

Decision Document

Solid Waste Management Unit B-07
Building 101-1 East Catchment Pit
Hawthorne Army Depot
Hawthorne, Nevada



October 2001



Hawthorne Army
Depot



Decision Document SWMU B-07

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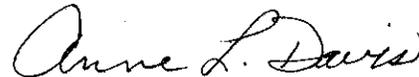
October 2001

ENVIRONMENTAL PROTECTION

The selected remedy is protective of human health and the environment. It has been shown that a complete pathway to human health and the environment does not exist, and there is no potential for an exposure pathway to be completed in the future.

U.S. Army

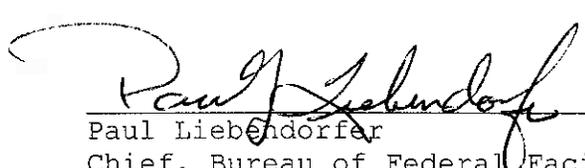
13 NOV 2001



Anne L. Davis
Lieutenant Colonel, U.S. Army
Commanding

State of Nevada

30 Nov 2001



Paul Liebendorfer
Chief, Bureau of Federal Facilities

Decision Document

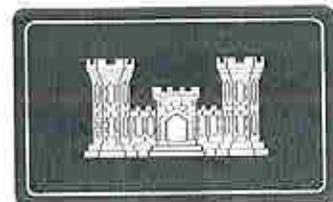
Solid Waste Management Unit B-07
Building 101-1 East Catchment Pit
Hawthorne Army Depot
Hawthorne, Nevada



October 2001



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Depot



Decision Document
SWMU B-07
Building 101-1 East Catchment Pit
Hawthorne Army Depot
Hawthorne, Nevada

1.0 Introduction:

This decision document describes the rationale for the proposed closure of SWMU B-07, building 101-1 East catchment pit, at the Hawthorne Army Depot (HWAD), Hawthorne, Nevada. The U.S. Army Corps of Engineers, Sacramento District, prepared this document with the help of HWAD for the Nevada Department of Environmental Protection (NDEP).

Tetra Tech, Inc. (Tt), and Ecology and Environment (E&E) were tasked by the US Army Corps of Engineers, Sacramento District (USACE), to perform remedial investigations and ground water monitoring at the Hawthorne Army Depot (HWAD), Hawthorne, Nevada. These tasks were conducted from 1993 through 1997, primarily at solid waste management units (SWMUs) designated by the Army and the Nevada Division of Environmental Protection (NDEP). The NDEP is the lead regulatory agency for environmental issues at HWAD. The purpose of the sampling was to determine the extent and degree of environmental impacts, if any, associated with activities performed at each SWMU. The primary goal of the investigation was to assess the environmental impacts and to report the findings, present conclusions, and recommend any remediation, if necessary.

With guidance from the NDEP, basewide proposed closure goals (PCGs) for soil were established as acceptable levels so that SWMU closure could be recommended and to assist in directing the investigative efforts toward those SWMUs where the target analytes were of greatest concern (Appendix A). These PCGs were used as action levels throughout this investigation and are used for comparison with the detected analytes in this report.

2.0 Site History

SWMU B-07 is in HWAD's central magazine area, on the southwest side of the 101 Production Area (Figure 1-1). This SWMU is an inactive unlined catchment pit 90 feet southeast of Building 101-1 (Figure 1-2). The catchment pit is irregular shaped, measuring approximately 15 feet by 12 feet, and is four feet deep, although it is partially filled with windblown sand and the side walls are heavily eroded. No discharge pipes are visible in the catchment pit.

The USACE, HWAD, and the NDEP agreed to define the boundaries of each SWMU using annotated monuments and survey pins. As part of E&E's 1997 field investigations, a survey monument was constructed and surveyed at SWMU B-07. A brass survey pin on

the monument designates the monument number HWAAP-74-1996 and the SWMU number B-07. Three corner pins were set and surveyed to define a SWMU boundary with the monument as the northwest corner. The location of these corner markers and the SWMU boundary is shown on Figure 1-2. Survey data is presented in Appendix B.

The USAEHA estimated the depth to groundwater in the vicinity of SWMU B-07 at approximately 120 feet below ground surface (bgs) in Tt 1997-2001.

3.0 Site Conditions

The SWMU B-07 catchment pit reportedly was in operation from 1940 to the early 1970s and reportedly received reactive hazardous wastewater primarily containing the explosive chemicals 2,4,6-trinitrotoluene (TNT) and cyclotrimethylenetrinitramine (RDX). It was also reported that munitions handled in the 101 Production Area contained metal components and therefore, metals may have been released at this SWMU. Visible evidence of TNT-stained soils in the catchment pit was noted during the USAEHA survey (USAEHA 1988).

Based on the past uses of the pit and on observations made during the previous site inspections, the target analytes at this SWMU are known to be explosives and metals.

4.0 Investigations

Site inspections of SWMU B-07 were conducted by the USAEHA (1988), Jacobs Engineering (1988), and RAI (1992). During these inspections, stained soil was noted in the catchment pit. No investigation activities were conducted during these inspections, and no samples were collected from the SWMU at that time.

In 1994, sampling activities proposed by E&E for the remedial investigation at SWMU B-07 included collecting and analyzing surface and subsurface soil samples, and sampling the ground water by hydro punch. One surface soil sample and two near-surface samples were collected at one hand auger location (HA01) within the catchment pit, for a total of three samples. The CPT investigation of SWMU B-07 was performed adjacent to and on the down gradient side of the catchment pit. One CPT sounding boring and one CPT sampling boring were advanced adjacent to the catchment pit at location CPS01, shown on Figure 3-1. The total depth of the sounding was 64 feet bgs, and ground water was not encountered. Three subsurface soil samples were collected from the CPT boring at SWMU B-07. These soil sample intervals were selected from the top 18 inches of fine-grained horizons at depths of 31, 39.5, and 43 feet bgs.

Prior to execution of the December 1997 RI recommendation to fill the open pit, the Corps of Engineers final review indicated that additional sampling was necessary to evaluate the stained soil observed in previous investigations for the potential to contain elevated levels of explosives. The Corps of Engineers conducted the sampling in March 1999. When the stained soil in the SWMU proved not to be TNT contamination it was

decided to conduct confirmation sampling at the SWMU (fig 4). The sampling was completed by the Corps of Engineers in March 1999.

5.0 Investigation Results

Arsenic (2.2 mg/kg to 11 mg/kg), barium (54 mg/kg to 120 mg/kg), cadmium (1.8 mg/kg to 5.6 mg/kg), total chromium (4.1 mg/kg to 11 mg/kg), and lead (2.3 mg/kg to 24 mg/kg) were detected at low concentrations in the surface and near-surface soil samples collected within the catchment pit. In addition, 4-amino-2, 6-DNT, octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX), and RDX were detected in the sample collected from a depth of five feet beneath the catchment pit at concentrations of 0.5 mg/kg (0.54 mg/kg duplicate), 3.2 mg/kg (3.0 mg/kg duplicate), and 12 mg/kg (16 mg/kg duplicate), respectively. No other metals or explosives were detected in the surface or near-surface samples collected at this SWMU.

With the exception of cadmium and beryllium, the same metals detected in the surface and near-surface samples also were detected at the same order of magnitude in the subsurface samples. Cadmium was not detected in any of the subsurface samples. Beryllium was detected in two samples collected from depths of 31 and 40 feet bgs at 0.73 mg/kg and 0.67 mg/kg, respectively. No explosives were detected in any of these subsurface samples. The investigation sampling results are shown in appendix C

The Corps of Engineers sampling results are shown in appendix D. One sample returned a RDX result of 599 ppm (CS07-SA-01) which was in excess of the PCG's of 64mg/Kg the other six samples had explosives levels below PCG's. In August of 1999, Tt conducted limited excavation in this area and collected confirmation sample B07-020E020S-02A (Appendix D). DZHC filled that pit area of the SWMU with clean soil.

6.0 Remediation

The one grid area with the RDX contamination was excavated two feet deep by Tt in June 2000. The area was resampled and the excavated soil treated. The explosives contaminated soil from SWMU B-07 was treated by windrow composting. Composting is a natural process in which microorganisms biologically degrade organic material. For the destruction of the explosives contamination temperatures in the compost must reach between 120° F — 160° F and the system must remain in aerobic conditions. The windrow system of composting was selected as the most efficient and economical to be used at the site. Ninety cubic yards of contaminated soil was removed from B-07 and placed in compost windrows. Confirmation samples, from the excavated area (B-07-020E020S-02A) and finished compost, were taken in accordance with the project work plan.

7.0 Remediation Results

Contaminated soil from B-07 was placed into one windrow at remediation pad 3 (windrow 5). After the treatment process the windrows were sampled for explosives and

the test results are shown in appendix D. All finished compost samples had explosives levels below clean up goals and the confirmation sample from the SWMU had a result below excavation goals. The location of the confirmation samples taken in the B-07 excavation area are shown in figure 4 with the analytical results of these tests also shown in appendix D.

8.0 Public Involvement

It is the U.S. Department of Defense and Army policy to involve the local community throughout the investigation process at an installation. To initiate this involvement, HWAD has established and maintains a repository library at the local public library. This repository includes final copies of all past studies and other documents regarding environmental issues at HWAD. As future environmental documents are made available to HWAD the repository shall be updated.

HWAD has solicited community participation in establishment of a restoration and advisory board (RAB). To date there has been insufficient response and HWAD has not formed a RAB. HWAD has held open houses to inform the public of on going environmental issues. HWAD shall continue to solicit community involvement, and will establish a RAB should sufficient community interest be obtained.

9.0 Conclusions

The contaminated soil has been removed from SWMU B-07 and has been treated in the composting windrows to levels below clean up goals. SWMU B-07 should be closed with the restrictions that no structure be constructed on the SWMU, that the site remain only for industrial use and documented on the depot site master plan.

Will

10.0 REFERENCES

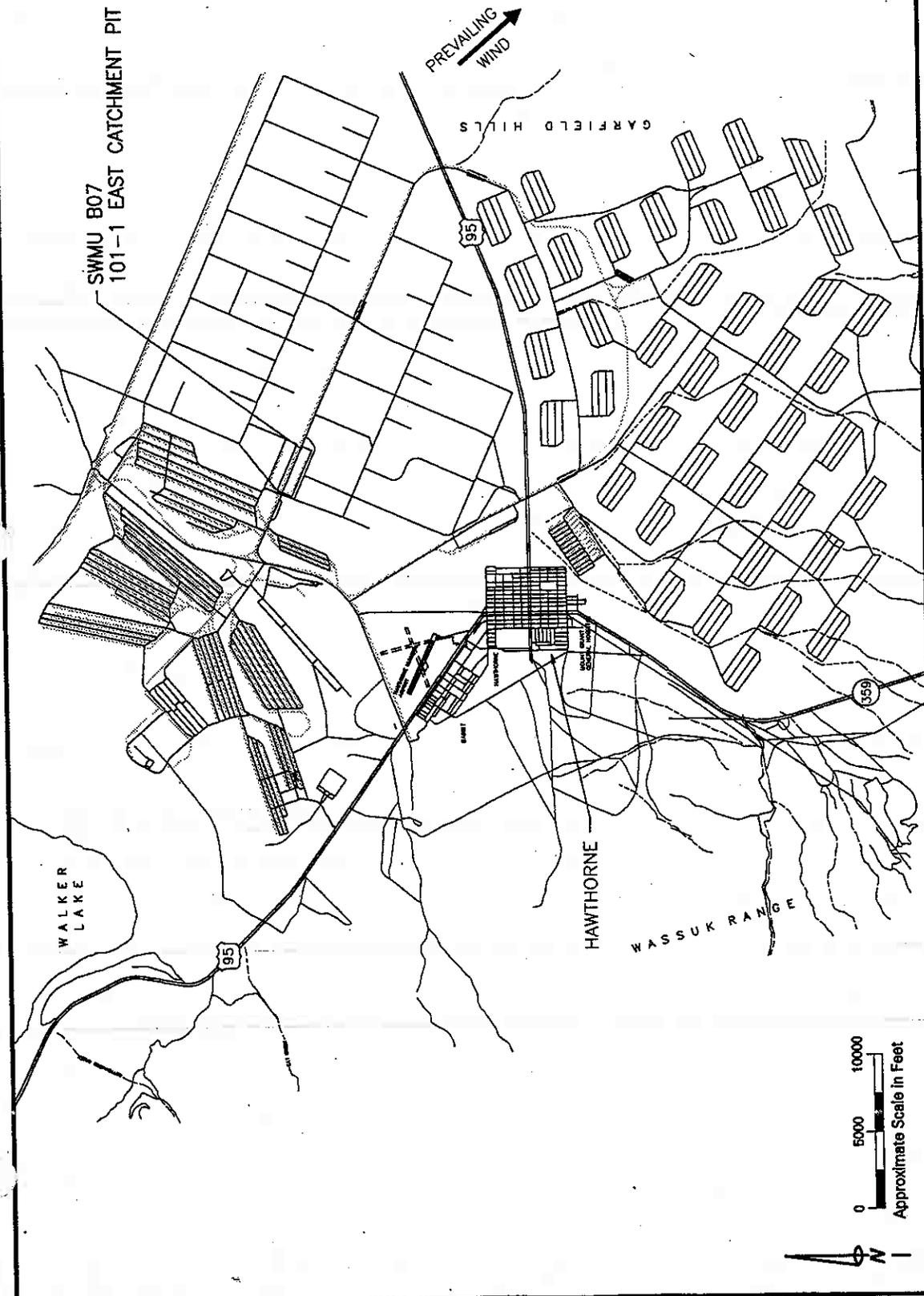
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_____. 1996. Region IX Preliminary Remediation Goals. USEPA Region IX. August 1996.

WaterWork. 1990. Hawthorne Army Ammunition Plant, Area 101 Surface Impoundments, Field and Lab Data and Analysis, Attachment 1-8.



SOURCE: TETRA TECH FINAL DATA PACKAGE, 1996 (REV. 1997)

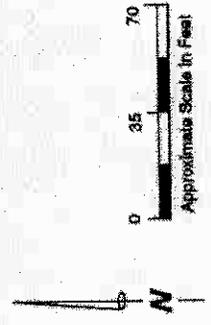
Location Map
SWMU B07
101-1 East Catchment Pit

Hawthorne Army Depot
 Hawthorne, Nevada

Figure 1-1



Site Map
SWMU B07
101-1 East Catchment Pit
 Hawthorne Army Depot
 Hawthorne, Nevada
Figure 1-2



- Legend:**
- Boundary Corner Pin
 - Explosion Barrier
 - Fence
 - Railroad
 - SWMU Monument

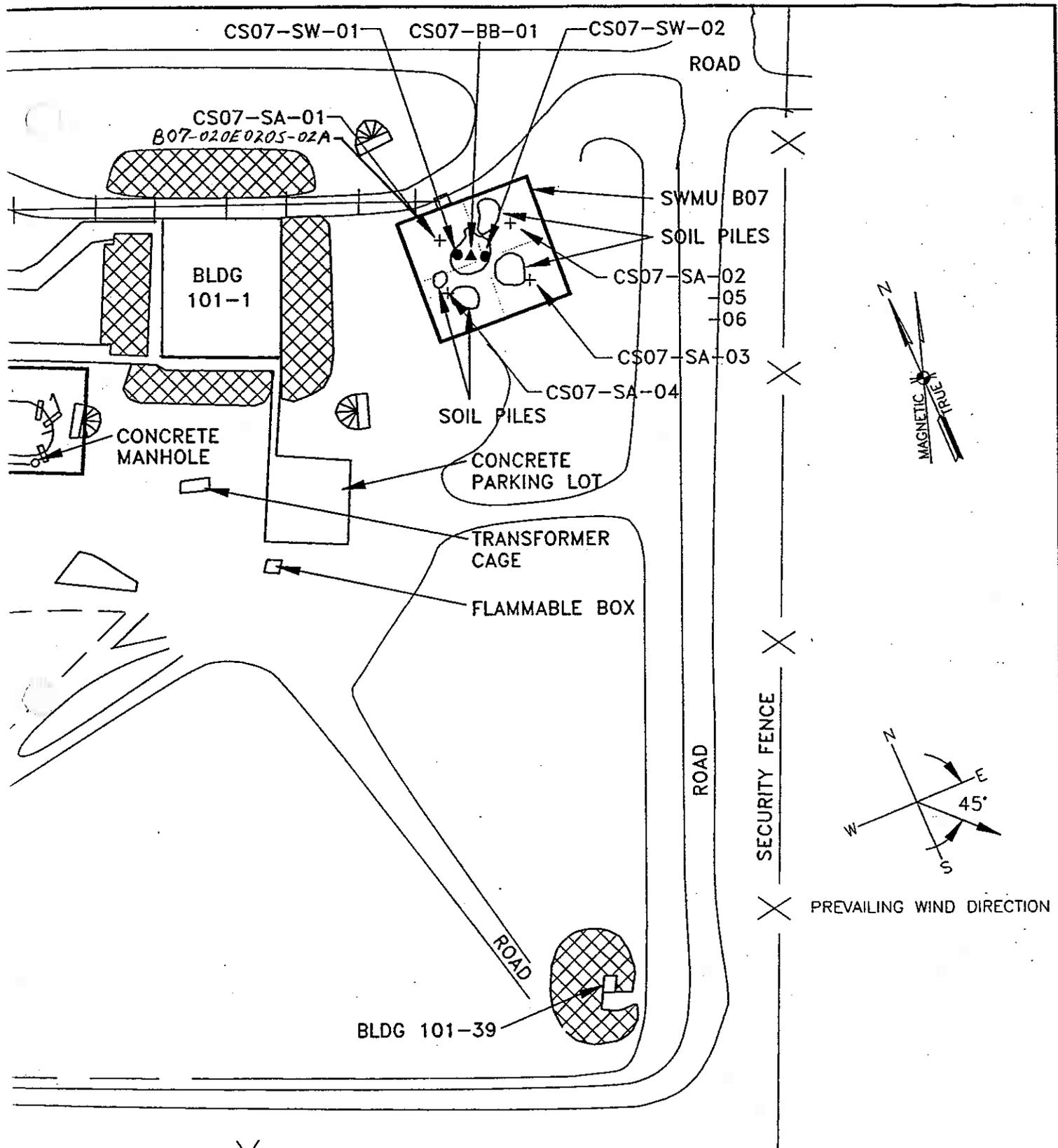
Source: HWAAP-74-1996



Investigation Activity Map
SWMU B07
101-1 East Catchment Pit
 Hawthorne Army Depot
 Hawthorne, Nevada
Figure 3-1



- Legend:**
- Boundary Corner Pin
 - Hand Auger Location
 - Soil Boring Location
 - Explosion Barrier
 - Fence
 - Railroad
 - SWMU Monument



GRAPHIC SCALE: 1"=100'



DEPARTMENT OF THE ARMY
SACRAMENTO DISTRICT,
CORPS OF ENGINEERS
MARCH 1999

HAWTHORNE

NEVADA

HAWTHORNE ARMY DEPOT
WEST 101 PRODUCTION AREA
SITE MAP (AREA 4)

SCALE:

1" = 100'

FIGURE:

4

Appendix A

Proposed Closure Goals
Hawthorne Army Depot
Hawthorne, Nevada

| Constituent of Concern | Chemical Classification | Carcinogenic (C) or Non-carcinogenic (NC) | HWAD Proposed Closure Goals for SCh (mg/kg) | HWAD Proposed Closure Goal Source |
|--|-------------------------|---|---|-----------------------------------|
| Nitrate | Anion | NC | 128,000 | Calculated Subpart S ¹ |
| 2-Amino-dinitrotoluene | Explosive | NC | - | NA ² |
| 4-Amino-dinitrotoluene | Explosive | NC | - | NA |
| 1,3-Dinitrobenzene | Explosive | NC | 8 | Calculated Subpart S |
| 2,4-Dinitrotoluene | Explosive | NC | 160 | Calculated Subpart S |
| 2,6-Dinitrotoluene | Explosive | NC | 80 | Calculated Subpart S |
| HMX | Explosive | NC | 4,000 | Calculated Subpart S |
| Nitrobenzene | Explosive | NC | 40 | Calculated Subpart S |
| Nitrotoluene (2-, 3-, 4-) | Explosive | NC | 800 | Calculated Subpart S |
| RDX | Explosive | NC | 64 | Calculated Subpart S |
| Tetryl | Explosive | NC | 800 | Calculated Subpart S |
| 1,3,5-Trinitrobenzene | Explosive | NC | 4 | Calculated Subpart S |
| 2,4,6-Trinitrotoluene | Explosive | C | 233 | Calculated Subpart S |
| Aluminum | Metal | NC | 80,000 | Calculated Subpart S |
| Arsenic (cancer endpoint) | Metal | C & NC | 30 | Background ³ |
| Barium and compounds | Metal | NC | 5,600 | Calculated Subpart S |
| Beryllium and compounds | Metal | C | 1 | Background |
| Cadmium and compounds | Metal | NC | 40 | Calculated Subpart S |
| Chromium III and compounds | Metal | NC | 80,000 | Calculated Subpart S |
| Lead | Metal | NC | 1000 | PRG ⁴ |
| Mercury and compounds (inorganic) | Metal | NC | 24 | Calculated Subpart S |
| Selenium | Metal | NC | 400 | Calculated Subpart S |
| Silver and compounds | Metal | NC | 400 | Calculated Subpart S |
| Acenaphthene | PAH | NC | 4,800 | Calculated Subpart S |
| Benzo[a]anthracene | PAH | C | 0.95 | Calculated Subpart S |
| Benzo[a]pyrene | PAH | C | 0.10 | Detection Limit ⁵ |
| Benzo[b]fluoranthene | PAH | C | 0.95 | Calculated Subpart S |
| Benzo[k]fluoranthene | PAH | C | 10 | Calculated Subpart S |
| Chrysene | PAH | C | 95 | Calculated Subpart S |
| Dibenz[ah]anthracene | PAH | C | 0.95 | Calculated Subpart S |
| Fluoranthene | PAH | NC | 3,200 | Calculated Subpart S |
| Fluorene | PAH | NC | 3,200 | Calculated Subpart S |
| Indeno[1,2,3-cd]pyrene | PAH | C | - | NA |
| Naphthalene | PAH | NC | 3,200 | Calculated Subpart S |
| Pyrene | PAH | NC | 2,400 | Calculated Subpart S |
| Total Petroleum Hydrocarbons as Diesel (TPH-d) | PAH | C | 100 | NDEP Level Clean-up ⁶ |
| Polychlorinated biphenyls (PCBs) | PCBs | C | 25 | TSCA ⁷ |
| Bis(2-ethylhexyl)phthalate (DEHP) | SVOC | C | 1,600 | Calculated Subpart S |
| Bromoform (tribromomethane) | SVOC | C | 89 | Calculated Subpart S |

**Proposed Closure Goals
Hawthorne Army Depot
Hawthorne, Nevada**

| Constituent of Concern | Chemical Classification | Carcinogenic (C) or Non-carcinogenic (NC) | HWAD Proposed Closure Goals for Soil (mg/kg) | HWAD Proposed Closure Goal Source |
|-----------------------------|-------------------------|---|--|-----------------------------------|
| Butyl benzyl phthalate | SVOC | NC | 16,000 | Calculated Subpart S |
| Dibromochloromethane | SVOC | C | 83 | Calculated Subpart S |
| Dibutyl-phthalate | SVOC | NC | 8,000 | Calculated Subpart S |
| Diethyl phthalate | SVOC | NC | 64,000 | Calculated Subpart S |
| Phenanthrene | SVOC | NC | - | NA |
| Phenol | SVOC | NC | 48,000 | Calculated Subpart S |
| Acetone | VOC | NC | 800 | Calculated Subpart S |
| Anthracene | VOC | NC | 24,000 | Calculated Subpart S |
| Benzene | VOC | C | 24 | Calculated Subpart S |
| Bis(2-chloroisopropyl)ether | VOC | C | 3,200 | Calculated Subpart S |
| Bromomethane | VOC | NC | 112 | Calculated Subpart S |
| Carbon tetrachloride | VOC | C | 5 | Calculated Subpart S |
| Chlorobenzene | VOC | NC | 1,600 | Calculated Subpart S |
| Chloroform | VOC | C | 115 | Calculated Subpart S |
| Chloromethane | VOC | C | 538 | Calculated Subpart S |
| Dibromomethane | VOC | C | 0.008 | Calculated Subpart S |
| 1,2-Dichlorobenzene | VOC | NC | 7,200 | Calculated Subpart S |
| 1,4-Dichlorobenzene | VOC | C | 18,300 | Calculated Subpart S |
| Dichlorodifluoromethane | VOC | C | 16,000 | Calculated Subpart S |
| Ethylbenzene | VOC | NC | 8,000 | Calculated Subpart S |
| Methylene bromide | VOC | NC | 800 | Calculated Subpart S |
| Methylene chloride | VOC | C | 4,800 | Calculated Subpart S |
| 2-Methylnaphthalene | VOC | C | - | NA |
| 1,1,2,2-Tetrachloroethane | VOC | C | 35 | Calculated Subpart S |
| Tetrachloroethylene (PCE) | VOC | C & NC | 800 | Calculated Subpart S |
| Toluene | VOC | NC | 16,000 | Calculated Subpart S |
| 1,1,1-Trichloroethane | VOC | NC | 7,200 | Calculated Subpart S |
| Trichloroethylene (TCE) | VOC | C & NC | 480 | Calculated Subpart S |
| Trichlorofluoromethane | VOC | NC | 24,000 | Calculated Subpart S |
| 1,2,3-Trichloropropane | VOC | C | 480 | Calculated Subpart S |
| Vinyl chloride | VOC | C | 0.37 | Calculated Subpart S |
| Xylene Total (m-, o-, p-) | VOC | NC | 160,000 | Calculated Subpart S |
| 2,3,7,8-TCDD | Dioxin | C | 0.000005 | Calculated Subpart S |

^a RCRA 55 FR 30870

^b Not available

^c Highest background concentration detected in 50 background soil samples

^d Smucker, Stanford J. USEPA Region IX, Preliminary Remedial Goals, Second Half, Sep. 1995

^e Method detection limit for Volatile Organic Compounds by EPA Method 8260 or Semi-Volatile Organic Compounds analyzed by EPA Method 8270

^f Nevada Division of Environmental Protection

^g Cleanup level for PCB spills in accordance with Toxic Substance and Control Act Spill Policy Guidelines 40 CFR 761

SAP (9/98, Final) - West 101 Production Area (HWAD)

Proposed Excavation Goal (PEG's) by Definitive and Screening * Analysis-
 Maximum Concentration of Contaminants
 In Soil to Be Left in Place at Depth Below the Surface

| Contaminant | Concentration (mg/kg) |
|--|-----------------------|
| 2,4,6,-trinitrotoluene (TNT) | 800* |
| 2,4-dinitrotoluene (2,4-DNT) | 80 |
| 2,6-dinitrotoluene (2,6-DNT) | 80 |
| 1,3,5-trinitrobenzene (1,3,5-TNB) | 150 |
| 1,3,-drinitrobenzne (1,3-DNB) | NE |
| 2-amino-4,6dinitrotoluene (2-Am-DNT) | NE |
| 4-amino-2,6-dinitrotoluene (4-Am-DNT) | NE |
| Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX) | 4000 |
| Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX) | 300 |
| Picric acid | 7.0 |
| Pentachlorophenol | NE |
| Nitroaromatics/Nitroamines | <30 |

SAP (9/98, Final) - West 101 Production Area (HWAD)

Clean-up Goals by Screening* and Definitive Analysis

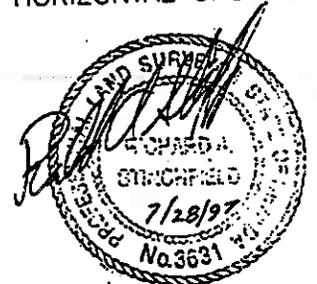
| Contaminant | Concentration (mg/kg) |
|--|-----------------------|
| 2,4,6,-trinitrotoluene (TNT) | 40* |
| 2,4-dinitrotoluene (2,4-DNT) | 2.6 |
| 2,6-dinitrotoluene (2,6-DNT) | 2.6 |
| 1,3,5-trinitrobenzene (1,3,5-TNB) | 4 |
| 1,3,-drinitrobenzne (1,3-DNB) | 8 |
| 2-amino-4,6dinitrotoluene (2-Am-DNT) | NE |
| 4-amino-2,6-dinitrotoluene (4-Am-DNT) | NE |
| Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX) | 100 |
| Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX) | 64 |
| Picric acid | 7 |
| Pentachlorophenol | None |

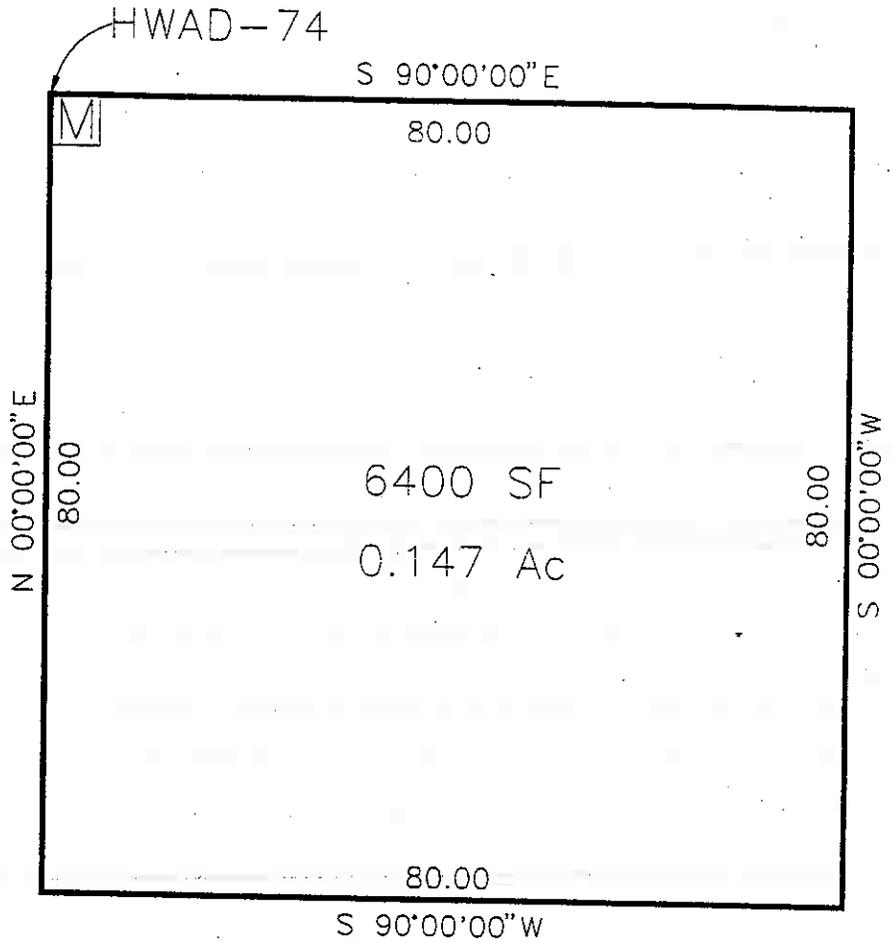
NE - not established

Appendix B

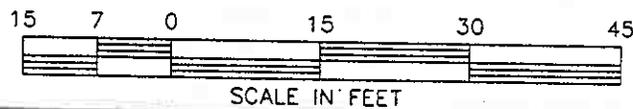
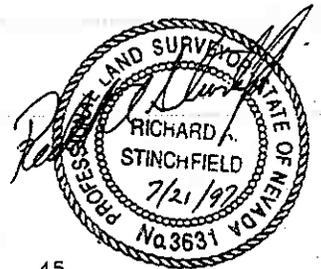
NOTES

1. FOR THE LOCATION OF THE FOLLOWING SWMU'S, REFER TO FIGURE 3-6 OF THE "FINAL R.C.R.A. FACILITY INVESTIGATION REPORT OF GROUP "A" SOLID WASTE MANAGEMENT UNITS A-04, B-16, B-21, B-24, B-26, AND H-01".
2. THE "HWAD" MONUMENTS AS SHOWN HEREIN AS "M", ARE A 1' X 1' X 2'+ CONCRETE MONUMENT WITH A BRASS CAP STAMPED AS PER SPECIFICATIONS. ALL OF THE OTHER CORNERS ARE MARKED BY A 5/8" RE-BAR WITH A PLASTIC CAP STAMPED "STINCHFIELD PLS 3631" UNLESS NOTED OTHERWISE ON THE MAPS.
3. HORIZONTAL DATUM IS BASED ON NAD 83(1994) AND MORE SPECIFICALLY, NGS STATION "W 2". "W 2" IS A FEDERAL BASE NETWORK CONTROL STATION AND IS LOCATED IN THE APPROXIMATE CENTER OF THIS PROJECT.
4. VERTICAL DATUM IS BASED ON NAVD 29. NAVD 88 ELEVATIONS HAVE BEEN SCALED AND THEREFORE ARE NOT ACCURATE. VERTICAL CONTROL USING GPS WAS USED TO ESTABLISH THE ELEVATIONS OF THE EXISTING CONTROL POINTS AND THE "HWAD" MONUMENTS. THE VALUE OF NGS STATION "W 2" WAS USED AS A BASIS FOR THE VERTICAL CONTROL.
5. COORDINATE VALUES OF EXISTING NGS CONTROL, TRAVERSE POINTS, AND HWAD MONUMENTS ARE STATE PLANE COORDINATES, WEST ZONE.
6. THE COMBINED FACTOR WAS CALCULATED USING THE FOLLOWING FIGURES. THE "MAP SCALE" AT POINT "W 2" IS 0.99990022, THE MEAN ELEVATION OF THE TOTAL PROJECT WAS TAKEN AS 4150.00 FEET ABOVE SEA LEVEL AND THE MEAN RADIUS OF THE EARTH WAS TAKEN AS 20,906,000 FEET. THE SEA LEVEL FACTOR WAS CALCULATED AS FOLLOWS: $20,906,000 / 20,906,000 + 4150.00 = 0.999801532$. THE COMBINED FACTOR (CF) WAS CALCULATED AS FOLLOWS: $0.99990022 \times 0.999801532 = 0.999701772$.
7. GROUND DISTANCE X CF (0.999801532) = GRID DISTANCE.
8. GRID DISTANCE X INVERSE CF (1.00298317) = GROUND DISTANCE.
9. COORDINATE VALUES OF ALL OTHER POINTS INCLUDING SWMU CORNERS OTHER THAN "HWAD" MONUMENTS, REFERENCE POINTS, TEST PIT OR HOLE LOCATIONS ETC., WERE CALCULATED USING GROUND DISTANCES AND ARE THEREFORE NOT TRUE STATE PLANE COORDINATES.
10. DISTANCES AS SHOWN ON THESE SWMU'S ARE HORIZONTAL GROUND DISTANCES.





| | | | | | | |
|--------|---|--------------|---|-------------|------|----------|
| NW COR | N | 14512161.176 | E | 2623732.573 | ELEV | 4203.512 |
| NE COR | N | 14512161.176 | E | 2623812.573 | ELEV | 4205.931 |
| SE COR | N | 14512081.176 | E | 2623812.573 | ELEV | 4208.481 |
| SW COR | N | 14512081.176 | E | 2623732.573 | ELEV | 4205.597 |



SWMU B07 Survey Data
Hawthorne Army Depot
Hawthorne, Nevada

| SWMU | Point ID | Northing (feet) | Easting (feet) | Elevation |
|------|---------------|--------------------|-------------------|-----------|
| B07 | CPS01 | 1388790 | 499342.4 | NE |
| B07 | HA01 | 1388784 | 499362.8 | NE |
| B07 | Pin 3 | 1388738.35 | 499316.98 | 4205.597 |
| B07 | Pin 2 | 1388732.19 | 499421.86 | 4208.481 |
| B07 | Pin 1 | 1388826.39 | 499426.98 | 4205.931 |
| B07 | HWAAP-74-1996 | 1388831.82 | 499321.58 | 4203.512 |

Notes:

NE = Not established

Coordinate data based on electronic map file using the NAD 1927 datum.

Elevation data based on surveyors map using NGVD 1929 datum.

Appendix C

Explosives
Method 8330 (ASC)

| Sample ID | Location ID | Sample Date | Depth | Lab | 2,4,6-TNT mg/kg | 2,4-Dinitrotoluene mg/kg | 2,6-Dinitrotoluene mg/kg | 2-Amino-4,6-DNT mg/kg | 2-Nitrotoluene mg/kg | 3-Nitrotoluene mg/kg | 4-Amino-2,6-DNT mg/kg | 4-Nitrotoluene mg/kg | HMX mg/kg |
|-----------------------|-------------|-------------|-------|-----|--------------------|-----------------------------|-----------------------------|--------------------------|-------------------------|-------------------------|--------------------------|-------------------------|--------------|
| B7-CPS1-1-043 | CPS01 | 5/1/94 | 43 | ASC | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 |
| B7-HA1-1-000 | HA01 | 5/3/94 | 0.5 | ASC | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 |
| B7-HA1-1-005 | HA01 | 5/3/94 | 5 | ASC | <1 | <1 | <1 | <1 | <1 | <1 | 0.5 ^J | <1 | 3.2 |
| B7-HA2-1-005 | HA01 | 5/3/94 | 5 | ASC | <1 | <1 | <1 | <1 | <1 | <1 | 0.54 ^J | <1 | 3 |
| B7-CPS1-1-031 | CPS01 | 5/22/94 | 31 | ASC | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 |
| B7-CPS1-1-040 | CPS01 | 5/22/94 | 40 | ASC | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 |
| Analyses | | | | | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 |
| Detections | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 |
| Minimum Concentration | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0.5 | 0 | 3 |
| Maximum Concentration | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0.54 | 0 | 3.2 |
| HWAD - PCG | | | | | 233 | 2.6 | 80 | 800 | 800 | 800 | 800 | 800 | 4000 |
| HWAD - PCG Hits | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Notes:
 NA = Not analyzed
 NE = Not established
 Zero values listed for maximum and minimum concentrations indicate a nondetect value for that analyte.

Esives
Method 8330 (ASC)

| Sample ID | Location ID | Sample Date | Depth | Lab | m-Dinitrobenzene mg/kg | Nitrobenzene mg/kg | RDX mg/kg | sym-Trinitrobenzene mg/kg | Tetryl mg/kg |
|-----------------------|-------------|-------------|-------|-----|---------------------------|-----------------------|--------------|------------------------------|-----------------|
| B7-CPS1-1-043 | CPS01 | 5/1/94 | 43 | ASC | <1 | <1 | <1 | <1 | <1 |
| B7-HA1-1-000 | HA01 | 5/3/94 | 0.5 | ASC | <1 | <1 | <1 | <1 | <1 |
| B7-HA1-1-005 | HA01 | 5/3/94 | 5 | ASC | <1 | <1 | 12 | <1 | <1 |
| B7-HA2-1-005 | HA01 | 5/3/94 | 5 | ASC | <1 | <1 | 16 | <1 | <1 |
| B7-CPS1-1-031 | CPS01 | 5/22/94 | 31 | ASC | <1 | <1 | <1 | <1 | <1 |
| B7-CPS1-1-040 | CPS01 | 5/22/94 | 40 | ASC | <1 | <1 | <1 | <1 | <1 |
| Analyses | | | | | 6 | 6 | 6 | 6 | 6 |
| Detections | | | | | 0 | 0 | 2 | 0 | 0 |
| Minimum Concentration | | | | | 0 | 0 | 12 | 0 | 0 |
| Maximum Concentration | | | | | 0 | 0 | 16 | 0 | 0 |
| HWAD - PCG | | | | | 8 | 40 | 64 | 4 | 800 |
| HWAD - PCG Hits | | | | | 0 | 0 | 0 | 0 | 0 |

Notes:

NA = Not analyzed
 NE = Not established
 Zero values listed for maximum and minimum concentrations indicate a nondetect value for that analyte.

Metals
Method 7740 (ASC)

| Sample ID | Location ID | Sample Date | Depth | Lab | Selenium mg/kg |
|---------------|-------------|-------------|-------|-----|-------------------|
| B7-CPS1-1-043 | CPS01 | 5/1/94 | 43 | ASC | <1.1 |
| B7-HA1-1-000 | HA01 | 5/3/94 | 0.5 | ASC | <0.52 |
| B7-HA1-1-005 | HA01 | 5/3/94 | 5 | ASC | <0.52 |
| B7-HA2-1-005 | HA01 | 5/3/94 | 5 | ASC | <0.52 |
| B7-CPS1-1-031 | CPS01 | 5/22/94 | 31 | ASC | <0.59 |
| B7-CPS1-1-040 | CPS01 | 5/22/94 | 40 | ASC | <0.56 |

| | |
|-----------------------|----|
| Analyses | 6 |
| Detections | 0 |
| Minimum Concentration | 0 |
| Maximum Concentration | 0 |
| HWAD - PCG | 20 |
| HWAD - PCG Hits | 0 |

Notes:

NA = Not analyzed

NE = Not established

Zero values listed for maximum and minimum concentrations indicate a nondetect value for that analyte.

Mercury
Method 7471 (ASC)

| Sample ID | Location ID | Sample Date | Depth | Lab | Mercury mg/kg |
|---------------|-------------|-------------|-------|-----|------------------|
| B7-CPS1-1-043 | CPS01 | 5/1/94 | 43 | ASC | <0.11 |
| B7-HA1-1-000 | HA01 | 5/3/94 | 0.5 | ASC | <0.1 |
| B7-HA1-1-005 | HA01 | 5/3/94 | 5 | ASC | <0.1 |
| B7-HA2-1-005 | HA01 | 5/3/94 | 5 | ASC | <0.1 |
| B7-CPS1-1-031 | CPS01 | 5/22/94 | 31 | ASC | <0.12 |
| B7-CPS1-1-040 | CPS01 | 5/22/94 | 40 | ASC | <0.11 |

| | |
|-----------------------|----|
| Analyses | 6 |
| Detections | 0 |
| Minimum Concentration | 0 |
| Maximum Concentration | 0 |
| HWAD - PCG | 24 |
| HWAD - PCG Hits | 0 |

Notes:

NA = Not analyzed

NE = Not established

Zero values listed for maximum and minimum concentrations indicate a nondetect value for that analyte.

Metals
Method 7421 (ASC)

| Sample ID | Location ID | Sample Date | Depth | Lab | Lead |
|---------------|-------------|-------------|-------|-----|-------|
| | | | | | mg/kg |
| B7-CPS1-1-043 | CPS01 | 5/1/94 | 43 | ASC | 7.9 |
| B7-HA1-1-000 | HA01 | 5/3/94 | 0.5 | ASC | <0.52 |
| B7-HA1-1-005 | HA01 | 5/3/94 | 5 | ASC | 2.4 |
| B7-HA2-1-005 | HA01 | 5/3/94 | 5 | ASC | 2.3 |
| B7-CPS1-1-031 | CPS01 | 5/22/94 | 31 | ASC | 6.4 |
| B7-CPS1-1-040 | CPS01 | 5/22/94 | 40 | ASC | 6.1 |

| | |
|-----------------------|-----|
| Analyses | 6 |
| Detections | 5 |
| Minimum Concentration | 2.3 |
| Maximum Concentration | 7.9 |
| HWAD - PCG | 100 |
| HWAD - PCG Hits | 0 |

Notes:

NA = Not analyzed

NE = Not established

Zero values listed for maximum and minimum concentrations indicate a nondetect value for that analyte.

Metals
Method 7060 (ASC)

| Sample ID | Location ID | Sample Date | Depth | Lab | Arsenic mg/kg |
|---------------|-------------|-------------|-------|-----|------------------|
| B7-CPS1-1-043 | CPS01 | 5/1/94 | 43 | ASC | 10 |
| B7-HA1-1-000 | HA01 | 5/3/94 | 0.5 | ASC | 11 |
| B7-HA1-1-005 | HA01 | 5/3/94 | 5 | ASC | 2.6 |
| B7-HA2-1-005 | HA01 | 5/3/94 | 5 | ASC | 2.2 |
| B7-CPS1-1-031 | CPS01 | 5/22/94 | 31 | ASC | 7.7 |
| B7-CPS1-1-040 | CPS01 | 5/22/94 | 40 | ASC | 9.3 |

| | |
|-----------------------|-----|
| Analyses | 6 |
| Detections | 6 |
| Minimum Concentration | 2.2 |
| Maximum Concentration | 11 |
| HWAD - PCG | 100 |
| HWAD - PCG Hits | 0 |

Notes:

NA = Not analyzed

NE = Not established

Zero values listed for maximum and minimum concentrations indicate a nondetect value for that analyte.

Metals
Method 6010A (ASC)

| Sample ID | Location ID | Sample Date | Depth | Lab | Barium | Beryllium | Cadmium | Chromium Total | Silver | Arsenic | Lead | Selenium |
|-----------------------|-------------|-------------|-------|-----|--------|-----------|---------|----------------|--------|---------|-------|----------|
| | | | | | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg |
| B7-CPS1-1-043 | CPS01 | 5/1/94 | 43 | ASC | 240 | <0.55 | <0.55 | 4.4 | <1.1 | NA | NA | NA |
| B7-HA1-1-000 | HA01 | 5/3/94 | 0.5 | ASC | 120 | <0.52 | 5.6 | 11 | <1 | 11 | <0.52 | <0.52 |
| B7-HA1-1-005 | HA01 | 5/3/94 | 5 | ASC | 58 | <0.52 | 2.7 | 4.3 | <1 | 2.6 | 2.4 | <0.52 |
| B7-HA2-1-005 | HA01 | 5/3/94 | 5 | ASC | 54 | <0.52 | 1.8 | 4.1 | <1 | 2.2 | 2.3 | <0.52 |
| B7-CPS1-1-031 | CPS01 | 5/22/94 | 31 | ASC | 220 | 0.73 | <0.59 | 7 | <1.2 | 7.7 | 6.4 | <0.59 |
| B7-CPS1-1-040 | CPS01 | 5/22/94 | 40 | ASC | 210 | 0.67 | <0.56 | 10 | <1.1 | 9.3 | 6.1 | <0.56 |
| <hr/> | | | | | | | | | | | | |
| Analyses | | | | | 6 | 6 | 6 | 6 | 6 | 5 | 5 | 5 |
| Detections | | | | | 6 | 2 | 3 | 6 | 0 | 5 | 4 | 0 |
| Minimum Concentration | | | | | 54 | 0.67 | 1.8 | 4.1 | 0 | 2.2 | 2.3 | 0 |
| Maximum Concentration | | | | | 240 | 0.73 | 5.6 | 11 | 0 | 11 | 6.4 | 0 |
| HWAD - PCG | | | | | 2000 | 1 | 20 | 20 | 100 | 100 | 100 | 20 |
| HWAD - PCG Hits | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Notes:

NA = Not analyzed

NE = Not established

Zero values listed for maximum and minimum concentrations indicate a nondetect value for that analyte.

Nitrogen
Method 353.2 (ASC)

| Sample ID | Location ID | Sample Date | Depth | Lab | Nitrogen Nitrate mg/kg | Ammonia as Nitrogen mg/kg |
|-----------------------|-------------|-------------|-------|-----|---------------------------|------------------------------|
| B7-CPS1-1-043 | CPS01 | 5/1/94 | 43 | ASC | 1.8 | NA |
| B7-HA1-1-000 | HA01 | 5/3/94 | 0.5 | ASC | 3.6 | NA |
| B7-HA1-1-005 | HA01 | 5/3/94 | 5 | ASC | 5.5 | NA |
| B7-HA2-1-005 | HA01 | 5/3/94 | 5 | ASC | 3.4 | NA |
| B7-CPS1-1-031 | CPS01 | 5/22/94 | 31 | ASC | <1.2 | NA |
| Analyses | | | | | 5 | 0 |
| Detections | | | | | 4 | 0 |
| Minimum Concentration | | | | | 1.8 | 0 |
| Maximum Concentration | | | | | 5.5 | 0 |
| HWAD - PCG | | | | | 128000 | NE |
| HWAD - PCG Hits | | | | | 0 | NE |

Notes:

NA = Not analyzed

NE = Not established

Zero values listed for maximum and minimum concentrations indicate that the sample was not analyzed for that analyte.

Picric Acid
Method 8330M (ASC)

| Sample ID | Location ID | Sample Date | Depth | Lab | Picric Acid mg/kg |
|---------------|-------------|-------------|-------|-----|----------------------|
| B7-CPS1-1-043 | CPS01 | 5/1/94 | 43 | ASC | <0.25 |
| B7-HA1-1-000 | HA01 | 5/3/94 | 0.5 | ASC | <0.25 |
| B7-HA1-1-005 | HA01 | 5/3/94 | 5 | ASC | <0.25 |
| B7-HA2-1-005 | HA01 | 5/3/94 | 5 | ASC | <0.25 |
| B7-CPS1-1-031 | CPS01 | 5/22/94 | 31 | ASC | <0.25 |
| B7-CPS1-1-040 | CPS01 | 5/22/94 | 40 | ASC | <0.25 |

| | |
|-----------------------|---|
| Analyses | 6 |
| Detections | 0 |
| Minimum Concentration | 0 |
| Maximum Concentration | 0 |
| HWAD - PCG | 7 |
| HWAD - PCG Hits | 0 |

Notes:

NA = Not analyzed

NE = Not established

Zero values listed for maximum and minimum concentrations indicate a nondetect value for that analyte.

Appendix D

Applied P & Ch Laboratory

13780 Magnolia Ave. Chino CA 91710

Tel: (909) 590-1828 Fax: (909) 590-1498

Submitted to:

Tetra Tech, Inc. (San Francisco)

Attention: Roy Roenbeck

180 Howard St. Ste. 250

San Francisco CA 94105

Tel: (415)974-1221 Fax: (415)974-5914

APCL Analytical Report

Service ID #: 801-992449

Collected by: GM/FH

Collected on: 03/09-10/99

Received: 03/12/99

Extracted: 03/17/99

Tested: 03/17-22/99

Reported: 03/24/99

Sample Description: Soil from Hawthorne

Project Description: HAWD-101

Analysis of Soil Samples

| Component Analyzed | Method | Unit | PQL | Analysis Result | | | |
|------------------------------------|------------|-----------|------|--------------------------|--------------------------|--------------------------|--------------------------|
| | | | | CS07-BB-01 99-02449-1 | CS07-SA-01 99-02449-2 | CS07-SA-02 99-02449-3 | CS07-SA-03 99-02449-4 |
| MOISTURE | ASTM-D2216 | %Moisture | 0.5 | 16.5 | 1.4 | 1.3 | 1.3 |
| NITROAROMATICS AND NITROAMINES (a) | | | | | | | |
| Dilution Factor | | | | 1 | 50 | 1 | 1 |
| 4-AMINO-2,6-DINITROTOLUENE | 8330 | mg/kg | 0.2 | <0.24 | <10 | <0.20 | <0.20 |
| 2-AMINO-4,6-DINITROTOLUENE | 8330 | mg/kg | 0.2 | <0.24 | <10 | <0.20 | <0.20 |
| 1,3-DINITROBENZENE | 8330 | mg/kg | 0.25 | <0.30 | <13 | <0.25 | <0.25 |
| 2,4-DINITROTOLUENE | 8330 | mg/kg | 0.25 | <0.30 | <13 | <0.25 | <0.25 |
| 2,6-DINITROTOLUENE | 8330 | mg/kg | 0.25 | <0.30 | <13 | <0.25 | <0.25 |
| HMX | 8330 | mg/kg | 0.25 | 0.30 | 76 | <0.25 | <0.25 |
| NITROBENZENE | 8330 | mg/kg | 0.25 | <0.30 | <13 | <0.25 | <0.25 |
| 3-NITROTOLUENE | 8330 | mg/kg | 0.25 | <0.30 | <13 | <0.25 | <0.25 |
| RDX | 8330 | mg/kg | 0.25 | 0.3J | 599 | <0.25 | <0.25 |
| TETRYL | 8330 | mg/kg | 0.25 | <0.30 | <13 | <0.25 | <0.25 |
| 1,3,5-TRINITROBENZENE | 8330 | mg/kg | 0.25 | <0.30 | <13 | <0.25 | <0.25 |
| 2,4,6-TRINITROTOLUENE | 8330 | mg/kg | 0.25 | 0.1J | <13 | <0.25 | <0.25 |
| 2/4-NITROTOLUENE | 8330 | mg/kg | 0.25 | <0.30 | <13 | <0.25 | <0.25 |

| Component Analyzed | Method | Unit | PQL | Analysis Result | | | |
|------------------------------------|------------|-----------|------|--------------------------|--------------------------|--------------------------|--------------------------|
| | | | | CS07-SA-04 99-02449-5 | CS07-SA-05 99-02449-6 | CS07-SW-01 99-02449-7 | CS07-SW-02 99-02449-8 |
| MOISTURE | ASTM-D2216 | %Moisture | 0.5 | 1.0 | 1.1 | 1.8 | 1.4 |
| NITROAROMATICS AND NITROAMINES (a) | | | | | | | |
| Dilution Factor | | | | 5 | 1 | 1 | 1 |
| 4-AMINO-2,6-DINITROTOLUENE | 8330 | mg/kg | 0.2 | <1.0 | <0.20 | <0.20 | <0.20 |
| 2-AMINO-4,6-DINITROTOLUENE | 8330 | mg/kg | 0.2 | <1.0 | <0.20 | <0.20 | <0.20 |
| 1,3-DINITROBENZENE | 8330 | mg/kg | 0.25 | <1.3 | <0.25 | <0.25 | <0.25 |
| 2,4-DINITROTOLUENE | 8330 | mg/kg | 0.25 | <1.3 | <0.25 | <0.25 | <0.25 |
| 2,6-DINITROTOLUENE | 8330 | mg/kg | 0.25 | <1.3 | <0.25 | <0.25 | <0.25 |
| HMX | 8330 | mg/kg | 0.25 | 16 | <0.25 | <0.25 | <0.25 |
| NITROBENZENE | 8330 | mg/kg | 0.25 | <1.3 | <0.25 | <0.25 | <0.25 |
| 3-NITROTOLUENE | 8330 | mg/kg | 0.25 | <1.3 | <0.25 | <0.25 | <0.25 |
| RDX | 8330 | mg/kg | 0.25 | 43 | <0.25 | <0.25 | <0.25 |
| TETRYL | 8330 | mg/kg | 0.25 | <1.3 | <0.25 | <0.25 | <0.25 |
| 1,3,5-TRINITROBENZENE | 8330 | mg/kg | 0.25 | <1.3 | <0.25 | <0.25 | <0.25 |
| 2,4,6-TRINITROTOLUENE | 8330 | mg/kg | 0.25 | 0.6J | <0.25 | <0.25 | <0.25 |
| 2/4-NITROTOLUENE | 8330 | mg/kg | 0.25 | <1.3 | <0.25 | <0.25 | <0.25 |

Tetra Tech Hawthorn Army Depot



Date Received: 7/10/00
Cooler ID: 0012
COC #: 037

Report No : 000710
SDG No : 000710exp
Reported by : Chris Cao

Matrix : soil
Units : mg/Kg

| Field Sample ID No. | | PAD03-WR05A-070900A | | PAD03-WR05A-070900B | | PAD03-WR05B-070900 | | PAD03-WR05C-070900 | | PAD03-WR05D-070900 | | PAD03-WR11A-070900 | |
|---------------------|-----------|---------------------|-------|---------------------|-------|--------------------|-------|--------------------|-------|--------------------|-------|--------------------|-------|
| Lab Sample ID No. | | NAV264 | | NAV265 | | NAV266 | | NAV267 | | NAV268 | | NAV269 | |
| Sample Depth | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | |
| Date Sampled | | 7/9/00 | | 7/9/00 | | 7/9/00 | | 7/9/00 | | 7/9/00 | | 7/9/00 | |
| Time Sampled | | 9:31 | | 9:32 | | 9:35 | | 9:38 | | 9:42 | | 9:19 | |
| Date Extracted | | 7/10/00 | | 7/10/00 | | 7/10/00 | | 7/10/00 | | 7/10/00 | | 7/10/00 | |
| Time Extracted | | 12:00 | | 12:00 | | 12:00 | | 12:00 | | 12:00 | | 12:00 | |
| Date Analyzed | | 7/11/00 | | 7/11/00 | | 7/11/00 | | 7/11/00 | | 7/11/00 | | 7/11/00 | |
| Time Analyzed | | 0:25 | | 0:45 | | 1:04 | | 1:24 | | 1:43 | | 2:03 | |
| Analytes | PQL | Conc. | Qual. | Conc. | Qual. | Conc. | Qual. | Conc. | Qual. | Conc. | Qual. | Conc. | Qual. |
| HMX | 4.4 | 6.3 | U | 6.8 | U | 7.7 | U | 7.4 | U | 7.4 | U | 6.8 | U |
| RDX | 2.0 | 2.9 | U | 3.1 | U | 3.5 | U | 3.4 | U | 3.3 | U | 3.1 | U |
| 1,3,5-TNB | 2.0 | 2.9 | U | 3.1 | U | 3.5 | U | 3.4 | U | 3.3 | U | 3.1 | U |
| 1,3-DNB | 0.8 | 1.1 | U | 1.2 | U | 1.4 | U | 1.4 | U | 1.3 | U | 1.2 | U |
| NB | 1.6 | 2.3 | U | 2.5 | U | 2.8 | U | 2.7 | U | 2.7 | U | 2.5 | U |
| Tetryl | 8.4 | 12 | U | 13 | U | 15 | U | 14 | U | 14 | U | 13 | U |
| Amino-DNTs | 2.4 | 3.4 | U | 3.7 | U | 4.2 | U | 4.1 | U | 4 | U | 3.7 | U |
| 2,4,6-TNT | 3.6 | 5.2 | U | 5.5 | U | 6.3 | U | 6.1 | U | 6 | U | 5.5 | U |
| 2,6-DNT | 2.0 | 2.9 | U | 3.1 | U | 3.5 | U | 3.4 | U | 3.3 | U | 3.1 | U |
| 2,4-DNT | 1.6 | 2.3 | U | 2.5 | U | 2.8 | U | 2.7 | U | 2.7 | U | 2.5 | U |
| 2-NT | 4.4 | 6.3 | U | 6.8 | U | 7.7 | U | 7.4 | U | 7.4 | U | 6.8 | U |
| 4-NT | 14.0 | 20 | U | 22 | U | 24 | U | 24 | U | 23 | U | 22 | U |
| 3-NT | 6.8 | 9.7 | U | 10 | U | 12 | U | 11 | U | 11 | U | 10 | U |
| Surrogate | QC Limits | | | | | | | | | | | | |
| 1,2-DNB | 65%-135% | 84% | | 85% | | 84% | | 82% | | 93% | | 89% | |
| Dilution Factor | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | |
| Percent Solids | | 74% | | 69% | | 61% | | 61% | | 64% | | 70% | |

Notes :
 U - Not detected at reported value
 J - Between MDL and PQL
 D - Dilution was performed on sample
 E - Estimated value, result outside calibration range
 DL - Surrogate diluted out due to high concentration of target compounds
 PQL - Practical Quantitation Limit
 N - non-confirmed by all three wavelengths
 mg/Kg - Milligrams per kilogram (PPM)

Tetra Tech Hawthorn Army Depot

ONSI
ENVIRONMENTAL
LABORATORIES

Date Received: 6/23/00
Cooler ID: 0012
COC#: 023

Report No : 000623
SDG No : 000623exp
Reported by : Chris Cao

Matrix : soil
Units : mg/Kg



| Field Sample ID No. | | NWB06-0383E0633W-01 | | NWB06-0633E0633W-01 | | NWB06-0633E0883W-01 | | B07-020E020S-02A | | Dup B07-020E020S-02B | | Dilution NWB06-0383E0133W-01 | |
|---------------------|-----------|--------------------------------|-------|--------------------------------|-------|--------------------------------|-------|------------------|-------|-------------------------|-------|---------------------------------|-------|
| Lab Sample ID No. | | NAV191 | | NAV192 | | NAV193 | | NAV194 | | NAV195 | | NAV186 | |
| Sample Depth | | 1" | | 1" | | 1" | | 2" | | 2" | | 1" | |
| Date Sampled | | 6/23/00 | | 6/23/00 | | 6/23/00 | | 6/23/00 | | 6/23/00 | | 6/23/00 | |
| Time Sampled | | 9:22 | | 9:24 | | 9:24 | | 9:55 | | 9:55 | | 9:05 | |
| Date Extracted | | 6/23/00 | | 6/23/00 | | 6/23/00 | | 6/23/00 | | 6/23/00 | | 6/23/00 | |
| Time Extracted | | 12:54 | | 12:54 | | 12:54 | | 12:54 | | 12:54 | | 12:54 | |
| Date Analyzed | | 6/23/00 | | 6/23/00 | | 6/23/00 | | 6/23/00 | | 6/23/00 | | 6/24/00 | |
| Time Analyzed | | 21:44 | | 22:02 | | 22:39 | | 22:57 | | 23:15 | | 0:10 | |
| Analytes | PQL | Conc. | Qual. | Conc. | Qual. | Conc. | Qual. | Conc. | Qual. | Conc. | Qual. | Conc. | Qual. |
| HMX | 4.4 | 3.8 | J | 15 | | 10 | | 4.8 | U | 4.8 | U | 42 | D |
| RDX | 2.0 | 3.9 | | 100 | | 67 | | 0.22 | J | 2.2 | U | 330 | D |
| 1,3,5-TNB | 2.0 | 2.1 | U | 7.3 | | 5.5 | | 2.2 | U | 2.2 | U | 32 | D |
| 1,3-DNB | 0.8 | 0.84 | U | 0.87 | U | 0.84 | U | 0.87 | U | 0.88 | U | 8.5 | DU |
| NB | 1.6 | 1.7 | U | 1.7 | U | 1.7 | U | 1.7 | U | 1.8 | U | 17 | DU |
| Tetryl | 8.4 | 8.8 | U | 9.2 | U | 8.8 | U | 9.2 | U | 9.2 | U | 89 | DU |
| Amino-DNTs | 2.4 | 2.5 | U | 2.6 | U | 2.5 | U | 2.6 | U | 2.6 | U | 26 | DU |
| 2,4,6-TNT | 3.6 | 3.8 | U | 12 | | 21 | | 3.9 | U | 3.9 | U | 77 | D |
| 2,6-DNT | 2.0 | 2.1 | U | 2.2 | U | 2.1 | U | 2.2 | U | 2.2 | U | 21 | DU |
| 2,4-DNT | 1.6 | 1.7 | U | 1.7 | U | 1.7 | U | 1.7 | U | 1.8 | U | 17 | DU |
| 2-NT | 4.4 | 4.6 | U | 4.8 | U | 4.6 | U | 4.8 | U | 4.8 | U | 47 | DU |
| 4-NT | 14.0 | 15 | U | 15 | U | 15 | U | 15 | U | 15 | U | 150 | DU |
| 3-NT | 6.8 | 7.1 | U | 7.4 | U | 7.1 | U | 7.4 | U | 7.5 | U | 72 | DU |
| Surrogate | QC Limits | | | | | | | | | | | | |
| 1,2-DNB | 65%-135 | 95% | | 94% | | 95% | | 94% | | 89% | | 0% | DL |
| Dilution Factor | | 1 | | 1 | | 1 | | 1 | | 1 | | 10 | |
| Percent Solids | | 99% | | 96% | | 99% | | 95% | | 96% | | 98% | |

Notes :

- U - Not detected at reported value
- J- Between MDL and PQL
- D - Dilution was performed on sample
- E - Estimated value, result outside calibration range
- DL - Surrogate diluted out due to high concentration of target compounds
- PQL - Practical Quantitation Limit
- N- non-confirmed by all three wavelengths
- mg/Kg - Milligrams per kilogram (PPM)