aside from the high voltage transmission line that crosses northwest to southeast through the center of the property. There is residential development north and south of PBR #7.

We found only evidence of sand-filled practice bombs (see photographs). We found no evidence of HE bombs (i.e. fragments) or of unexploded spotting charges. The bomb debris ranged in size from spent fuzes to nearly intact bomb casings.

There are roads running to the center of each PBR. There is no restriction to access to any of the PBR's. PBR #2 and PBR #8 have homes located near the target center and scattered over the entire property.

MAPS/DRAWINGS





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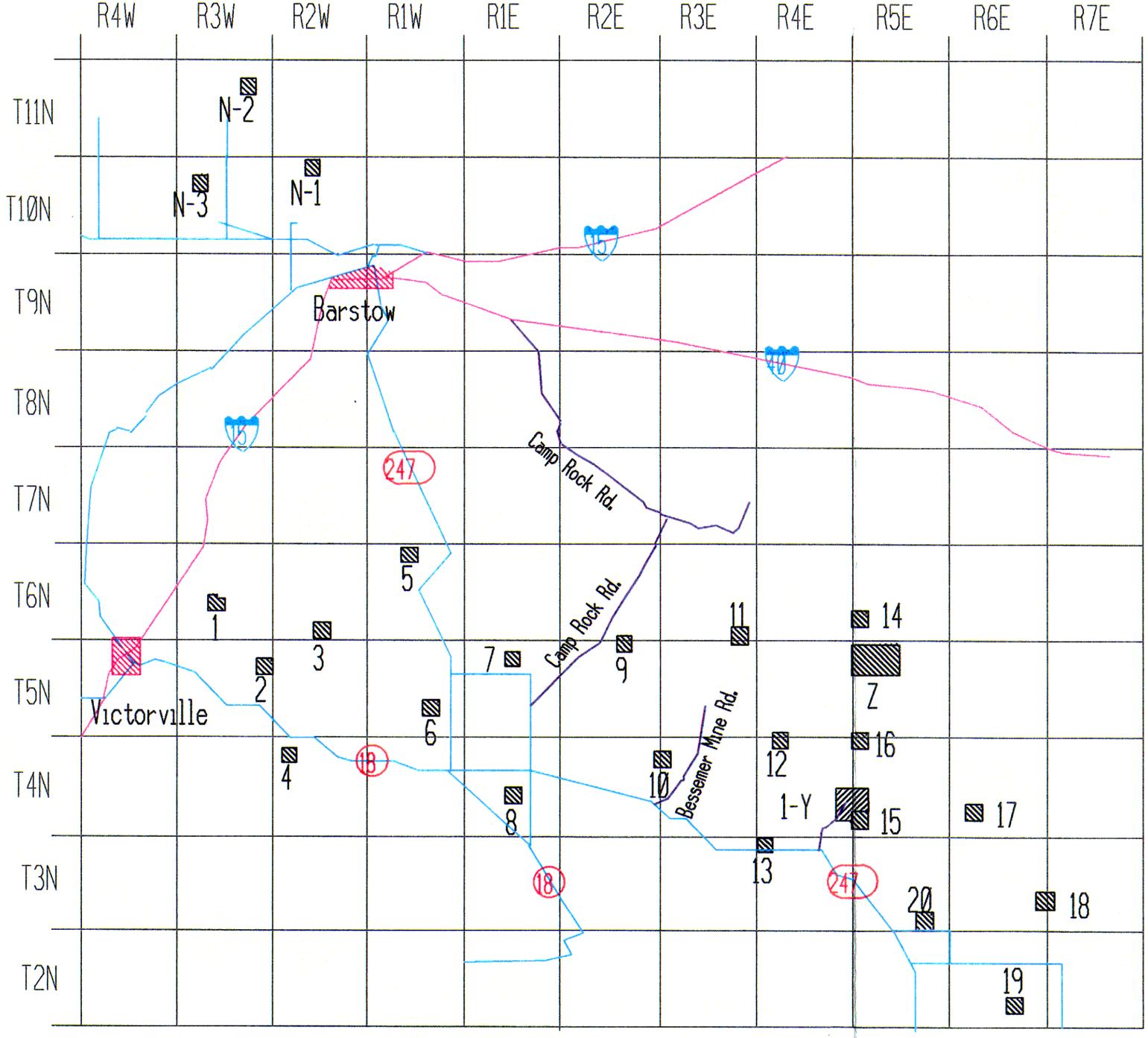
NOT TO SCALE

MAP 1

VICTORVILLE PRECISION BOMBING RANGES VICTORVILLE, CALIFORNIA SAN BERNARDINO COUNTY VICINITY MAP

PROJ. DATE: MAY 1995	DATE OF MAP: 1993
18-MAY-1995 13:17	/N/OEW95AB/M76/MAP/VCRVLVIC.DGN & VIC.EXT



NOT TO SCALE

MAP 2

VICTORVILLE PRECISION BOMBING RANGES VICTORVILLE, CALIFORNIA SAN BERNARDINO COUNTY SITE LOCATION MAP

PROJ. DATE: MAY 1995	DATE OF MAP: 1995
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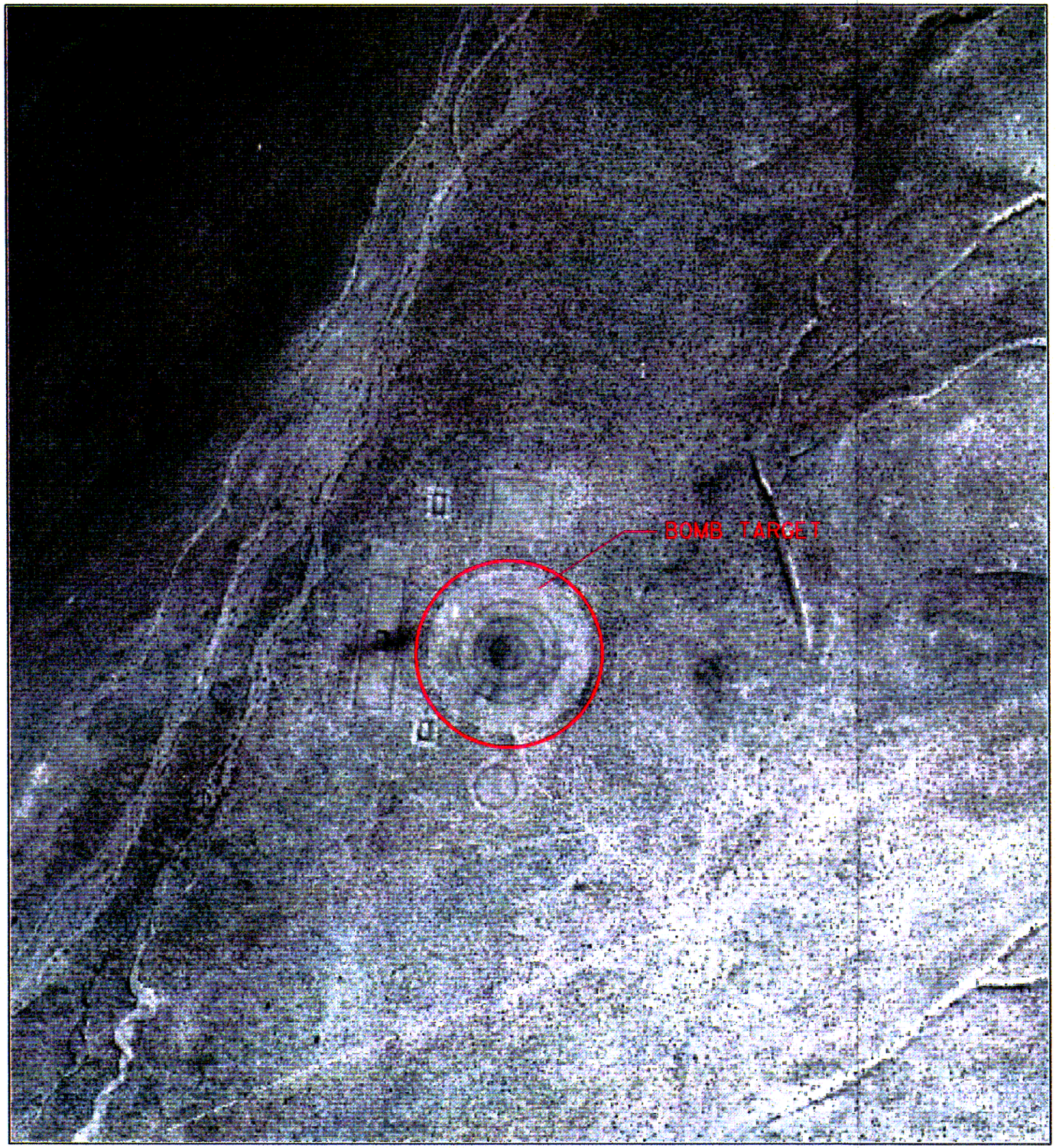

NOT TO SCALE

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MAP 3

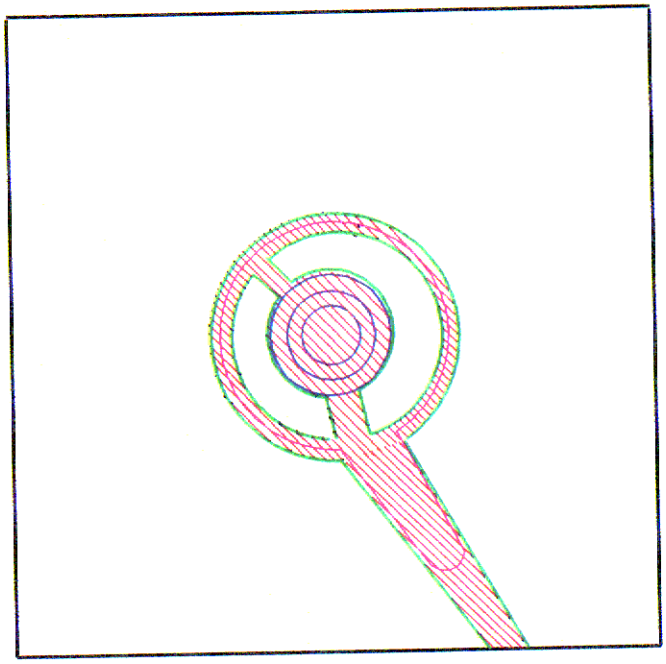
VICTORVILLE PBR N-1
VICTORVILLE, CALIFORNIA
SAN BERNARDINO COUNTY
DERP-FUDS# J09CA067201
SITE PHOTO 1952

PROJ. DATE: MAY 1995	DATE OF PHOTO: 1952
18-MAY-1995 13:25	/N/OEW95AB/M79/PHOTO/VIC52ANI.DGN & VIC52ANI.EXT

Oiled rings

Area inspected

Bomb debris area



N

0 1

Scale in miles

MAP 4

VICTORVILLE PBR N-1
VICTORVILLE, CALIFORNIA
SAN BERNARDINO COUNTY
DERP-FUDS# J09CA067201
SITE INSPECTION

PROJECT DATE: MAY 1995	DATE OF MAP: 1995
1-JUN-1995 14:43	N/OEW95AB/MT9/MAP/VVN_1.DGN

NOT TO SCALE

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MAP 5

VICTORVILLE PBR #2
VICTORVILLE, CALIFORNIA
SAN BERNARDINO COUNTY
DERP-FUDS# J09CA068601
SITE PHOTO 1952

PROJ. DATE: MAY 1995	DATE OF PHOTO: 1952
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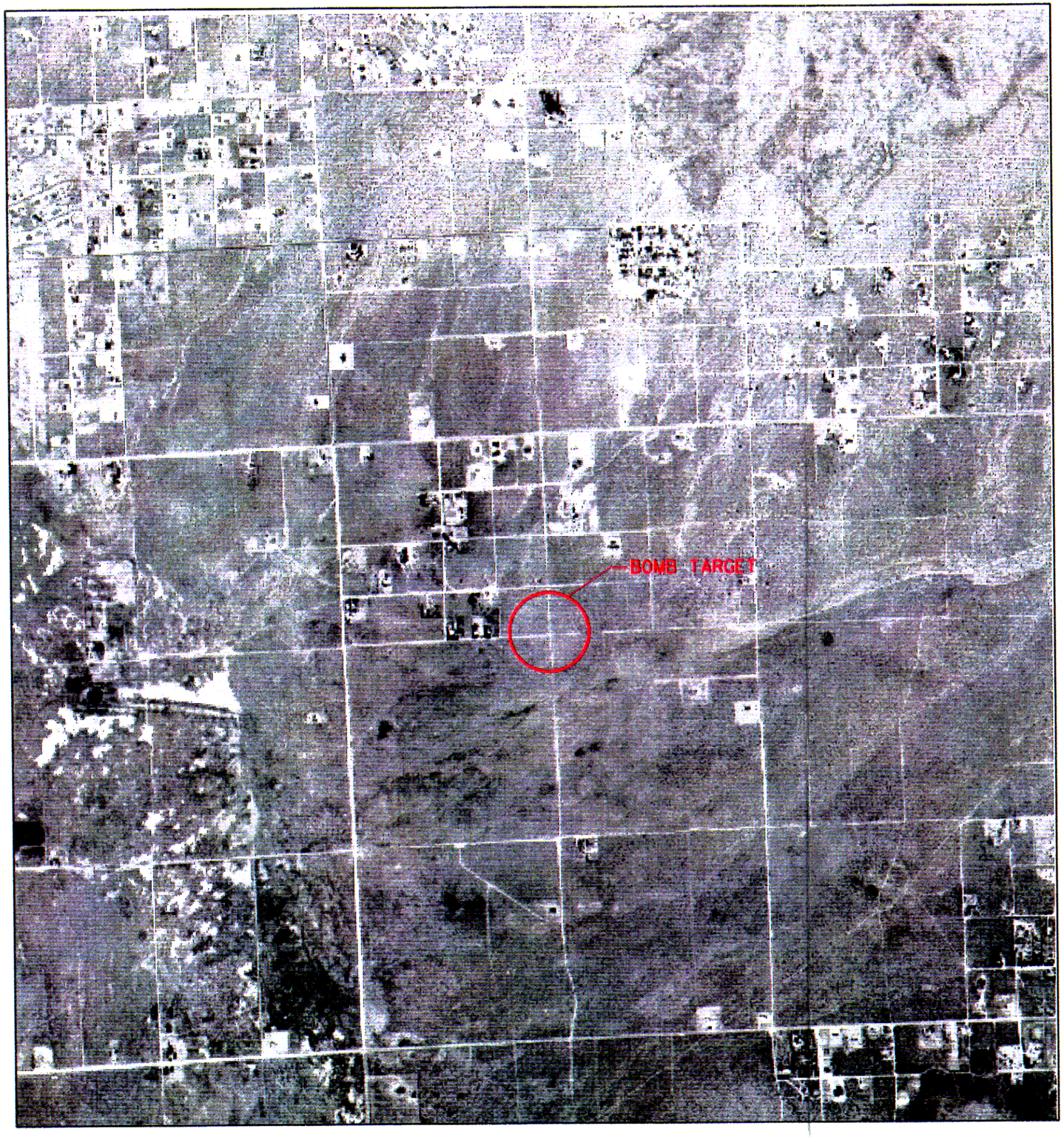

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NOT TO SCALE

MAP 6

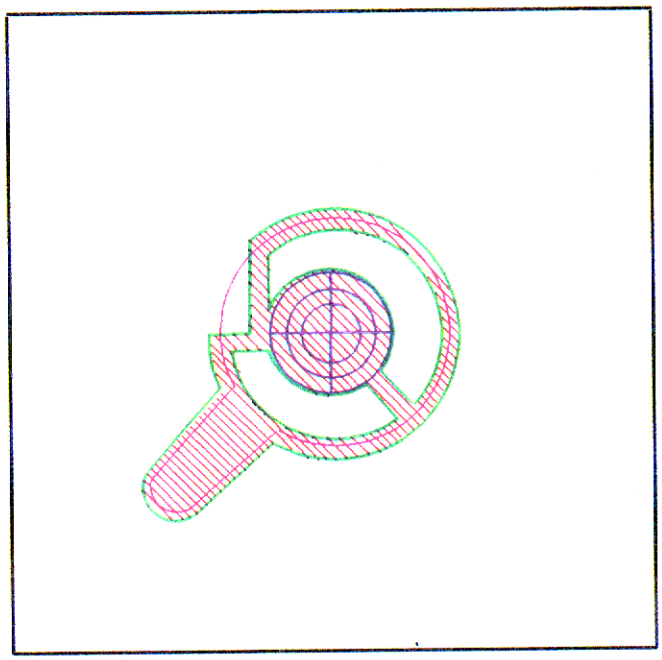
VICTORVILLE PBR #2
VICTORVILLE, CALIFORNIA
SAN BERNARDINO COUNTY
DERP-FUDS# J09CA068601
SITE PHOTO 1993

PROJ. DATE: MAY 1995	DATE OF PHOTO: 1993
18-MAY-1995 14:45	/N/OEW95AB/M76/MAP/VIC93A2.DGN & VIC93A2.EXT

Oiled rings

Area inspected

Bomb debris area



N

0 1

Scale in miles

MAP 7

VICTORVILLE PBR #2
VICTORVILLE, CALIFORNIA
SAN BERNARDINO COUNTY
DERP-FUDS* J09CA068601
SITE INSPECTION

PROJECT DATE: MAY 1995	DATE OF MAP: 1995
1-JUN-1995 14:35	N/OEW95AB/M76/MAP/VV2.DGN

NOT TO SCALE

N

MAP 8

VICTORVILLE PBR #7
VICTORVILLE, CALIFORNIA
SAN BERNARDINO COUNTY
DERP-FUDS# J09CA069201
SITE PHOTO 1952

PROJ. DATE: MAY 1995	DATE OF PHOTO: 1952
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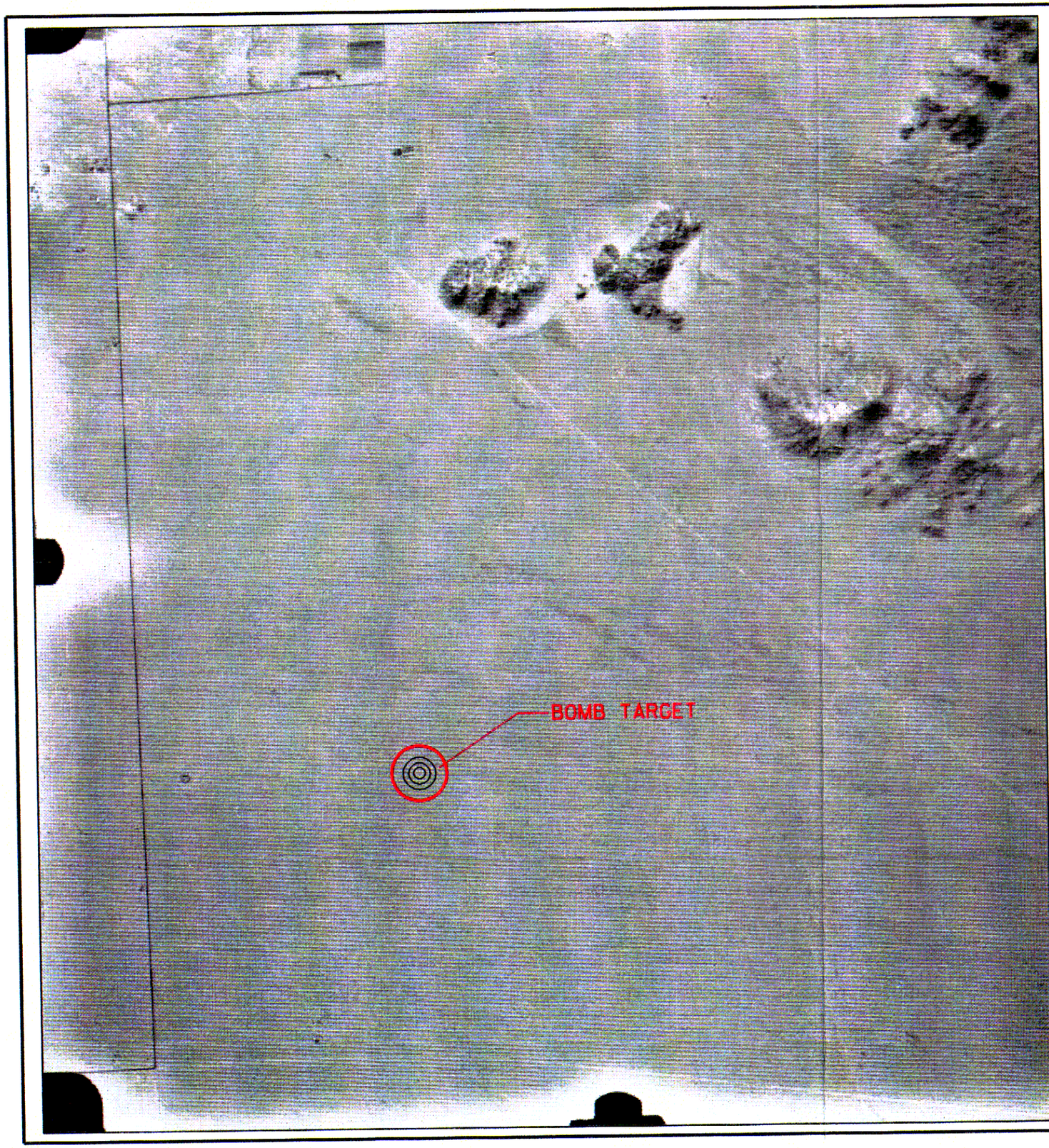

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MAP 9

VICTORVILLE PBR #7
VICTORVILLE, CALIFORNIA
SAN BERNARDINO COUNTY
DERP-FUDS# J09CA069201
SITE PHOTO 1975

PROJ. DATE: MAY 1995	DATE OF PHOTO: 1975
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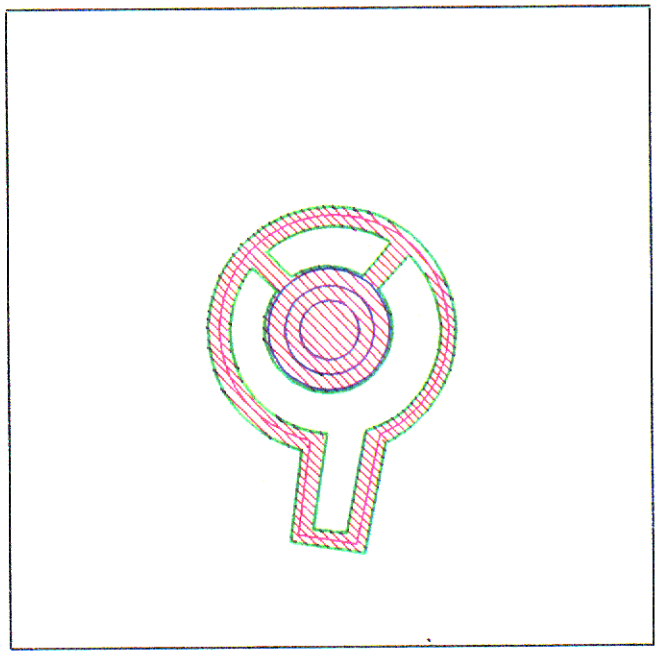
Oiled rings

Area inspected

Bomb debris area



N

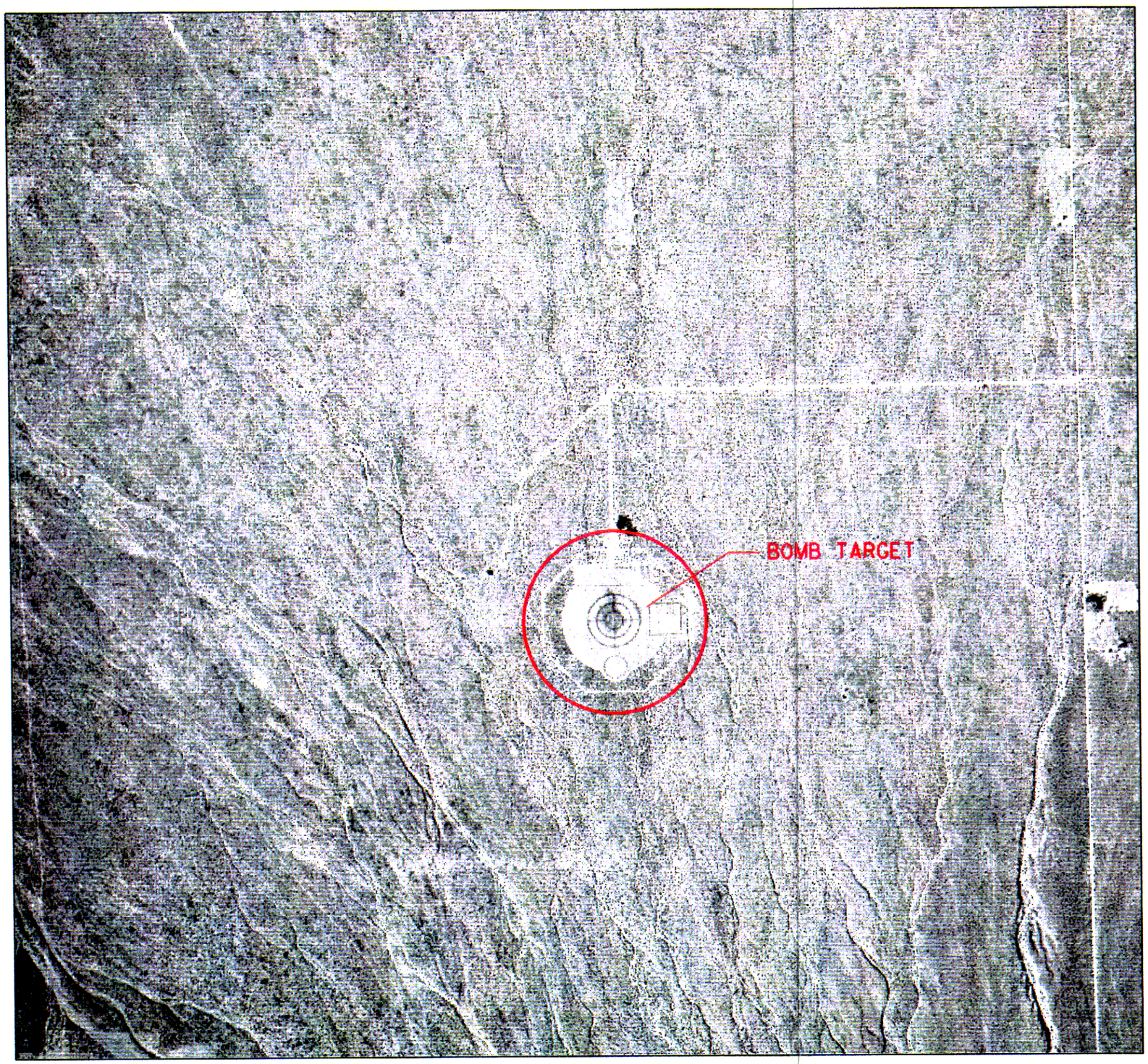
0 1

Scale in miles

MAP 10

VICTORVILLE PBR #7
VICTORVILLE, CALIFORNIA
SAN BERNARDINO COUNTY
DERP-FUDS# J09CA069201
SITE INSPECTION

PROJECT DATE: MAY 1995	DATE OF MAP: 1995
1-JUN-1995 14:37	N/OEW95AB/M77/MAP/VV7.DGN



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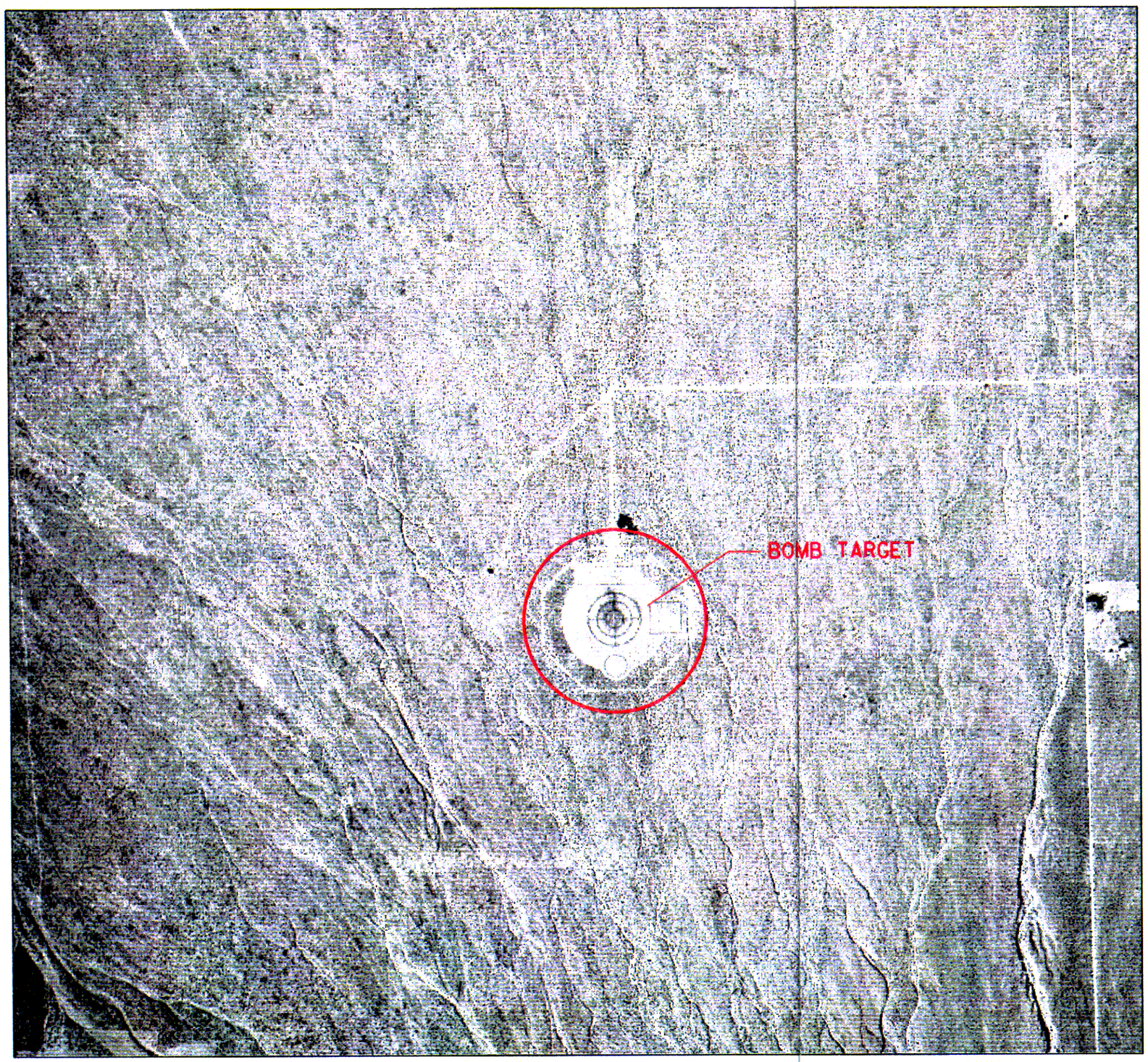
MAP II

VICTORVILLE PBR #8
VICTORVILLE, CALIFORNIA
SAN BERNARDINO COUNTY
DERP-FUDS# J09CA069301
SITE PHOTO 1945

PROJ. DATE: MAY 1995	DATE OF PHOTO: 1945
18-MAY-1995 15:42	/N/OEW95AB/M78/PHOTO/VIC45A8.DGN & VIC45A8.EXT



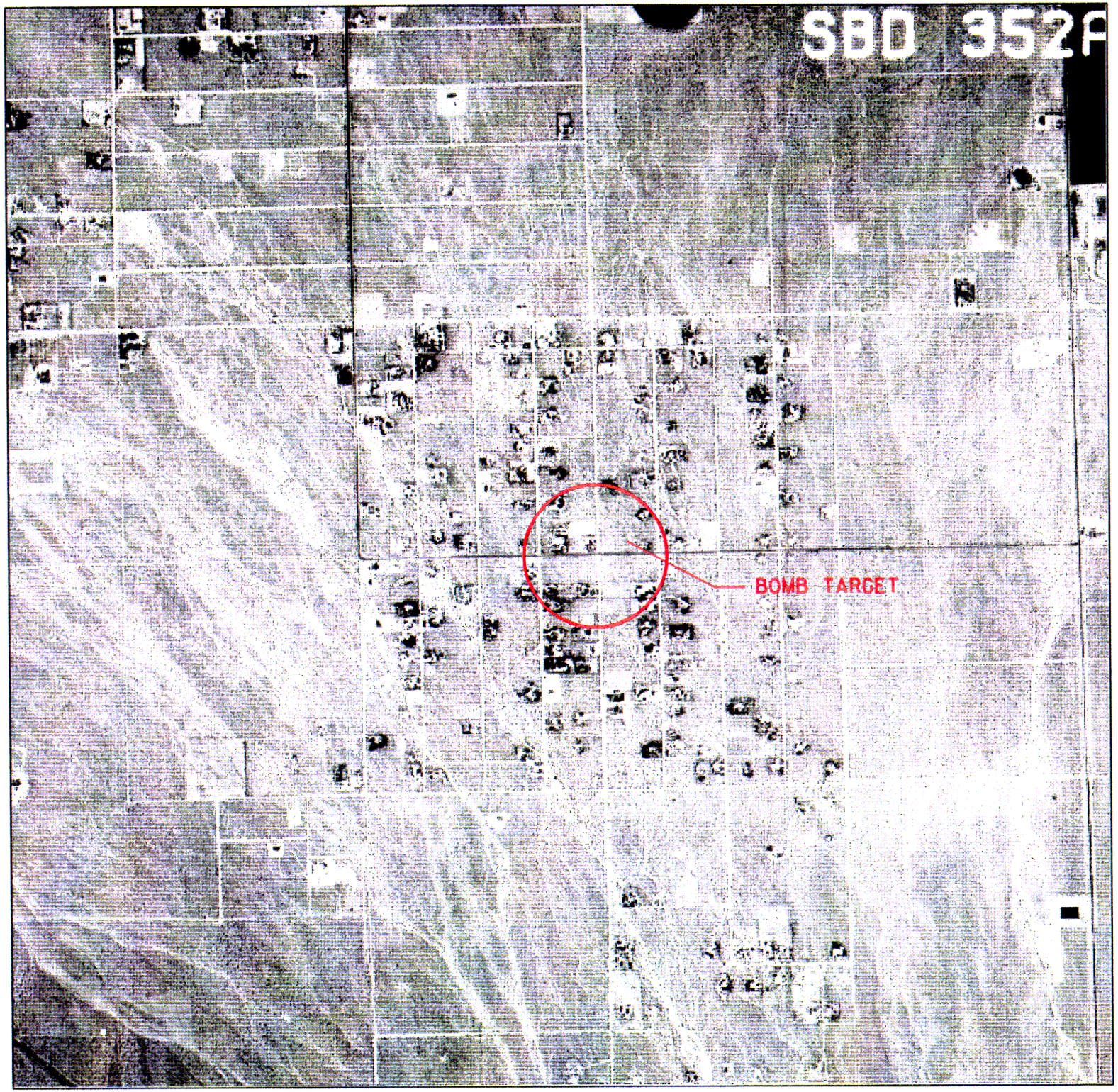
NOT TO SCALE

N

MAP II

VICTORVILLE PBR #8
VICTORVILLE, CALIFORNIA
SAN BERNARDINO COUNTY
DERP-FUDS* J09CA069301
SITE PHOTO 1945

PROJ. DATE: MAY 1995	DATE OF PHOTO: 1945
18-MAY-1995 15:42	/N/OEW95AB/M78/PHOTO/VIC45A8.DGN & VIC45A8.EXT



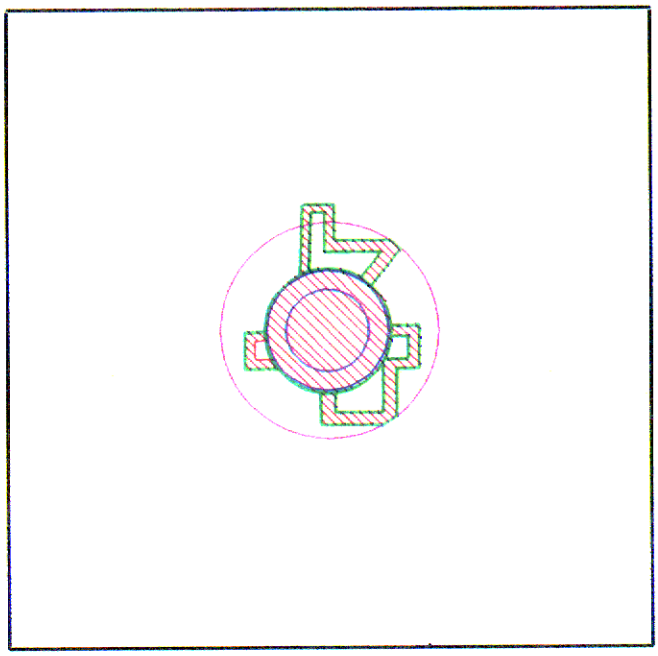
NOT TO SCALE

N

MAP 12

VICTORVILLE PBR #8
VICTORVILLE, CALIFORNIA
SAN BERNARDINO COUNTY
DERP-FUDS# J09CA069301
SITE PHOTO 1993

PROJ. DATE: MAY 1995	DATE OF PHOTO: 1993
19-MAY-1995 10:30	/N/OEW95AB/M78/PHOTO/VIC93A8.DGN & VIC93A8.EXT



MAP 13

VICTORVILLE PBR #8
VICTORVILLE, CALIFORNIA
SAN BERNARDINO COUNTY
DERP-FUDS# J09CA069301
SITE INSPECTION

PROJECT DATE: MAY 1995	DATE OF MAP: 1995
1-JUN-1995 14:40	N/OEW95AB/M78/MAP/VV8.DGN

APPENDIX A

REFERENCES

ORDNANCE AND EXPLOSIVE WASTE
CHEMICAL WARFARE MATERIALS
ARCHIVES SEARCH REPORT
FOR
VICTORVILLE PBR N-1, PBR #2, PBR #7 AND PBR #8
SAN BERNARDINO COUNTY, CALIFORNIA

DERP-FUDS PROJECT NUMBERS J09CA067201, J09CA068601,
J09CA069201, AND J09CA069301

APPENDIX A

REFERENCES

DEMOGRAPHIC REFERENCES

California Chamber of Commerce (619) 256-8617

U.S. Department of Commerce. Bureau of the Census. California. 1990.

Victorville Chamber of Commerce (619) 245-6506

GEOLOGICAL AND SOILS REFERENCES

Thornbury, William D.
1965 *Regional Geomorphology of the United States.* Department of Geology, Indiana University, John Wiley & Sons, Inc., New York.

Tugel, Arlene J. and Woodruff, George A.
1986 *Soil Survey of San Bernardino County, California-Mojave River Area.* USDA, Soil Conservation Service, in cooperation with University of California Agricultural Experiment Station.

APPENDIX B

ACRONYMS

ORDNANCE AND EXPLOSIVE WASTE
CHEMICAL WARFARE MATERIALS
ARCHIVES SEARCH REPORT
FOR
VICTORVILLE PBR N-1, PBR #2, PBR #7 AND PBR #8
SAN BERNARDINO COUNTY, CALIFORNIA

DERP-FUDS PROJECT NUMBERS J09CA067201, J09CA068601,
J09CA069201, AND J09CA069301

APPENDIX B

ACRONYMS

ASR	Archive Search Report
BLM	Bureau of Land Management
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CE	Corps of Engineers
CWM	Chemical Warfare Material
CWS	Chemical Warfare Service
DERP	Defense Environmental Restoration Program
DOD	Department of Defense
DOI	Department of Interior
EOD	Explosive Ordnance Demolition
ERDA	Environmental Restoration Defense Account
FDE	Findings and Determination of Eligibility
FUDS	Formerly Used Defense Sites
HQUSACE	Headquarters, U.S. Army Corps of Engineers
HTW	Hazardous and Toxic Waste
INPR	Inventory Project Report
MCX	Mandatory Center of Expertise
NCP	National Contingency Plan
NDDB	California Department of Fish and Game Natural Diversity Data Base
OEW	Ordnance and Explosive Waste
PBR	Precision Bombing Range
RAC	Risk Assessment Code
RCRA	Resourse Conservation and Recovery Act
SARA	Superfund Amendments and Reauthorization Act
SSHP	Site Specific Safety and Health Plan
USACE	U.S. Army Corps of Engineers

ORDNANCE AND EXPLOSIVE WASTE
CHEMICAL WARFARE MATERIALS
ARCHIVES SEARCH REPORT
FOR
VICTORVILLE PBR N-1, PBR #2, PBR #7 AND PBR #8
SAN BERNARDINO COUNTY, CALIFORNIA

DERP-FUDS PROJECT NUMBERS J09CA067201, J09CA068601,
J09CA069201, AND J09CA069301

APPENDIX B

ACRONYMS

USAEDH	U.S. Army Engineer Division, Huntsville
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
UXO	Unexploded Ordnance
WAA	War Assets Administration
WWII	World War Two

APPENDIX C

REPORTS/STUDIES/LETTERS/MEMORANDUMS

ORDNANCE AND EXPLOSIVE WASTE
CHEMICAL WARFARE MATERIALS
ARCHIVES SEARCH REPORT
FOR
VICTORVILLE PBR N-1, PBR #2, PBR #7 AND PBR #8
SAN BERNARDINO COUNTY, CALIFORNIA

DERP-FUDS PROJECT NUMBERS J09CA067201, J09CA068601,
J09CA069201, AND J09CA069301

APPENDIX C

REPORTS/STUDIES/LETTERS/MEMORANDUMS

APPENDIX C - 1 Inventory Project Reports

APPENDIX C - 2 Findings of Facts

APPENDIX C - 3 Site Specific Safety and Health Plans

APPENDIX C - 4 Site Visit Trip Report

APPENDIX C - 1

INVENTORY PROJECT REPORTS

SITE SURVEY SUMMARY
FOR
DERP PROJECT NO. J09CA068600

SITE NAME: Victorville Precision Bombing Range (PBR) No. 2

LOCATION: The former Victorville PBR No. 2 is located approximately 7 miles east of Victorville, California.

SITE HISTORY: In May 1943, 200 acres were transferred from the U.S. Department of the Interior to the War Department through Public Land Order (PLO) 125 and an additional 440 acres were obtained by fee acquisition from private land owners. The site was used by the Army Air Forces based at Victorville Airfield as a practice bombing area. In September 1948, accountability for 440 acres of Victorville PBR No. 2 was transferred to the War Assets Administration. In February 1952, the remaining 200 acres of the site were transferred to the U.S. Department of the Interior through PLO 807. Currently, the site is divided into approximately 200 parcels owned by private land owners. The south half of the site is undeveloped desert and the north half of the site has numerous homes. The only DOD improvements still on the site are the weathered remains of the asphalt bombing target. There is no visible evidence of unsafe debris, hazardous or toxic waste, or unexploded ordnance resulting from DOD use of the site. However, there are fragments, approximately 5-24 inches in diameter, from exploded ordnance dropped on the bombing target scattered throughout the site. The fragments are spaced approximately 10-15 feet apart within the 300 foot bombing target and 40-60 feet throughout the remainder of the site. In the southwest quarter of the site there is a large amount of trash, mainly rusted tin cans, along a drainage path. San Bernardino County Environmental Health and Fire Departments, the Regional Water Quality Control Board No. 6 and the George Air Force Base EOD Office records do not indicate any hazards associated with the site.

SITE VISIT: Dennis Parker and Paul Robinson, The Earth Technology Corporation visited the site on 9 December 1988.

CATEGORY OF HAZARD: No visible evidence of hazardous or toxic waste, unexploded ordnance or unsafe building debris was observed at the site.

PROJECT DESCRIPTION: None

AVAILABLE STUDIES AND REPORTS: A real estate file is maintained by the Real Estate Division, Los Angeles District, Army Corps of Engineers. The real estate file contains partial acquisition and disposal records for the site. The real estate file also contains a document declaring the bombing target to be free and clear of explosives and explosive objects reasonably possible to detect by visual inspection.

POC/DISTRICT: Debra Castens, (213) 894-2865, Los Angeles District

SITE SURVEY SUMMARY SHEET
FOR
DERP-FUDS SITE NO. J09CA069200
VICTORVILLE PRECISION BOMBING RANGE #7
1 SEPTEMBER 1992

SITE NAME: Victorville Precision Bombing Range #7

SITE LOCATION: This facility is located 24 miles east of Victorville and 42 miles north of San Bernardino, California, at the south west quarter of Section 3, the south east quarter of Section 4, the north east quarter of Section 9, and the north west quarter of Section 10 in Township 5 North, Range 1 East, San Bernardino Base and Meridian, in the County of San Bernardino.

SITE HISTORY: In September of 1942, the United States Army realized a military necessity to commandeer land so that fighter pilots could engage in bombing target practice. The area is comprised of 640 acres of semi-arid desert land of uniform terrain with a slope to the southwest. Four hundred of these acres were acquired from private landowners through a declaration of taking. The remaining 240 acres were withdrawn from public domain and jurisdiction transferred from the Department of the Interior to the War Department. Subsequent to acquisition of this land, the Department of Defense began preparing the land to establish a bombing site. A hexagonal target was created by clearing 900 feet in every direction and surrounding that area with three concentric circular rings of oil surfacing and placing a frame target in the center. The entire area was then surrounded by fencing. During the years that followed, the area was heavily bombed during practice maneuvers by the United States Army Air Corps.

In August of 1947, the acreage was declared as surplus and jurisdiction assumed by the War Assets Administration. A bomb and shell disposal team was then assigned to the clearing of the targets and commenced their work on 20 October 1947. Subsequent to the conclusion of the activities, a Certificate of Clearance dated 22 March 1948 and pertaining to several bombing sites of which Bombing Range #7 was included, certifies that said sites were completely dedudded.

The site is currently undeveloped, covered only with the sporadic growth of desert vegetation. One single family development, encompassing what appears to be a couple of acres, has taken up residence near the southeast corner of the former range.

SITE VISIT: A site visit was conducted by Mr. Michael Marquis of NBS/Lowry to determine potential projects under DERP-FUDS. Mr. Marquis was not able to meet with any of the landowners, as most of the grounds are vacant and owners reside elsewhere. The one development as mentioned above was fenced and no one appeared to be about.

CATEGORY OF HAZARDS: OEW

PROJECT DESCRIPTION: OEW. Recommend that the Corps' Mandatory Center of expertise (MCX) for OEW at the Huntsville Division investigate this area to verify that no unexploded ordnance remains at this site and make a determination that this site is clear of OEW.

AVAILABLE STUDIES AND REPORTS: None

PA POC: Debra Castens, Los Angeles District (213) 894-2865

PROJECT SUMMARY SHEET
FOR
DERP-FUDS OEW PROJECT NO. J09CA69201
VICTORVILLE PRECISION BOMBING RANGE #7
SITE NO. J09CA069200
1 SEPTEMBER 1992

PROJECT DESCRIPTION: This site was formerly a bombing range used by the United States Army. Extensive bombing of targets of this site resulted in OEW contamination.

PROJECT ELIGIBILITY: The property was formerly used by the Army. Any ordnance found would clearly be the result of DOD activities.

POLICY CONSIDERATIONS: There are no policy considerations that affect the proposal of this project.

PROPOSED PROJECT: Recommend that the Corps' Mandatory Center of Expertise (MCX) for OEW at the Huntsville Division investigate this area to verify that no unexploded ordnance remains at this site and make a determination that this site is clean of OEW.

RAC FORM: Attached.

DISTRICT POC: Request that CEHND inform Ms. Debra Castens at (213) 894-2865 when a determination is made in regard to project status and scheduling.

SITE SURVEY SUMMARY SHEET
FOR
DERP-FUDS SITE NO. J09CA069300
VICTORVILLE PRECISION BOMBING RANGE #8
1 SEPTEMBER 1992

SITE NAME: Victorville Precision Bombing Range #8

SITE LOCATION: This facility is located 26 miles southwest of Barstow and eight miles east of Victorville, California, County of San Bernardino, as the East half of Section 21 and the West half of Section 22 in Township 4 North, Range 1 East, San Bernardino Base and Meridian.

SITE HISTORY: In September of 1942, the United States Army realized a military necessity to commandeer land so that fighter pilots could engage in bombing target practice. All 640 acres were withdrawn from public domain land and jurisdiction transferred from the Department of the Interior to the War Department. Subsequent to acquisition of this land, the Department of Defense began preparing the land to establish a bombing site. A hexagonal target was created by clearing 900 feet in every direction and surrounding that area with three concentric circular rings of oil surfacing and placing a frame target in the center. The entire area was then surrounded by fencing. During the years that followed, the area was heavily bombed during practice maneuvers by the United States Air Force. In September of 1944, practice bombing maneuvers were no longer necessary and the acreage was declared as surplus. Custody of the total 640 acres was assumed by the Department of the interior in January of 1948. The land has been subdivided and sold to private interests. There are 196 owners.

Currently, much of the land formerly associated with Victorville Precision Bombing range #8 is undeveloped, covered only with desert vegetation. There are a few ranches and single family developments, and access to them is provided by a grid of paved and unpaved roads. Several new dwellings have been constructed, and it appears that development in this area will continue.

SITE VISIT: A site visit was conducted by Mr. Michael Marquis of NBS/Lowry Inc. on 17 January 1992, to determine potential projects under DERP-FUDS.

CATEGORY OF HAZARDS: OEW

PROJECT DESCRIPTIONS: OEW. The center of the site is littered with fragments of sharp, rusted metal, ostensibly the remains of exploded bomb shells. Curved sections of old pavement are visible and most likely mark the perimeter of the old bombing target. Recommend that the Corps' Mandatory Center of Expertise (MCX) for OEW at the Huntsville Division investigate this area to verify that no unexploded ordnance

remains at this site and make a determination that this site is clean of OEW.

AVAILABLE STUDIES AND REPORTS: None identified.

DISTRICT POC: Debra Castens, Los Angeles District (213) 894-2865.

PROJECT SUMMARY SHEET
FOR
DERP-FUDS OEW PROJECT NO. J09CA069301
VICTORVILLE PRECISION BOMBING RANGE #8
SITE NO. J09CA069300
1 SEPTEMBER 1992

PROJECT DESCRIPTION: The DOD performed the following tasks to establish a bombing target on the ground: A framed wooden target was constructed and placed at or near the center of the site. 900 feet was cleared in every direction in the shape of a hexagon and the area was fenced. Three concentric, circular rings of field mix oil surfacing were laid out at increasing distances from the center target to permit better visibility from the air. Pilots being trained at the Victorville Army Air Field bombed this and other targets extensively during the years that followed.

Presently, the above mentioned area is littered with rusted metal shrapnel, ostensibly the remains of exploded bomb shells. The chunks of metal are of various sizes and some are jagged. Many pieces are partly buried. Curved sections of old pavement are visible and most likely mark the perimeter of the old bombing target.

PROJECT ELIGIBILITY: The evidence found and its location on the site indicate that the rusted metal shrapnel found is the remains of bombing activities performed by the Department of Defense.

POLICY CONSIDERATIONS: Guidelines indicate that the OEW hazard must present a clear danger. As the area is sparsely populated and the debris is small and scattered, the likelihood of a serious injury resulting from the above mentioned material is minimal. However, the potential exists for buried and unexploded ordnance.

PROPOSED PROJECT: Recommend that the Corps' Mandatory Center of Expertise (MCX) for OEW at the Huntsville Division investigate this area to verify that no unexploded ordnance remains at this site and make a determination that this site is clean of OEW.

RAC FORM: Attached.

DISTRICT POC: Request that CEHND inform Ms. Castens at (213) 894-2865 when a determination is made in regard to project status and scheduling.

APPENDIX C - 2

FINDINGS OF FACTS

DEFENSE ENVIRONMENTAL RESTORATION PROGRAM
FOR FORMERLY USED SITES
FINDINGS AND DETERMINATION OF ELIGIBILITY
VICTORVILLE PRECISION BOMBING RANGE NO. 2
SAN BERNARDINO COUNTY, CALIFORNIA
PROJECT NO. J09CA068600

FINDINGS OF FACT

1. In May 1943, 200 acres were transferred from the U.S. Department of the Interior to the War Department through Public Land Order 125. An additional 440 acres were obtained by fee acquisition in a declaration of taking for a total of 640 acres.

2. Victorville PBR No. 2 was used by the Army Air Forces based at Victorville Airfield as a practice bombing area. There were no buildings on the site. The Department of Defense (DOD) improvements on the site consisted of frame butts and appurtenances, fences and gates, and a bombing target. The bombing target, located in the western portion of the site, was composed of asphalt strips approximately 5 feet wide configured as three concentric circles with approximate radii of 100, 200, and 300 feet. In addition, there were two strips of asphalt which transected the concentric circles at right angles to each other.

3. On 3 September 1948, accountability for 440 acres of Victorville PBR No. 2 was transferred to the War Assets Administration. In addition, PLO 807 enacted on 27 February 1952, transferred the jurisdiction and administration of the remaining 200 acres, acquired through PLO 125, to the Department of the Interior. In February 1949, the site was declared dedudded and certified to be free and clear of explosives or explosive objects reasonably possible to detect by visual inspection. Currently, the site is divided into approximately 200 parcels owned by private land owners.

DETERMINATION

Based on the foregoing findings of fact, the site has been determined to have been formerly used by the DOD. It is therefore eligible for the Defense Environmental Restoration Program For Formerly Used Defense Sites established under 10 U.S.C. 2701 et seq.

23 July 91
Date

for ROGER F. YANKOUPE
Brigadier General, U.S. Army
Commanding

Defense Environmental Restoration Program
Formerly Used Defense Sites
Findings and Determination of Eligibility

Victorville Precision Bombing Range #7
Victorville, California
Site No. J09CA069200

FINDINGS OF FACT

1. Beginning on 2 September 1942, the United States War Department acquired 400 acres fee and 240 acres transfer from the Department of the Interior for a total of 640 acres for use as a bombing range. The site was developed accordingly and became known as Precision Bombing Range #7.

2. The Army constructed a facility for the training and practice of pilots in the precision bombing of targets on the ground. Construction included the building and placement of the actual target (made of wood), fencing, grading of access road and target area, and paving. Precision Bombing Range #7 remained active until August of 1947.

3. The site was declared as surplus and custody assumed by the War Assets Administration on 10 May 1948. The area has since been subdivided and many portions have been sold to private interests. However, some areas still remain the property of the United States Government. The entire area appears to be barren, except for what appears to be a single family development at or near the southeast corner of the site.

DETERMINATION

Based on the foregoing Findings of Fact, the site has been determined to have been formerly used by the Department of Defense. It is therefore eligible for the Defense Environmental Restoration Program - Formerly Used Defense Sites established under 10 USC 2701 et seq.

10 Sep 93
Date

for MILTON HUNTER
Brigadier General, U.S. Army
Commanding

Defense Environmental Restoration Program
Formerly Used Defense Sites
Findings and Determination of Eligibility

Victorville Precision Bombing Range #8
Victorville, California
Site No. J09CA069300

FINDINGS OF FACT

1. Beginning on 2 September 1942, the United States War Department acquired 640 acres transfer from the Department of the Interior for use as a bombing range. The site was developed accordingly and became known as Precision Bombing Range #8.

2. The Army constructed a facility for the training and practice of pilots in the precision bombing of targets on the ground. Construction included the building and placement of the actual target (made of wood), fencing, grading of access road and target area, and paving. Precision Bombing Range #8 remained active until September of 1944.

3. The site was declared as surplus and custody of 640 acres was assumed by the Department of the Interior on 30 January 1948. All of the area has since been subdivided and sold to private interests. There are 196 owners. However, much of the land is barren, with only a few single family ranches and dwellings. Many lots are vacant, indicating the potential for growth in the future.

DETERMINATION

Based on the foregoing Findings of Fact, the site has been determined to have been formerly used by the Department of Defense. It is therefore eligible for the Defense Environmental Restoration Program - Formerly Used Defense Sties established under 10 USC 2701 et seq.

10 Sep 93
Date

DEP Stt, cp
MILTON HUNTER
Brigadier General, U.S. Army
Commanding

APPENDIX C - 3

SITE SPECIFIC SAFETY AND HEALTH PLANS

SITE SPECIFIC SAFETY AND HEALTH PLAN (SSHP)
OEW/CWM Archives Search Site Inspection Visit
Victorville PRB N-1
Barstow, CA
Site #J09CA067201

1. REFERENCES:

a. Safety Manual, CELMS-PM-M, 16 Sep 93 w/ Ch1.

b. SOP for Reporting Ordnance and Unexploded Ordnance (UXO), CELMS-PM-M, 19 Jan 95.

c. OEW Guidance Regarding Coordination with EOD Organizations, 10 Jan 95.

2. GENERAL: This plan prescribes the safety and health requirements for team activities and operations conducted to determine the presence of ordnance and explosive waste and /or chemical warfare materials at the specified site.

a. The Safety Officer has final authority on all matters relating to safety. The safety rules will be followed at all times. Any member of the team may stop operations if they observe a situation or activity which poses a potential hazard to any individual or to the operation. All actions must comply with the common sense rule!

b. All team members will be aware of the local emergency numbers and the location of the nearest telephone.

c. A minimum of two and a maximum of eight persons will be allowed on-site at any one time.

d. The property owner is not required to sign the SSHP, but should be politely asked to participate in the safety briefing.

3. MISSION: Reconnoiter, document, and photograph areas on Victorville Practice Bombing Range N-1, CA, suspected to be contaminated with UXO and/or toxic chemical munitions.

4. SAFETY PRECAUTIONS: All team members will stay within sight of each other while on site. A first aid kit will be on hand. The following three basic safety rules apply at all times:

a. Rule 1 - Do not touch or pick up anything at the site.

b. Rule 2 - Do not step anywhere you cannot see where you place your foot.

c. Rule 3 - There will be no eating or smoking at the site. Hands will be washed after the survey and prior to eating. Drinking fluids should be done during periodic breaks.

5. SITE COMMUNICATIONS: The primary means of communicating with other team members will be by voice. Team members will always remain within sight of each other. Cellular telephones should be carried to facilitate and expedite calling for emergency medical services.

6. NATURAL HAZARDS: Cold, wet weather may be encountered during the month of February. Snakes, biting insects, and poisonous plants could be encountered.

7. ORDNANCE HAZARDS: Practice bombs, artillery projectiles, small arms ammunition, as well as other miscellaneous ordnance items might be found in the area.

8. HAZARD EVALUATION: Estimate the overall hazards using the following guidelines: (check appropriate item)

[ ] Low (small arms ammunition)
[x] Moderate (practice bombs with spotting charge)
[ ] High (high explosive munitions, toxic chemicals, WP)
[ ] Unknown

9. EMERGENCY PROCEDURES: First aid will be rendered for any injuries. In the event of a detonation, everyone should freeze until the situation can be assessed by the team leader. Unnecessary injuries can be avoided by not panicking and planning a logical course of action, which may include retracing your steps out of an impact area. Emergency medical services will be contacted by the most expeditious means available.

10. SAFETY STATEMENT: Safety is everyone's business. No unnecessary risks will be taken to obtain photos or other data. Team members are responsible for notifying the project Manager or safety Officer of any physical conditions that may impede or prevent their

accomplishment of the mission. An example is allergic reactions to bee stings.

Important Phone Numbers

Emergency medical service:	911
Law enforcement agency:	619-256-2211
Huntsville Safety:	(205) 895-1582/1579
Non-emergency number:	1-800-627-3532, PIN 707-2534

San Bernardino FICC
(909) 383-5651

SSHP reviewed by: Hank Counts

Encls
1. Safety Briefing Attendance
2. Safety gear

SITE SURVEY SAFETY BRIEFING

PPE		Site Hazards	
x	Work Clothing	x	OEW
x	Gloves		CSM
	Hardhat		HTW
	Hearing protection	x	Slips, falls, trips
x	Safety shoes	x	Wildlife
	Safety glasses	x	Vegetation

Weather Precautions

cold	Cold/Heat
	Severe Weather

Safety Briefing Attendance

All team members and any accompanying personnel will be briefed and sign this form:

Print name and organization	Signature
William K. James CELMS-PM-M	William K. James
Ted Moore CELMS-PM-M	Ted Moore
James Luebbert CELMS-PD-AR	James Luebbert
John Kay USDI, BLM, CDD, HazMat	John Kay

MANDATORY MINIMUM SAFETY GEAR

First aid kit (individual)	x
Survival kit	x
Fire starter	x
Space blanket	x
Whistle	x
Mirror	x
Cellular phone	x
Flash light	x
Survey tape	x
Canteen	x

SITE SPECIFIC SAFETY AND HEALTH PLAN (SSHP)
OEW/CWM Archives Search Site Inspection Visit
Victorville PBR # 2
Victorville, CA
Site # J09CA068601

1. REFERENCES:

a. Safety Manual, CELMS-PM-M, 16 Sep 93 w/ Ch1.

b. SOP for Reporting Ordnance and Unexploded Ordnance (UXO), CELMS-PM-M, 19 Jan 95.

c. OEW Guidance Regarding Coordination with EOD Organizations, 10 Jan 95.

2. GENERAL: This plan prescribes the safety and health requirements for team activities and operations conducted to determine the presence of ordnance and explosive waste and /or chemical warfare materials at the specified site.

a. The Safety Officer has final authority on all matters relating to safety. The safety rules will be followed at all times. Any member of the team may stop operations if they observe a situation or activity which poses a potential hazard to any individual or to the operation. All actions must comply with the common sense rule!

b. All team members will be aware of the local emergency numbers and the location of the nearest telephone.

c. A minimum of two and a maximum of eight persons will be allowed on-site at any one time.

d. The property owner is not required to sign the SSHP, but should be politely asked to participate in the safety briefing.

3. MISSION: Reconnoiter, document, and photograph areas on Victorville Practice Bombing Range, Victorville, CA suspected to be contaminated with UXO and/or toxic chemical munitions.

4. SAFETY PRECAUTIONS: All team members will stay within sight of each other while on site. A first aid kit will be on hand. The following three basic safety rules apply at all times:

a. Rule 1 - Do not touch or pick up anything at the site.

b. Rule 2 - Do not step anywhere you cannot see where you place your foot.

c. Rule 3 - There will be no eating or smoking at the site. Hands will be washed after the survey and prior to eating. Drinking fluids should be done during periodic breaks.

5. SITE COMMUNICATIONS: The primary means of communicating with other team members will be by voice. Team members will always remain within sight of each other. Cellular telephones should be carried to facilitate and expedite calling for emergency medical services.

6. NATURAL HAZARDS: Cold, wet weather can be expected in the month of February. Snakes, biting insects, and poisonous plants could be encountered.

7. ORDNANCE HAZARDS: Practice bombs, artillery projectiles, small arms ammunition, as well as other miscellaneous ordnance items might be found in the area.

8. HAZARD EVALUATION: Estimate the overall hazards using the following guidelines: (check appropriate item)

[ ] Low (small arms ammunitions)
[ ] Moderate (practice bombs with spotting charge)
[X] High (high explosive munitions, toxic chemicals, WP)
[ ] Unknown

9. EMERGENCY PROCEDURES: First aid will be rendered for any injuries. In the event of a detonation, everyone should freeze until the situation can be assessed by the team leader. Unnecessary injuries can be avoided by not panicking and planning a logical course of action, which may include retracing your steps out of an impact area. Emergency medical services will be contacted by the most expeditious means available.

10. SAFETY STATEMENT: Safety is everyone's business. No unnecessary risks will be taken to obtain photos or other data. Team members are responsible for notifying the project Manager or safety Officer of any physical conditions that may impede or prevent their

accomplishment of the mission. An example is allergic reactions to bee stings.

Important Phone Numbers

Emergency medical service:	911
Law enforcement agency:	(619) 245-4211
Huntsville Safety:	(205) 895-1582/1579
	(800) 627-3532, PIN 777-2534
Non-emergency number:	(314) 331-8036

SSHP reviewed by: Hank Counts
Hank Counts

Encls
1. Safety Briefing Attendance
2. Safety gear

SITE SURVEY SAFETY BRIEFING

PPE		**Site Hazards**	
x	Work Clothing	x	OEW
x	Gloves		CSM
	Hardhat		HTW
	Hearing protection	x	Slips, falls, trips
x	Safety shoes	x	Wildlife
	Safety glasses	x	Vegetation

Weather Precautions

cold Cold/Heat

______ Severe Weather

Safety Briefing Attendance

All team members and any accompanying personnel will be briefed and sign this form:

Print name and organization	Signature
[illegible] USDI, BLM, CPD, HazMat	[illegible]
William K. James CELMS-PM-M	William K. James
Ted Moore CELMS-PM-M	Ted Moore
[illegible]	[illegible]

MANDATORY MINIMUM SAFETY GEAR

First aid kit (individual) ✓

Survival kit ✓

Fire starter ✓

Space blanket ✓

Whistle ✓

Mirror ✓

Cellular phone ✓

Flash light ✓

Survey tape ✓

Canteen ✓

SITE SPECIFIC SAFETY AND HEALTH PLAN (SSHP)
OEW/CWM Archives Search Site Inspection Visit

Victorville PBR # 7
Victorville, CA
Site #J09CA069201

1. REFERENCES:

a. Safety Manual, CELMS-PM-M, 16 Sep 93 w/ Ch1.

b. SOP for Reporting Ordnance and Unexploded Ordnance (UXO), CELMS-PM-M, 19 Jan 95.

c. OEW Guidance Regarding Coordination with EOD Organizations, 10 Jan 95.

2. GENERAL: This plan prescribes the safety and health requirements for team activities and operations conducted to determine the presence of ordnance and explosive waste and /or chemical warfare materials at the specified site.

a. The Safety Officer has final authority on all matters relating to safety. The safety rules will be followed at all times. Any member of the team may stop operations if they observe a situation or activity which poses a potential hazard to any individual or to the operation. All actions must comply with the common sense rule!

b. All team members will be aware of the local emergency numbers and the location of the nearest telephone.

c. A minimum of two and a maximum of eight persons will be allowed on-site at any one time.

d. The property owner is not required to sign the SSHP, but should be politely asked to participate in the safety briefing.

3. MISSION: Reconnoiter, document, and photograph areas on Victorville Practice Bombing Range # 7, CA, suspected to be contaminated with UXO and/or toxic chemical munitions.

4. SAFETY PRECAUTIONS: All team members will stay within sight of each other while on site. A first aid kit will be on hand. The following three basic safety rules apply at all times:

a. Rule 1 - Do not touch or pick up anything at the site.

b. Rule 2 - Do not step anywhere you cannot see where you place your foot.

c. Rule 3 - There will be no eating or smoking at the site. Hands will be washed after the survey and prior to eating. Drinking fluids should be done during periodic breaks.

5. SITE COMMUNICATIONS: The primary means of communicating with other team members will be by voice. Team members will always remain within sight of each other. Cellular telephones should be carried to facilitate and expedite calling for emergency medical services.

6. NATURAL HAZARDS: Cold, wet weather may be encountered during the month of February. Snakes, biting insects, and poisonous plants could be encountered.

7. ORDNANCE HAZARDS: Practice bombs, artillery projectiles, small arms ammunition, as well as other miscellaneous ordnance items might be found in the area.

8. HAZARD EVALUATION: Estimate the overall hazards using the following guidelines: (check appropriate item)

[ ] Low (small arms ammunition)
[x] Moderate (practice bombs with spotting charge)
[ ] High (high explosive munitions, toxic chemicals, WP)
[ ] Unknown

9. EMERGENCY PROCEDURES: First aid will be rendered for any injuries. In the event of a detonation, everyone should freeze until the situation can be assessed by the team leader. Unnecessary injuries can be avoided by not panicking and planning a logical course of action, which may include retracing your steps out of an impact area. Emergency medical services will be contacted by the most expeditious means available.

10. SAFETY STATEMENT: Safety is everyone's business. No unnecessary risks will be taken to obtain photos or other data. Team members are responsible for notifying the project Manager or safety Officer of any physical conditions that may impede or prevent their

accomplishment of the mission. An example is allergic reactions to bee stings.

Important Phone Numbers

Emergency medical service:	911
Law enforcement agency:	619-245-4211
Huntsville Safety:	(205) 895-1582/1579
Non-emergency number:	1-800-627-3532, PIN 707-2534

SSHP reviewed by: Hank Counts

Encls
1. Safety Briefing Attendance
2. Safety gear

SITE SURVEY SAFETY BRIEFING

PPE		Site Hazards	
x	Work Clothing	x	OEW
x	Gloves		CSM
	Hardhat		HTW
	Hearing protection	x	Slips, falls, trips
x	Safety shoes	x	Wildlife
	Safety glasses	x	Vegetation

Weather Precautions

cold	Cold/Heat
	Severe Weather

Safety Briefing Attendance

All team members and any accompanying personnel
will be briefed and sign this form:

Print name and organization	Signature
William K. JAMES CELMS-PM-M	
Ted Moore CELMS PM-M	
John Key USDI, BLM, CDD, HazMat	

MANDATORY MINIMUM SAFETY GEAR

First aid kit (individual)	x
Survival kit	x
Fire starter	x
Space blanket	x
Whistle	x
Mirror	x
Cellular phone	x
Flash light	x
Survey tape	x
Canteen	x

SITE SPECIFIC SAFETY AND HEALTH PLAN (SSHP)
OEW/CWM Archives Search Site Inspection Visit
Victorville PBR # 8
Victorville, CA
Site #J09CA069301

1. REFERENCES:

a. Safety Manual, CELMS-PM-M, 16 Sep 93 w/ Ch1.

b. SOP for Reporting Ordnance and Unexploded Ordnance (UXO), CELMS-PM-M, 19 Jan 95.

c. OEW Guidance Regarding Coordination with EOD Organizations, 10 Jan 95.

2. GENERAL: This plan prescribes the safety and health requirements for team activities and operations conducted to determine the presence of ordnance and explosive waste and /or chemical warfare materials at the specified site.

a. The Safety Officer has final authority on all matters relating to safety. The safety rules will be followed at all times. Any member of the team may stop operations if they observe a situation or activity which poses a potential hazard to any individual or to the operation. All actions must comply with the common sense rule!

b. All team members will be aware of the local emergency numbers and the location of the nearest telephone.

c. A minimum of two and a maximum of eight persons will be allowed on-site at any one time.

d. The property owner is not required to sign the SSHP, but should be politely asked to participate in the safety briefing.

3. MISSION: Reconnoiter, document, and photograph areas on Victorville Practice Bombing Range # 8, CA, suspected to be contaminated with UXO and/or toxic chemical munitions.

4. SAFETY PRECAUTIONS: All team members will stay within sight of each other while on site. A first aid kit will be on hand. The following three basic safety rules apply at all times:

a. Rule 1 - Do not touch or pick up anything at the site.

b. Rule 2 - Do not step anywhere you cannot see where you place your foot.

c. Rule 3 - There will be no eating or smoking at the site. Hands will be washed after the survey and prior to eating. Drinking fluids should be done during periodic breaks.

5. SITE COMMUNICATIONS: The primary means of communicating with other team members will be by voice. Team members will always remain within sight of each other. Cellular telephones should be carried to facilitate and expedite calling for emergency medical services.

6. NATURAL HAZARDS: Cold, wet weather can be expected in the month of February. Snakes, biting insects, and poisonous plants could be encountered.

7. ORDNANCE HAZARDS: Practice bombs, artillery projectiles, small arms ammunition, as well as other miscellaneous ordnance items might be found in the area.

8. HAZARD EVALUATION: Estimate the overall hazards using the following guidelines: (check appropriate item)

[ ] Low (small arms ammunition)
[x] Moderate (practice bombs with spotting charge)
[ ] High (high explosive munitions, toxic chemicals, WP)
[ ] Unknown

9. EMERGENCY PROCEDURES: First aid will be rendered for any injuries. In the event of a detonation, everyone should freeze until the situation can be assessed by the team leader. Unnecessary injuries can be avoided by not panicking and planning a logical course of action, which may include retracing your steps out of an impact area. Emergency medical services will be contacted by the most expeditious means available.

10. SAFETY STATEMENT: Safety is everyone's business. No unnecessary risks will be taken to obtain photos or other data. Team members are responsible for notifying the project Manager or safety Officer of any physical conditions that may impede or prevent their

accomplishment of the mission. An example is allergic reactions to bee stings.

Important Phone Numbers

Emergency medical service:	911
Law enforcement agency:	619-245-4211
Huntsville Safety:	(205) 895-1582/1579
Non-emergency number:	1-800-627-3532, PIN 707-2534

SSHP reviewed by: Hank Caserta

Encls
1. Safety Briefing Attendance
2. Safety gear

SITE SURVEY SAFETY BRIEFING

PPE		Site Hazards	
x	Work Clothing	x	OEW
x	Gloves		CSM
	Hardhat		HTW
	Hearing protection	x	Slips, falls, trips
x	Safety shoes	x	Wildlife
	Safety glasses	x	Vegetation

Weather Precautions

Cold	Cold/Heat
	Severe Weather

Safety Briefing Attendance

All team members and any accompanying personnel
will be briefed and sign this form:

Print name and organization	Signature
William K. JAMES CELMS-PM-M	William K. James
Ted Moore CELMS PM-M	Ted Moore
John Kay USDI, BCM, CDP, Haz Mat	John Kay
James Luebbert CELMS PD	James Luebbert

MANDATORY MINIMUM SAFETY GEAR

First aid kit (individual)	x
Survival kit	x
Fire starter	x
Space blanket	x
Whistle	x
Mirror	x
Cellular phone	x
Flash light	x
Survey tape	x
Canteen	x

APPENDIX C - 4

SITE VISIT TRIP REPORT

MEMORANDUM FOR: Mike Dace

SUBJECT: Site Visit, Victorville PBR N-1, PBR #2, PBR #7, and PBR #8, San Bernardino County, California, 6-10 February 1995 (This site visit was conducted in conjunction with site visits to the Cadiz Lake Sonic Targets.)

Participants:

Corps of Engineers

Ted Moore	Project Manager
Kirk James	UXO Specialist and Safety Officer
Jim Luebbert	Historian

Others

John Key	BLM Hazmat Specialist

Monday, 6 February 1995

Morning Travel from St. Louis to Victorville, California

1300 The team travelled to PBR N-1 which is located near Barstow, California. There is a high voltage transmission line that traverses the bombing target from northwest to southeast near the center of the target. We parked at the southern border of the target and walked along the transmission line right-of-way toward the center of the target. We began finding practice bomb debris very soon after leaving the vehicle and continued to find practice bomb debris all the way to the target center. The largest concentration of bomb debris is within approximately .15 miles of the target center. The target center is marked with concentric rings constructed of asphalt. The rings have deteriorated but are still clearly visible. We found no evidence of the use of high explosive ordnance or unexploded portions of practice bombs on the site. The pattern of bomb debris found suggests a southeast to northwest approach to the target.

Tuesday, 7 February 1995

0700 The team travelled to PBR #2 which is located just east of Victorville, California. We were able to drive directly to the center of the target. The target center is marked with concentric oiled rings. The rings have deteriorated but are still clearly visible. The largest concentration of bomb debris is within approximately .15 miles of the target center. We found no evidence of the use of high explosive ordnance or unexploded portions of practice bombs on the site. The pattern of bomb debris found suggests a southwest to northeast approach to the target.

0830 The team travelled to PBR #7 which is located east of Victorville, California. We were able to drive directly to the center of the target. The target center is marked with concentric oiled rings. The rings have deteriorated but are still clearly visible. The largest concentration of bomb debris is within approximately .15 miles of the target center. We found no evidence of the use of high explosive ordnance or unexploded portions of practice bombs on the site. The pattern of bomb debris found suggests a south to north approach to the target.

1000 The team travelled to PBR #8 which is located east of Victorville, California. We were able to drive directly to the center of the target. The target center is marked with concentric oiled rings. The rings have deteriorated but are still clearly visible. The largest concentration of bomb debris is within approximately .15 miles of the target center. We found no evidence of the use of high explosive ordnance or unexploded portions of practice bombs on the site. The pattern of bomb debris found suggests a northeast to southwest approach to the target.

1300 Visits to the San Bernardino County Sheriff's station in Barstow and the BLM office in Barstow.

Wednesday, 8 February 1995 and Thursday, 9 February 1995

Inspection of Cadiz Lake Sonic Targets.

Friday, 10 February 1995

Return to St. Louis.

APPENDIX D

HISTORICAL PHOTOGRAPHS

(NOT USED)

APPENDIX E

INTERVIEWS

TELEPHONE OR VERBAL CONVERSATION RECORD DATE 30 January 1995

For use of this form, see AR340-15; the proponent agency is the Adjutant General's Office.

SUBJECT OF CONVERSATION Victorville Precision Bombing Range #7		
OUTGOING CALL		
PERSON CALLING Ted Moore	ADDRESS CELMS PM-M	PHONE NUMBER AND EXT. (314) 331-8849
PERSON CALLED Rollin Robin	OFFICE Land Owner	PHONE NUMBER AND EXT. (818) 342-5677

SUMMARY OF CONVERSATION:

Since Mr. Robin has an unlisted telephone number, we sent him a letter requesting permission to inspect the 60 acres he owns at PBR #7. Mr. Robin gave his permission to inspect his property and also said there would be no problem inspecting the 20 acres owned by Mr. Erling Goo. I asked Mr. Robin if he was aware of any ordnance being found on the property and he said he has not walked the property enough to know for sure.

TELEPHONE OR VERBAL CONVERSATION RECORD DATE 7 February 1995

For use of this form, see AR340-15; the proponent agency is the Adjutant General's Office.

SUBJECT OF CONVERSATION Victorville Precision Bombing Ranges		
OUTGOING CALL		
PERSON CALLING Ted Moore	ADDRESS CELMS PM-M	PHONE NUMBER AND EXT. (314) 331-8849
PERSON CALLED Lt. Hankerson	OFFICE San Bernadino County Sheriff's Dept., Barstow Station	PHONE NUMBER AND EXT. (619) 256-4841

SUMMARY OF CONVERSATION:

We visited with Lt. Hankerson during our site visit to the Victorville PBR #2, 7, 8, and N-1. He has been with the sheriff's dept. for 25 years and is not aware of any ordnance incidents in the vicinity of the 25 bombing targets used by the Victorville AAF.

TELEPHONE OR VERBAL CONVERSATION RECORD DATE 14 February 1995

For use of this form, see AR340-15; the proponent agency is the Adjutant General's Office.

SUBJECT OF CONVERSATION
Victorville Precision Bombing Ranges and Cadiz Lake Sonic Targets

INCOMING CALL		
PERSON CALLING Sgt Bob Hall	ADDRESS San Bernardino County Sheriff's Dept., Bomb and Arson Detail	PHONE NUMBER AND EXT. (909) 387-3601 (909) 422-9038 (pager)
PERSON CALLED Ted Moore	OFFICE CELMS PM-M	PHONE NUMBER AND EXT. (314) 331-8849

SUMMARY OF CONVERSATION:

Prior to our site visits to the Victorville PBR's and the Cadiz Lake Sonic Targets, I called the San Bernardino County Bomb and Arson Squad. As I called the various sheriff's stations, I was advised by each one to contact the bomb and arson squad. My initial contact was with Lt. Larry Swope. He was to call me back with more information.

The return call was made by Sgt Hall. He indicated that ordnance was being found by road crews working at the intersection of I-10 and I-15. I asked him to FAX information about the ordnance to me so that I can pass it on to the Los Angeles Corps of Engineers office. I then described the areas of concern related to Victorville and Cadiz Lake and he said they may have some information on ordnance incidents. I promised to provide maps of the two areas so that he can be precise about the ordnance incidents. He indicated they answer a lot of calls about ordnance taken from active installations in the area.

APPENDIX F

NEWSPAPERS/JOURNALS

(NOT USED)

APPENDIX G

PRESENT SITE PHOTOGRAPHS

ORDNANCE AND EXPLOSIVE WASTE
CHEMICAL WARFARE MATERIALS
ARCHIVES SEARCH REPORT
FOR
VICTORVILLE PRECISION BOMBING RANGES N-1, #2, #7, AND #8
SAN BERNARDINO COUNTY, CALIFORNIA

DERP-FUDS PROJECT NUMBERS J09CA067201, J09CA068601,
J09CA069201, AND J09CA069301

APPENDIX G

PRESENT SITE PHOTOGRAPHS

TYPICAL PHOTO

Page G-6

PHOTO # 1 - Desert Tortoise - Only endangered species in project area

PBR N-1

Page G-7

PHOTO # 2 - General view of target center
PHOTO # 3 - General view of target area

Page G-8

PHOTO # 4 - 50 cal. casing
PHOTO # 5 - Typical bomb debris

Page G-9

PHOTO # 6 - Typical bomb debris
PHOTO # 7 - Typical bomb debris

Page G-10

PHOTO # 8 - Typical bomb debris
PHOTO # 9 - Typical bomb debris

ORDNANCE AND EXPLOSIVE WASTE
CHEMICAL WARFARE MATERIALS
ARCHIVES SEARCH REPORT
FOR
VICTORVILLE PRECISION BOMBING RANGES N-1, #2, #7, AND #8
SAN BERNARDINO COUNTY, CALIFORNIA

DERP-FUDS PROJECT NUMBERS J09CA067201, J09CA068601,
J09CA069201, AND J09CA069301

APPENDIX G

PRESENT SITE PHOTOGRAPHS

PBR N-1

Page G-11

PHOTO # 10 - Typical bomb debris
PHOTO # 11 - Typical bomb debris

Page G-12

PHOTO # 12 - Typical bomb debris
PHOTO # 13 - Typical bomb debris

Page G-13

PHOTO # 14 - Typical bomb debris

PBR #2

Page G-14

PHOTO # 15 - General view of target center -view to north
(vehicles parked at target center)
PHOTO # 16 - General view of target center - view to south

Page G-15

PHOTO # 17 - Oiled ring
PHOTO # 18 - Typical bomb debris

ORDNANCE AND EXPLOSIVE WASTE
CHEMICAL WARFARE MATERIALS
ARCHIVES SEARCH REPORT
FOR
VICTORVILLE PRECISION BOMBING RANGES N-1, #2, #7, AND #8
SAN BERNARDINO COUNTY, CALIFORNIA

DERP-FUDS PROJECT NUMBERS J09CA067201, J09CA068601,
J09CA069201, AND J09CA069301

APPENDIX G

PRESENT SITE PHOTOGRAPHS

PBR #2

Page G-16

PHOTO # 19 - Typical bomb debris
PHOTO # 20 - Typical bomb debris

Page G-17

PHOTO # 21 - Typical bomb debris
PHOTO # 22 - Typical bomb debris

Page G-18

PHOTO # 23 - Typical bomb debris
PHOTO # 24 - Typical bomb debris

PBR #7

Page G-19

PHOTO # 25 - General view of target center - view to south
PHOTO # 26 - General view of target center - view to north

ORDNANCE AND EXPLOSIVE WASTE
CHEMICAL WARFARE MATERIALS
ARCHIVES SEARCH REPORT
FOR
VICTORVILLE PRECISION BOMBING RANGES N-1, #2, #7, AND #8
SAN BERNARDINO COUNTY, CALIFORNIA

DERP-FUDS PROJECT NUMBERS J09CA067201, J09CA068601,
J09CA069201, AND J09CA069301

APPENDIX G

PRESENT SITE PHOTOGRAPHS

PBR #7

Page G-20

PHOTO # 27 - Typical bomb debris
PHOTO # 28 - Typical bomb debris

Page G-21

PHOTO # 29 - Typical bomb debris
PHOTO # 30 - Typical bomb debris

Page G-22

PHOTO # 31 - Typical bomb debris
PHOTO # 32 - Typical bomb debris

Page G-23

PHOTO # 33 - Typical bomb debris
PHOTO # 34 - Typical bomb debris

Page G-24

PHOTO # 35 - Typical bomb debris

ORDNANCE AND EXPLOSIVE WASTE
CHEMICAL WARFARE MATERIALS
ARCHIVES SEARCH REPORT
FOR
VICTORVILLE PRECISION BOMBING RANGES N-1, #2, #7, AND #8
SAN BERNARDINO COUNTY, CALIFORNIA

DERP-FUDS PROJECT NUMBERS J09CA067201, J09CA068601, J09CA069201, AND J09CA069301

APPENDIX G

PRESENT SITE PHOTOGRAPHS

PBR #8

Page G-25

PHOTO # 36 - General view of target center - view to north (vehicles parked at target center)
PHOTO # 37 - General view of target center - view to south

Page G-26

PHOTO # 38 - Typical bomb debris
PHOTO # 39 - Typical bomb debris

Page G-27

PHOTO # 40 - Typical bomb debris

PHOTO # 1
DESERT TORTOISE
ONLY ENDANGERED SPECIES IN PROJECT AREA

PHOTO # 2
GENERAL VIEW OF TARGET CENTER

PHOTO # 3
GENERAL VIEW OF TARGET AREA

PHOTO # 4
50 CAL. CASING

PHOTO # 5
TYPICAL BOMB DEBRIS

PHOTO # 6
TYPICAL BOMB DEBRIS

PHOTO # 7
TYPICAL BOMB DEBRIS

PHOTO # 8
TYPICAL BOMB DEBRIS

PHOTO # 9
TYPICAL BOMB DEBRIS

PHOTO # 10
TYPICAL BOMB DEBRIS

PHOTO # 11
TYPICAL BOMB DEBRIS

PHOTO # 12
TYPICAL BOMB DEBRIS

PHOTO # 13
TYPICAL BOMB DEBRIS

PHOTO # 14
TYPICAL BOMB DEBRIS

PHOTO # 15
GENERAL VIEW OF TARGET CENTER - VIEW TO NORTH
(VEHICLES PARKED AT TARGET CENTER)

PHOTO # 16
GENERAL VIEW OF TARGET CENTER - VIEW TO SOUTH

PHOTO # 17
OILED RING

PHOTO # 18
TYPICAL BOMB DEBRIS

PHOTO # 19
TYPICAL BOMB DEBRIS

PHOTO # 20
TYPICAL BOMB DEBRIS

PHOTO # 21
TYPICAL BOMB DEBRIS

PHOTO # 22
TYPICAL BOMB DEBRIS

PHOTO # 23
TYPICAL BOMB DEBRIS

PHOTO # 24
TYPICAL BOMB DEBRIS

PHOTO # 25
GENERAL VIEW OF TARGET CENTER - VIEW TO SOUTH

PHOTO # 26
GENERAL VIEW OF TARGET CENTER - VIEW TO NORTH

PHOTO # 27
TYPICAL BOMB DEBRIS

PHOTO # 28
TYPICAL BOMB DEBRIS

PHOTO # 29
TYPICAL BOMB DEBRIS

PHOTO # 30
TYPICAL BOMB DEBRIS

PHOTO # 31
TYPICAL BOMB DEBRIS

PHOTO # 32
TYPICAL BOMB DEBRIS

PHOTO # 33
TYPICAL BOMB DEBRIS

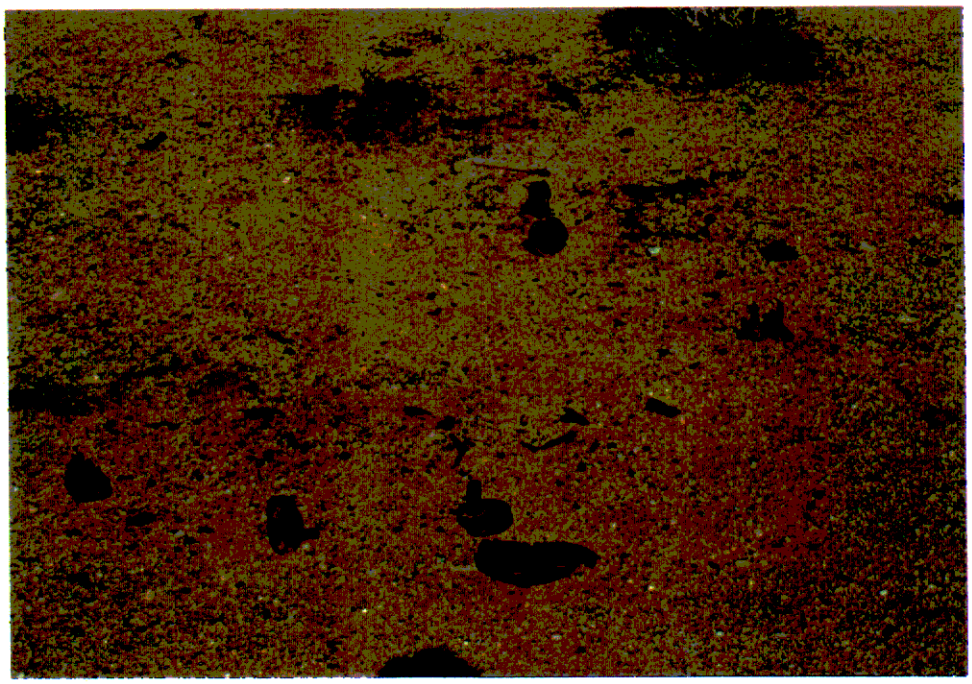


PHOTO # 34
TYPICAL BOMB DEBRIS

PHOTO # 35
TYPICAL BOMB DEBRIS

PHOTO # 36
GENERAL VIEW OF TARGET CENTER - VIEW TO NORTH
(VEHICLES PARKED AT TARGET CENTER)

PHOTO # 37
GENERAL VIEW OF TARGET CENTER - VIEW TO SOUTH

PHOTO # 38
TYPICAL BOMB DEBRIS

PHOTO # 39
TYPICAL BOMB DEBRIS

PHOTO # 40
TYPICAL BOMB DEBRIS

APPENDIX H

HISTORICAL MAPS/DRAWINGS

(NOT USED)

APPENDIX I

RISK ASSESSMENT CODE PROCEDURE FORMS

18 Apr 94

RISK ASSESSMENT PROCEDURE FOR
ORDNANCE AND EXPLOSIVE WASTE (OEW) SITE

Site Name	Victorville PBR N-1	Rater's Name	Ted Moore
Site Location	San Bernardino County	Phone No.	(314) 331-8849
DERP Project#	J09CA067201	Organization	CELMS PM-M
Date Completed	4/14/95	RAC Score	4

OEW RISK ASSESSMENT:

This risk assessment procedure was developed in accordance with MIL-STD 882C and AR 385-10. The RAC score will be used by CEHND to prioritize the remedial action at Formerly Used Defense Sites. The OEW risk assessment should be based upon best available information resulting from records searches, reports of Explosive Ordnance Disposal (EOD) detachment actions, and field observations, interviews, and measurements. This information is used to assess the risk involved based upon the potential OEW hazards identified at the site. The risk assessment is composed of two factors, **hazard severity and hazard probability.** Personnel involved in visits to potential OEW sites should view the CEHND videotape entitled "A Life Threatening Encounter, OEW."

Part I. Hazard Severity. Hazard severity categories are defined to provide a qualitative measure of the worst credible mishap resulting from personnel exposure to various types and quantities of unexploded ordnance items.

TYPE OF ORDNANCE
(Circle all values that apply)

A. Conventional Ordnance and Ammunition

	VALUE
Medium/Large Caliber (20mm and larger)	10
Bombs, Explosive	10
Grenades, Hand and Rifle, Explosive	10
Landmines, Explosive	10
Rockets, Guided Missiles, Explosive	10
Detonators, Blasting Caps, Fuzes, Boosters, Bursters	6
Bombs, Practice (w/spotting charges)	(6)
Grenades, Practice (w/spotting charges)	4
Landmines, Practice (w/spotting charges)	4
Small Arms (.22 cal - .50 cal)	1
Conventional Ordnance and Ammunition (Select the largest single value)	6

What evidence do you have regarding conventional OEW? There is practice bomb debris scattered over the area.

B. Pyrotechnics (For munitions not described above)

	VALUE
Munition (Container) Containing White Phosphorus (WP) or other Pyrophoric Material (i.e., Spontaneously Flammable)	10
Munitions Containing A Flame or Incendiary Material (i.e., Napalm, Triethylaluminum Metal Incendiaries)	6
Flares, Signals, Simulators, Screening Smokes (other than WP)	4
Pyrotechnics (Select the largest single value)	0

What evidence do you have regarding pyrotechnics? None

C. Bulk High Explosives (Not an integral part of conventional ordnance; uncontainerized.)

	VALUE
Primary or Initiating Explosives (Lead Styphnate, Lead Azide, Nitroglycerin, Mercury Azide, Mercury Fulminate, Tetracene, etc.)	10
Demolition Charges	10
Secondary Explosives (PETN, Compositions A, B, C Tetryl, TNT, RDX, HMX, HBX, Black Powder, etc.)	8
Military Dynamite	6
Less Sensitive Explosives (Ammonium Nitrate, Explosive D, etc.)	3
High Explosives (Select the largest single value)	0

What evidence do you have regarding bulk explosives? None

D. Bulk Propellants (Not an integral part of rockets, guided missiles, or other conventional ordnance; uncontainerized)

	VALUE
Solid or Liquid Propellants	6
Propellants	0

What evidence do you have regarding bulk propellants? None

E. Chemical Warfare Materiel and Radiological Weapons

	VALUE
Toxic Chemical Agents (Choking, Nerve, Blood, Blister)	25
War Gas Identification sets	20
Radiological	15
Riot Control and Miscellaneous (Vomiting, Tear)	5

Chemical and Radiological (Select the largest single value) 0

What evidence do you have regarding chemical/radiological OEW? None

==========

Total Hazard Severity Value
(Sum of the Largest Values for A through E--Maximum of 61). 6

Apply this value to Table 1 to determine Hazard Severity Category.

TABLE 1

HAZARD SEVERITY*

Description	Category	Hazard Severity Value
CATASTROPHIC	I	21 and greater
CRITICAL	II	10 to 20
MARGINAL	(III)	5 to 9
NEGLIGIBLE	IV	1 to 4
**NONE		0

*** Apply Hazard Severity Category to Table 3**

**If Hazard Severity Value is 0, you do not need to complete Part II. Proceed to Part III and use a RAC Score of 5 to determine your appropriate action.

Part II. Hazard Probability. The probability that a hazard has been or will be created due to the presence and other rated factors of unexploded ordnance or explosive materials on a formerly used DOD site.

AREA, EXTENT, ACCESSIBILITY OF OEW HAZARD
(Circle all values that apply)

A. Location of OEW Hazards

	VALUE
On the surface	(5)
Within Tanks, Pipes, Vessels or Other confined locations	4
Inside walls, ceilings, or other parts of Buildings and Structures	3
Subsurface	2

Location (Select the single largest value) 5

What evidence do you have regarding location of OEW? The bomb debris is clearly visible on the ground surface.

B. Distance to nearest inhabited locations or structures likely to be at risk from OEW hazard (roads, parks, playgrounds, and buildings).

	VALUE
Less than 1250 feet	5
1250 feet to 0.5 miles	4
0.5 miles to 1.0 miles	3
1.0 miles to 2.0 miles	2
Over 2 miles	(1)

Distance (Select the single largest value) 1

What are the nearest inhabited structures? This bombing range is in a remote area.

C. Numbers of buildings within a 2 mile radius measured from the OEW hazard area, not the installation boundary.

	VALUE
26 and over	5
16 to 25	4
11 to 15	3
6 to 10	2
1 to 5	1
0	0

Number of Buildings (Select the single largest value) 0

Narrative _____

D. Types of Buildings (within a 2 mile radius)

	VALUE
Educational, Child Care, Residential, Hospitals, Hotels, Commercial, Shopping Centers	5
Industrial, Warehouse, etc.	4
Agricultural, Forestry, etc.	3
Detention, Correctional	2
No Buildings	0

Types of Buildings (Select the largest single value) 0

Describe types of buildings in the area. _____

E. Accessibility to site refers to access by humans to ordnance and explosive wastes. Use the following guidance:

BARRIER	VALUE
No barrier or security system	(5)
Barrier is incomplete (e.g. in disrepair or does not completely surround the site). Barrier is intended to deny egress from the site, as for a barbed wire fence for grazing.	4
A barrier, (any kind of fence in good repair) but no separate means to control entry. Barrier is intended to deny access to the site.	3
Security guard, but no barrier	2
Isolated site	1
A 24-hour surveillance system (e.g., television monitoring or surveillance by guards or facility personnel) which continuously monitors and controls entry onto the facility; or An artificial or natural barrier (e.g., a fence combined with a cliff), which completely surrounds the facility; and a means to control entry, at all times, through the gates, or other entrances to the facility (e.g., an attendant, television monitors, locked entrances, or controlled roadway access to the facility).	0

Accessibility (Select the single largest value) 5

Describe the site accessibility. There is no restriction other than the distance on rough trails to get to the site.

F. Site Dynamics - This deals with site conditions that are subject to change in the future, but may be stable at the present. Examples would be excessive soil erosion by beaches or streams, increasing land development that could reduce distances from the site to inhabited areas or otherwise increase accessibility.

	VALUE
Expected	5
None Anticipated	0

Site Dynamics (Select largest value) 0

Describe the site dynamics. _____

Total Hazard Probability Value
(Sum of Largest Values for A through F--Maximum of 30) 11

Apply this value to Hazard Probability Table 2 to determine Hazard Probability Level.

TABLE 2

HAZARD PROBABILITY

Description	Level	Hazard Probability Value
FREQUENT	A	27 or greater
PROBABLE	B	21 to 26
OCCASIONAL	C	15 to 20
REMOTE	(D)	8 to 14
IMPROBABLE	E	less than 8

*** Apply Hazard Probability Level to Table 3.**

Part III. Risk Assessment. The risk assessment value for this site is determined using the following Table 3. Enter with the results of the hazard probability and hazard severity values.

TABLE 3

Probability Level		FREQUENT A	PROBABLE B	OCCASIONAL C	REMOTE D	IMPROBABLE E
Severity Category:						
CATASTROPHIC	I	1	1	2	3	4
CRITICAL	II	1	2	3	4	5
MARGINAL	III	2	3	4	(4)	5
NEGLIGIBLE	IV	3	4	4	5	5

RISK ASSESSMENT CODE (RAC)

RAC 1 Expedite INPR, recommending further action by CEHND - Immediately call CEHND-ED-SY--commercial (205) 955-4968 or DSN 645-4968.

RAC 2 High priority on completion of INPR - Recommend further action by CEHND.

RAC 3 Complete INPR - Recommend further action by CEHND.

(RAC 4) Complete INPR - Recommend further action by CEHND.

RAC 5 Usually indicates that no further action (NOFA) is necessary. Submit NOFA and RAC to CEHND.

Part IV. Narrative. Summarize the documented evidence that supports this risk assessment. If no documented evidence was available, explain all the assumptions that you made.

We don't think HE rounds were used on this bombing range. There is practice bomb debris scattered over the center of the target, but no evidence of unexploded spotting charges was found. The desert landscape made it easy to see the ground. However, it is possible that an unexploded spotting charge could be found. The site is in remote area.

18 Apr 94

RISK ASSESSMENT PROCEDURE FOR
ORDNANCE AND EXPLOSIVE WASTE (OEW) SITE

Site Name	Victorville PBR #2	Rater's Name	Ted Moore
Site Location	San Bernardino County	Phone No.	(314) 331-8849
DERP Project#	J09CA068601	Organization	CELMS PM-M
Date Completed	4/14/95	RAC Score	2

OEW RISK ASSESSMENT:

This risk assessment procedure was developed in accordance with MIL-STD 882C and AR 385-10. The RAC score will be used by CEHND to prioritize the remedial action at Formerly Used Defense Sites. The OEW risk assessment should be based upon best available information resulting from records searches, reports of Explosive Ordnance Disposal (EOD) detachment actions, and field observations, interviews, and measurements. This information is used to assess the risk involved based upon the potential OEW hazards identified at the site. The risk assessment is composed of two factors, **hazard severity and hazard probability.** Personnel involved in visits to potential OEW sites should view the CEHND videotape entitled "A Life Threatening Encounter, OEW."

Part I. Hazard Severity. Hazard severity categories are defined to provide a qualitative measure of the worst credible mishap resulting from personnel exposure to various types and quantities of unexploded ordnance items.

TYPE OF ORDNANCE
(Circle all values that apply)

A. Conventional Ordnance and Ammunition

	VALUE
Medium/Large Caliber (20mm and larger)	10
Bombs, Explosive	10
Grenades, Hand and Rifle, Explosive	10
Landmines, Explosive	10
Rockets, Guided Missiles, Explosive	10
Detonators, Blasting Caps, Fuzes, Boosters, Bursters	6
Bombs, Practice (w/spotting charges)	(6)
Grenades, Practice (w/spotting charges)	4
Landmines, Practice (w/spotting charges)	4
Small Arms (.22 cal - .50 cal)	1
Conventional Ordnance and Ammunition (Select the largest single value)	6

What evidence do you have regarding conventional OEW? There is practice bomb debris scattered over the area.

B. Pyrotechnics (For munitions not described above)

	VALUE
Munition (Container) Containing White Phosphorus (WP) or other Pyrophoric Material (i.e., Spontaneously Flammable)	10
Munitions Containing A Flame or Incendiary Material (i.e., Napalm, Triethylaluminum Metal Incendiaries)	6
Flares, Signals, Simulators, Screening Smokes (other than WP)	4
Pyrotechnics (Select the largest single value)	0

What evidence do you have regarding pyrotechnics? None

C. Bulk High Explosives (Not an integral part of conventional ordnance; uncontainerized.)

	VALUE
Primary or Initiating Explosives (Lead Styphnate, Lead Azide, Nitroglycerin, Mercury Azide, Mercury Fulminate, Tetracene, etc.)	10
Demolition Charges	10
Secondary Explosives (PETN, Compositions A, B, C Tetryl, TNT, RDX, HMX, HBX, Black Powder, etc.)	8
Military Dynamite	6
Less Sensitive Explosives (Ammonium Nitrate, Explosive D, etc.)	3
High Explosives (Select the largest single value)	0

What evidence do you have regarding bulk explosives? None

D. Bulk Propellants (Not an integral part of rockets, guided missiles, or other conventional ordnance; uncontainerized)

	VALUE
Solid or Liquid Propellants	6
Propellants	0

What evidence do you have regarding bulk propellants? None

E. Chemical Warfare Materiel and Radiological Weapons

	VALUE
Toxic Chemical Agents (Choking, Nerve, Blood, Blister)	25
War Gas Identification sets	20
Radiological	15
Riot Control and Miscellaneous (Vomiting, Tear)	5

Chemical and Radiological (Select the largest single value) 0

What evidence do you have regarding chemical/radiological OEW? None

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Total Hazard Severity Value
(Sum of the Largest Values for A through E--Maximum of 61). 6
Apply this value to Table 1 to determine Hazard Severity Category.

TABLE 1

HAZARD SEVERITY*

Description	Category	Hazard Severity Value
CATASTROPHIC	I	21 and greater
CRITICAL	II	10 to 20
MARGINAL	(III)	5 to 9
NEGLIGIBLE	IV	1 to 4
**NONE		0

*** Apply Hazard Severity Category to Table 3**

**If Hazard Severity Value is 0, you do not need to complete Part II. Proceed to Part III and use a RAC Score of 5 to determine your appropriate action.

Part II. Hazard Probability. The probability that a hazard has been or will be created due to the presence and other rated factors of unexploded ordnance or explosive materials on a formerly used DOD site.

AREA, EXTENT, ACCESSIBILITY OF OEW HAZARD
(Circle all values that apply)

A. Location of OEW Hazards

	VALUE
On the surface	(5)
Within Tanks, Pipes, Vessels or Other confined locations	4
Inside walls, ceilings, or other parts of Buildings and Structures	3
Subsurface	2

Location (Select the single largest value) 5

What evidence do you have regarding location of OEW? The bomb debris is clearly visible on the ground surface.

B. Distance to nearest inhabited locations or structures likely to be at risk from OEW hazard (roads, parks, playgrounds, and buildings).

	VALUE
Less than 1250 feet	(5)
1250 feet to 0.5 miles	4
0.5 miles to 1.0 miles	3
1.0 miles to 2.0 miles	2
Over 2 miles	1

Distance (Select the single largest value) 5

What are the nearest inhabited structures? There is residential development near the center of this bombing target.

C. Numbers of buildings within a 2 mile radius measured from the OEW hazard area, not the installation boundary.

	VALUE
26 and over	(5)
16 to 25	4
11 to 15	3
6 to 10	2
1 to 5	1
0	0

Number of Buildings (Select the single largest value) 5

Narrative This general area has residential development.

D. Types of Buildings (within a 2 mile radius)

	VALUE
Educational, Child Care, Residential, Hospitals, Hotels, Commercial, Shopping Centers	(5)
Industrial, Warehouse, etc.	4
Agricultural, Forestry, etc.	3
Detention, Correctional	2
No Buildings	0

Types of Buildings (Select the largest single value) 5

Describe types of buildings in the area. Residential

E. Accessibility to site refers to access by humans to ordnance and explosive wastes. Use the following guidance:

BARRIER	VALUE
No barrier or security system	(5)
Barrier is incomplete (e.g. in disrepair or does not completely surround the site). Barrier is intended to deny egress from the site, as for a barbed wire fence for grazing.	4
A barrier, (any kind of fence in good repair) but no separate means to control entry. Barrier is intended to deny access to the site.	3
Security guard, but no barrier	2
Isolated site	1
A 24-hour surveillance system (e.g., television monitoring or surveillance by guards or facility personnel) which continuously monitors and controls entry onto the facility; or An artificial or natural barrier (e.g., a fence combined with a cliff), which completely surrounds the facility; and a means to control entry, at all times, through the gates, or other entrances to the facility (e.g., an attendant, television monitors, locked entrances, or controlled roadway access to the facility).	0

Accessibility (Select the single largest value) 5

Describe the site accessibility. There is no restriction.

F. Site Dynamics - This deals with site conditions that are subject to change in the future, but may be stable at the present. Examples would be excessive soil erosion by beaches or streams, increasing land development that could reduce distances from the site to inhabited areas or otherwise increase accessibility.

	VALUE
Expected	(5)
None Anticipated	0

Site Dynamics (Select largest value) 5

Describe the site dynamics. There are many vacant lots available for home construction near the target center.

Total Hazard Probability Value
(Sum of Largest Values for A through F--Maximum of 30) 30

Apply this value to Hazard Probability Table 2 to determine Hazard Probability Level.

TABLE 2

HAZARD PROBABILITY

Description	Level	Hazard Probability Value
FREQUENT	(A)	27 or greater
PROBABLE	B	21 to 26
OCCASIONAL	C	15 to 20
REMOTE	D	8 to 14
IMPROBABLE	E	less than 8

*** Apply Hazard Probability Level to Table 3.**

Part III. Risk Assessment. The risk assessment value for this site is determined using the following Table 3. Enter with the results of the hazard probability and hazard severity values.

TABLE 3

Probability Level		FREQUENT A	PROBABLE B	OCCASIONAL C	REMOTE D	IMPROBABLE E
Severity Category:						
CATASTROPHIC	I	1	1	2	3	4
CRITICAL	II	1	2	3	4	5
MARGINAL	III	(2)	3	4	4	5
NEGLIGIBLE	IV	3	4	4	5	5

RISK ASSESSMENT CODE (RAC)

RAC 1 Expedite INPR, recommending further action by CEHND - Immediately call CEHND-ED-SY--commercial (205) 955-4968 or DSN 645-4968.

(RAC 2) High priority on completion of INPR - Recommend further action by CEHND.

RAC 3 Complete INPR - Recommend further action by CEHND.

RAC 4 Complete INPR - Recommend further action by CEHND.

RAC 5 Usually indicates that no further action (NOFA) is necessary. Submit NOFA and RAC to CEHND.

Part IV. Narrative. Summarize the documented evidence that supports this risk assessment. If no documented evidence was available, explain all the assumptions that you made.

We don't think HE rounds were used on this bombing range. There is practice bomb debris scattered over the center of the target, but no evidence of unexploded spotting charges was found. The desert landscape made it easy to see the ground. However, it is possible that an unexploded spotting charge could be found. The site and general area have significant residential development.

18 Apr 94

RISK ASSESSMENT PROCEDURE FOR
ORDNANCE AND EXPLOSIVE WASTE (OEW) SITE

Site Name	Victorville PBR #7	Rater's Name	Ted Moore
Site Location	San Bernardino County	Phone No.	(314) 331-8849
DERP Project#	J09CA069201	Organization	CELMS PM-M
Date Completed	4/14/95	RAC Score	3

OEW RISK ASSESSMENT:

This risk assessment procedure was developed in accordance with MIL-STD 882C and AR 385-10. The RAC score will be used by CEHND to prioritize the remedial action at Formerly Used Defense Sites. The OEW risk assessment should be based upon best available information resulting from records searches, reports of Explosive Ordnance Disposal (EOD) detachment actions, and field observations, interviews, and measurements. This information is used to assess the risk involved based upon the potential OEW hazards identified at the site. The risk assessment is composed of two factors, **hazard severity and hazard probability.** Personnel involved in visits to potential OEW sites should view the CEHND videotape entitled "A Life Threatening Encounter, OEW."

Part I. Hazard Severity. Hazard severity categories are defined to provide a qualitative measure of the worst credible mishap resulting from personnel exposure to various types and quantities of unexploded ordnance items.

TYPE OF ORDNANCE
(Circle all values that apply)

A. Conventional Ordnance and Ammunition

	VALUE
Medium/Large Caliber (20mm and larger)	10
Bombs, Explosive	10
Grenades, Hand and Rifle, Explosive	10
Landmines, Explosive	10
Rockets, Guided Missiles, Explosive	10
Detonators, Blasting Caps, Fuzes, Boosters, Bursters	6
Bombs, Practice (w/spotting charges)	(6)
Grenades, Practice (w/spotting charges)	4
Landmines, Practice (w/spotting charges)	4
Small Arms (.22 cal - .50 cal)	1
Conventional Ordnance and Ammunition (Select the largest single value)	6

What evidence do you have regarding conventional OEW? There is practice bomb debris scattered over the area.

B. Pyrotechnics (For munitions not described above)

	VALUE
Munition (Container) Containing White Phosphorus (WP) or other Pyrophoric Material (i.e., Spontaneously Flammable)	10
Munitions Containing A Flame or Incendiary Material (i.e., Napalm, Triethylaluminum Metal Incendiaries)	6
Flares, Signals, Simulators, Screening Smokes (other than WP)	4
Pyrotechnics (Select the largest single value)	0

What evidence do you have regarding pyrotechnics? None

C. Bulk High Explosives (Not an integral part of conventional ordnance; uncontainerized.)

	VALUE
Primary or Initiating Explosives (Lead Styphnate, Lead Azide, Nitroglycerin, Mercury Azide, Mercury Fulminate, Tetracene, etc.)	10
Demolition Charges	10
Secondary Explosives (PETN, Compositions A, B, C Tetryl, TNT, RDX, HMX, HBX, Black Powder, etc.)	8
Military Dynamite	6
Less Sensitive Explosives (Ammonium Nitrate, Explosive D, etc.)	3
High Explosives (Select the largest single value)	0

What evidence do you have regarding bulk explosives? None

D. Bulk Propellants (Not an integral part of rockets, guided missiles, or other conventional ordnance; uncontainerized)

	VALUE
Solid or Liquid Propellants	6
Propellants	0

What evidence do you have regarding bulk propellants? None

E. Chemical Warfare Materiel and Radiological Weapons

	VALUE
Toxic Chemical Agents (Choking, Nerve, Blood, Blister)	25
War Gas Identification sets	20
Radiological	15
Riot Control and Miscellaneous (Vomiting, Tear)	5

Chemical and Radiological (Select the largest single value) 0

What evidence do you have regarding chemical/radiological OEW? None

==========

Total Hazard Severity Value
(Sum of the Largest Values for A through E--Maximum of 61). 6
Apply this value to Table 1 to determine Hazard Severity Category.

TABLE 1

HAZARD SEVERITY*

Description	Category	Hazard Severity Value
CATASTROPHIC	I	21 and greater
CRITICAL	II	10 to 20
MARGINAL	(III)	5 to 9
NEGLIGIBLE	IV	1 to 4
**NONE		0

*** Apply Hazard Severity Category to Table 3**

**If Hazard Severity Value is 0, you do not need to complete Part II. Proceed to Part III and use a RAC Score of 5 to determine your appropriate action.

Part II. Hazard Probability. The probability that a hazard has been or will be created due to the presence and other rated factors of unexploded ordnance or explosive materials on a formerly used DOD site.

AREA, EXTENT, ACCESSIBILITY OF OEW HAZARD
(Circle all values that apply)

A. Location of OEW Hazards

	VALUE
On the surface	(5)
Within Tanks, Pipes, Vessels or Other confined locations	4
Inside walls, ceilings, or other parts of Buildings and Structures	3
Subsurface	2
Location (Select the single largest value)	5

What evidence do you have regarding location of OEW? The bomb debris is clearly visible on the ground surface.

B. Distance to nearest inhabited locations or structures likely to be at risk from OEW hazard (roads, parks, playgrounds, and buildings).

	VALUE
Less than 1250 feet	5
1250 feet to 0.5 miles	4
0.5 miles to 1.0 miles	(3)
1.0 miles to 2.0 miles	2
Over 2 miles	1
Distance (Select the single largest value)	3

What are the nearest inhabited structures? There is residential development about 1/2 mile north and south of the target center.

C. Numbers of buildings within a 2 mile radius measured from the OEW hazard area, not the installation boundary.

	VALUE
26 and over	5
16 to 25	4
11 to 15	3
6 to 10	(2)
1 to 5	1
0	0

Number of Buildings (Select the single largest value) 2

Narrative This general area has residential development.

D. Types of Buildings (within a 2 mile radius)

	VALUE
Educational, Child Care, Residential, Hospitals, Hotels, Commercial, Shopping Centers	(5)
Industrial, Warehouse, etc.	4
Agricultural, Forestry, etc.	3
Detention, Correctional	2
No Buildings	0

Types of Buildings (Select the largest single value) 5

Describe types of buildings in the area. Residential

E. Accessibility to site refers to access by humans to ordnance and explosive wastes. Use the following guidance:

BARRIER	VALUE
No barrier or security system	(5)
Barrier is incomplete (e.g. in disrepair or does not completely surround the site). Barrier is intended to deny egress from the site, as for a barbed wire fence for grazing.	4
A barrier, (any kind of fence in good repair) but no separate means to control entry. Barrier is intended to deny access to the site.	3
Security guard, but no barrier	2
Isolated site	1
A 24-hour surveillance system (e.g., television monitoring or surveillance by guards or facility personnel) which continuously monitors and controls entry onto the facility; or An artificial or natural barrier (e.g., a fence combined with a cliff), which completely surrounds the facility; and a means to control entry, at all times, through the gates, or other entrances to the facility (e.g., an attendant, television monitors, locked entrances, or controlled roadway access to the facility).	0

Accessibility (Select the single largest value) 5

Describe the site accessibility. There is no restriction.

F. Site Dynamics - This deals with site conditions that are subject to change in the future, but may be stable at the present. Examples would be excessive soil erosion by beaches or streams, increasing land development that could reduce distances from the site to inhabited areas or otherwise increase accessibility.

	VALUE
Expected	(5)
None Anticipated	0

Site Dynamics (Select largest value) 5

Describe the site dynamics. There are many vacant lots available for home construction near the target center and general area.

Total Hazard Probability Value
(Sum of Largest Values for A through F--Maximum of 30) 25

Apply this value to Hazard Probability Table 2 to determine Hazard Probability Level.

TABLE 2

HAZARD PROBABILITY

Description	Level	Hazard Probability Value
FREQUENT	A	27 or greater
PROBABLE	(B)	21 to 26
OCCASIONAL	C	15 to 20
REMOTE	D	8 to 14
IMPROBABLE	E	less than 8

*** Apply Hazard Probability Level to Table 3.**

Part III. Risk Assessment. The risk assessment value for this site is determined using the following Table 3. Enter with the results of the hazard probability and hazard severity values.

TABLE 3

Probability Level		FREQUENT A	PROBABLE B	OCCASIONAL C	REMOTE D	IMPROBABLE E
Severity Category:						
CATASTROPHIC	I	1	1	2	3	4
CRITICAL	II	1	2	3	4	5
MARGINAL	III	2	(3)	4	4	5
NEGLIGIBLE	IV	3	4	4	5	5

RISK ASSESSMENT CODE (RAC)

RAC 1 Expedite INPR, recommending further action by CEHND - Immediately call CEHND-ED-SY--commercial (205) 955-4968 or DSN 645-4968.

RAC 2 High priority on completion of INPR - Recommend further action by CEHND.

(RAC 3) Complete INPR - Recommend further action by CEHND.

RAC 4 Complete INPR - Recommend further action by CEHND.

RAC 5 Usually indicates that no further action (NOFA) is necessary. Submit NOFA and RAC to CEHND.

Part IV. Narrative. Summarize the documented evidence that supports this risk assessment. If no documented evidence was available, explain all the assumptions that you made.

We don't think HE rounds were used on this bombing range. There is practice bomb debris scattered over the center of the target, but no evidence of unexploded spotting charges was found. The desert landscape made it easy to see the ground. However, it is possible that an unexploded spotting charge could be found. The site has no development but the general area has residential development.

18 Apr 94

RISK ASSESSMENT PROCEDURE FOR ORDNANCE AND EXPLOSIVE WASTE (OEW) SITE

Site Name	Victorville PBR #8	Rater's Name	Ted Moore
Site Location	San Bernardino County	Phone No.	(314) 331-8849
DERP Project#	J09CA069301	Organization	CELMS PM-M
Date Completed	4/14/95	RAC Score	2

OEW RISK ASSESSMENT:

This risk assessment procedure was developed in accordance with MIL-STD 882C and AR 385-10. The RAC score will be used by CEHND to prioritize the remedial action at Formerly Used Defense Sites. The OEW risk assessment should be based upon best available information resulting from records searches, reports of Explosive Ordnance Disposal (EOD) detachment actions, and field observations, interviews, and measurements. This information is used to assess the risk involved based upon the potential OEW hazards identified at the site. The risk assessment is composed of two factors, **hazard severity and hazard probability.** Personnel involved in visits to potential OEW sites should view the CEHND videotape entitled "A Life Threatening Encounter, OEW."

Part I. Hazard Severity. Hazard severity categories are defined to provide a qualitative measure of the worst credible mishap resulting from personnel exposure to various types and quantities of unexploded ordnance items.

TYPE OF ORDNANCE
(Circle all values that apply)

A. Conventional Ordnance and Ammunition

	VALUE
Medium/Large Caliber (20mm and larger)	10
Bombs, Explosive	10
Grenades, Hand and Rifle, Explosive	10
Landmines, Explosive	10
Rockets, Guided Missiles, Explosive	10
Detonators, Blasting Caps, Fuzes, Boosters, Bursters	6
Bombs, Practice (w/spotting charges)	(6)
Grenades, Practice (w/spotting charges)	4
Landmines, Practice (w/spotting charges)	4
Small Arms (.22 cal - .50 cal)	1

Conventional Ordnance and Ammunition (Select the largest single value) 6

What evidence do you have regarding conventional OEW? There is practice bomb debris scattered over the area.

B. Pyrotechnics (For munitions not described above)

	VALUE
Munition (Container) Containing White Phosphorus (WP) or other Pyrophoric Material (i.e., Spontaneously Flammable)	10
Munitions Containing A Flame or Incendiary Material (i.e., Napalm, Triethylaluminum Metal Incendiaries)	6
Flares, Signals, Simulators, Screening Smokes (other than WP)	4
Pyrotechnics (Select the largest single value)	0

What evidence do you have regarding pyrotechnics? None

C. Bulk High Explosives (Not an integral part of conventional ordnance; uncontainerized.)

	VALUE
Primary or Initiating Explosives (Lead Styphnate, Lead Azide, Nitroglycerin, Mercury Azide, Mercury Fulminate, Tetracene, etc.)	10
Demolition Charges	10
Secondary Explosives (PETN, Compositions A, B, C Tetryl, TNT, RDX, HMX, HBX, Black Powder, etc.)	8
Military Dynamite	6
Less Sensitive Explosives (Ammonium Nitrate, Explosive D, etc.)	3
High Explosives (Select the largest single value)	0

What evidence do you have regarding bulk explosives? None

D. Bulk Propellants (Not an integral part of rockets, guided missiles, or other conventional ordnance; uncontainerized)

	VALUE
Solid or Liquid Propellants	6
Propellants	0

What evidence do you have regarding bulk propellants? None

E. Chemical Warfare Materiel and Radiological Weapons

	VALUE
Toxic Chemical Agents (Choking, Nerve, Blood, Blister)	25
War Gas Identification sets	20
Radiological	15
Riot Control and Miscellaneous (Vomiting, Tear)	5

Chemical and Radiological (Select the largest single value) 0

What evidence do you have regarding chemical/radiological OEW? None

==========

Total Hazard Severity Value
(Sum of the Largest Values for A through E--Maximum of 61). 6
Apply this value to Table 1 to determine Hazard Severity Category.

TABLE 1

HAZARD SEVERITY*

Description	Category	Hazard Severity Value
CATASTROPHIC	I	21 and greater
CRITICAL	II	10 to 20
MARGINAL	(III)	5 to 9
NEGLIGIBLE	IV	1 to 4
**NONE		0

*** Apply Hazard Severity Category to Table 3**

**If Hazard Severity Value is 0, you do not need to complete Part II. Proceed to Part III and use a RAC Score of 5 to determine your appropriate action.

Part II. Hazard Probability. The probability that a hazard has been or will be created due to the presence and other rated factors of unexploded ordnance or explosive materials on a formerly used DOD site.

AREA, EXTENT, ACCESSIBILITY OF OEW HAZARD
(Circle all values that apply)

A. Location of OEW Hazards

	VALUE
On the surface	(5)
Within Tanks, Pipes, Vessels or Other confined locations	4
Inside walls, ceilings, or other parts of Buildings and Structures	3
Subsurface	2
Location (Select the single largest value)	5

What evidence do you have regarding location of OEW? The bomb debris is clearly visible on the ground surface.

B. Distance to nearest inhabited locations or structures likely to be at risk from OEW hazard (roads, parks, playgrounds, and buildings).

	VALUE
Less than 1250 feet	(5)
1250 feet to 0.5 miles	4
0.5 miles to 1.0 miles	3
1.0 miles to 2.0 miles	2
Over 2 miles	1
Distance (Select the single largest value)	5

What are the nearest inhabited structures? There is residential development near the center of this bombing target.

C. Numbers of buildings within a 2 mile radius measured from the OEW hazard area, not the installation boundary.

	VALUE
26 and over	(5)
16 to 25	4
11 to 15	3
6 to 10	2
1 to 5	1
0	0

Number of Buildings (Select the single largest value) 5

Narrative This general area has residential development.

D. Types of Buildings (within a 2 mile radius)

	VALUE
Educational, Child Care, Residential, Hospitals, Hotels, Commercial, Shopping Centers	(5)
Industrial, Warehouse, etc.	4
Agricultural, Forestry, etc.	3
Detention, Correctional	2
No Buildings	0

Types of Buildings (Select the largest single value) 5

Describe types of buildings in the area. Residential

E. Accessibility to site refers to access by humans to ordnance and explosive wastes. Use the following guidance:

BARRIER	VALUE
No barrier or security system	(5)
Barrier is incomplete (e.g. in disrepair or does not completely surround the site). Barrier is intended to deny egress from the site, as for a barbed wire fence for grazing.	4
A barrier, (any kind of fence in good repair) but no separate means to control entry. Barrier is intended to deny access to the site.	3
Security guard, but no barrier	2
Isolated site	1
A 24-hour surveillance system (e.g., television monitoring or surveillance by guards or facility personnel) which continuously monitors and controls entry onto the facility; or An artificial or natural barrier (e.g., a fence combined with a cliff), which completely surrounds the facility; and a means to control entry, at all times, through the gates, or other entrances to the facility (e.g., an attendant, television monitors, locked entrances, or controlled roadway access to the facility).	0

Accessibility (Select the single largest value) 5

Describe the site accessibility. There is no restriction.

F. Site Dynamics - This deals with site conditions that are subject to change in the future, but may be stable at the present. Examples would be excessive soil erosion by beaches or streams, increasing land development that could reduce distances from the site to inhabited areas or otherwise increase accessibility.

	VALUE
Expected	(5)
None Anticipated	0

Site Dynamics (Select largest value) 5

Describe the site dynamics. There are many vacant lots available for home construction near the target center.

Total Hazard Probability Value
(Sum of Largest Values for A through F--Maximum of 30) 30

Apply this value to Hazard Probability Table 2 to determine Hazard Probability Level.

TABLE 2

HAZARD PROBABILITY

Description	Level	Hazard Probability Value
FREQUENT	(A)	27 or greater
PROBABLE	B	21 to 26
OCCASIONAL	C	15 to 20
REMOTE	D	8 to 14
IMPROBABLE	E	less than 8

*** Apply Hazard Probability Level to Table 3.**

Part III. Risk Assessment. The risk assessment value for this site is determined using the following Table 3. Enter with the results of the hazard probability and hazard severity values.

TABLE 3

Probability Level		FREQUENT A	PROBABLE B	OCCASIONAL C	REMOTE D	IMPROBABLE E
Severity Category:						
CATASTROPHIC	I	1	1	2	3	4
CRITICAL	II	1	2	3	4	5
MARGINAL	III	(2)	3	4	4	5
NEGLIGIBLE	IV	3	4	4	5	5

RISK ASSESSMENT CODE (RAC)

RAC 1 Expedite INPR, recommending further action by CEHND - Immediately call CEHND-ED-SY--commercial (205) 955-4968 or DSN 645-4968.

(RAC 2) High priority on completion of INPR - Recommend further action by CEHND.

RAC 3 Complete INPR - Recommend further action by CEHND.

RAC 4 Complete INPR - Recommend further action by CEHND.

RAC 5 Usually indicates that no further action (NOFA) is necessary. Submit NOFA and RAC to CEHND.

Part IV. Narrative. Summarize the documented evidence that supports this risk assessment. If no documented evidence was available, explain all the assumptions that you made.

We don't think HE rounds were used on this bombing range. There is practice bomb debris scattered over the center of the target, but no evidence of unexploded spotting charges was found. The desert landscape made it easy to see the ground. However, it is possible that an unexploded spotting charge could be found. The site and general area have significant residential development.

APPENDIX J

REPORT DISTRIBUTION LIST

ORDNANCE AND EXPLOSIVE WASTE
CHEMICAL WARFARE MATERIALS
ARCHIVES SEARCH REPORT
FOR
VICTORVILLE PBR N-1, PBR #2, PBR #7 AND PBR #8
SAN BERNARDINO COUNTY, CALIFORNIA

DERP-FUDS PROJECT NUMBERS J09CA067201, J09CA068601, J09CA069201, AND J09CA069301

APPENDIX J

REPORT DISTRIBUTION LIST

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APPENDIX K

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