INSTALLATION ACTION PLAN
for
CORNHUSKER ARMY AMMUNITION PLANT

March 2001

INSTALLATION ACTION PLAN
for
CORNHUSKER ARMY AMMUNITION PLANT




Fiscal Year 2001

PURPOSE

The purpose of the Installation Action Plan (IAP) is to outline the total multi-year restoration program for this installation. The plan will define Installation Restoration Program (IRP) requirements and propose a comprehensive approach and associated costs to conduct future investigations and remedial actions at each Operable Unit (OU) at the installation and other areas of concern.

In an effort to coordinate planning information between the IRP manager, major army commands (MACOMs), installations, executing agencies, regulatory agencies, and the public, an IAP has been completed for the Cornhusker Army Ammunition Plant (CHAAP). The IAP is used to track requirements, schedules and tentative budgets for all major Army installation restoration programs.

All site specific funding and schedule information has been prepared according to projected overall Army funding levels and is therefore subject to change during the document's annual review. Under current project funding, the last remedies will be in place at the CHAAP by the end of 2008.

CONTRIBUTORS TO THIS YEAR'S IAP

NAME	ORGANIZATION
Mary Wellensiek	Cornhusker AAP Environmental Program Manager
Mary Jean Fischer	IRP Support, Engineering & Environment
Rich Mendoza	OSC Headquarters
Alvin Kam	USACE
Pete Rissell	Army Environmental Center (AEC)
Ed Southwick	Nebraska DEQ
Dan Clement	CPNRD

CORNHUSKER ARMY AMMUNITION PLANT

PREPARED BY

MARY WELLENSIEK

Installation Restoration Program Manager

Cornhusker AAP

APPROVAL

TOM JAMIESON

Cornhusker AAP

Commander's Representative

REVIEWED BY

Legal Advisor,

Cornhusker AAP

Public Affairs Officer

Cornhusker AAP

OPERATIONS SUPPORT COMMAND

CONCURRENCE

RICH MENDOZA

MSC Environmental Restoration Program Manager, OSC

TOM JACKSON

Environmental Counsel, OSC

ARMY MATERIEL COMMAND

APPROVAL

MR. JEWEL SIMMONS
Environmental Restoration Program Manager
ARMY MATERIAL COMMAND

INFORMATION SHARING

AMC, as well as MSCs and installations believe that it should make its environmental restoration information available openly. This Installation Action Plan was forwarded to the following people:

State Regulator

EPA Regulator

Installation RPM

ACRONYMS & ABBREVIATIONS

ABA	Abandoned Burn Area
AEC	Army Environmental Center
ALF	Abandoned Landfill
ADRA	Ammunition Demilitarization and Renovation Area
AMC	Army Material Command
ATSDR	Agency for Toxic Substances & Disease Registry
CAAP	Cornhusker Army Ammunition Plant (changed to CHAAP)
CERCLA	Comprehensive Environmental Response Compensation and Liability Act
CHAAP	Cornhusker Army Ammunition Plant
CPNRD	Central Platte Natural Resources District
CRS	Cornhusker Railcar Services
Cr	Chromium
Cu	Copper
DCE	Deputy Commanding Engineer
DDESB	Department of Defense Explosive Safety Board
DERA	Defense Environmental Restoration Account
DERP/MIS	Defense Environmental Restoration Program/Management Information System
DMA	Demolition Area
DNT	2,4 Dinitrotoluene
DRMO	Defense Reutilization and Marketing Office
DRMS	Defense Reutilization and Marketing Service
DSA	Diesel Spill Area
DSERTS	Defense Site Environmental Restoration Tracking System
EFFTF	Existing Fire-Fighting Training Facility
ENSR	Environmental Contractor
EPA	Environmental Protection Agency
ER,A	Environmental Restoration, Army (formally called DERA)
EPIC	Environmental Photographic Interpretation Center
ESD	Explanation of Significant Difference
FD -A	Fuel Disposal Site A
Fe	Iron
FFA	Federal Facilities Agreement (same as IAG)
FFSRA	Federal Facility Site Remediation Agreement
FS	Feasibility Study
FY	Fiscal Year
GOCO	Government Owned Contractor Operated
gpm	gallons per minute
HMX	Cycloteramethylenetrinitramine
HRS	Hazard Ranking Score
IAG	Interagency Agreement (same as FFA)
IAP	Installation Action Plan
IOC	Industrial Operations Command (now OSC)
IRA	Interim Remedial Action
IRIP	Installation Restoration Incineration Program
IRP	Installation Restoration Program
K	Thousand
LAP	Load, Assemble, and Pack
LRIP	Last Remedy In Place
LTM	Long Term Monitoring (Post RA)
M	Million
MCL	Maximum Contaminant Level
NDEQ	Nebraska Department of Environmental Quality

ACRONYMS & ABBREVIATIONS

NB	Nitrobenzene
NE	Not Evaluated
NFA	No Further Action
OB/OD	Open Burn/Open Detonation
OPM	Operational Periodic Monitoring (pre-RA)
OSC	Operations Support Command (replaced IOC)
OU	Operable Unit
PA	Preliminary Assessment
PAH	Polycyclic Aromatic Hydrocarbons
Pb	Lead
POL	Petroleum, Oil & Lubricants
PP	Proposed Plan
ppb	parts per billion
ppm	parts per million
RA	Remedial Action
RA(C)	Remedial Action - Construction
RA(O)	Remedial Action - Operation
RAB	Restoration Advisory Board
RBC	Risk Based Concentrations
RCRA	Resource Conservation and Recovery Act
RD	Remedial Design
RDX	Cyclonite: Royal Demolition Explosives
REM	Removal
RI	Remedial Investigation
RIP	Remedy in Place
ROD	Record of Decision
RRSE	Relative Risk Site Evaluation
Sb	Antimony
SI	Site Investigation
SOC	Statement of Condition
SOP	Standard Operating Procedures
STP	Sewage Treatment Plant
SWMU	Solid Waste Management Unit
SVOC	Semi-Volatile Organic Compounds
TCE	Trichloroethylene
TNB	1,3,5 Trinitrobenzene
TNT	Trinitrotoluene
TPH	Total Petroleum Hydrocarbons
TRC	Technical Review Committee
ug/g	microgram per gram
ug/l	microgram per liter
USACHPPM	United States Army Center for Health Promotion and Preventive Medicine
USACE	United States ArmyCorps of Engineers
USAEC	United States Army Environmental Center
USAEHA	United States Army Environmental Hygiene Agency (replaced by USACHPPM)
USATHMA	United States Army Toxic and Hazardous Material Agency (replaced by AEC)
UST	Underground Storage Tank
UXO	Unexploded Ordnance
VOC	Volatile Organic Compound

SUMMARY

STATUS

Cornhusker AAP has been on the NPL since 22 July 1987 with a HRS of 51.3

NUMBER OF DSERTS SITES:

66 DSERTS sites
- 5 Active ER,A Eligible Sites
- 61 Response Complete ER,A Eligible

DIFFERENT DSERTS SITE TYPES:

59	Disposal Pits/Dry Well	2	UST
1	Contaminated Groundwater	2	Waste Treatment Plants
1	Landfill	1	Burn Area

CONTAMINANTS OF CONCERN:

Explosives, Semi-volatiles, Volatiles, Total Petroleum Hydrocarbons, Metals

MEDIA OF CONCERN:

Groundwater and Soil

COMPLETED REM/IRA/RA:

• Waterline extension (Dec 86 & 94)	$8,000. K
• Soils incineration (Aug 88)	$10,500 K
• Hotspot Removal (Jun 94)	$1,200 K
• OU1 Groundwater Treatment Plant (Dec 98)	$9,000 K

CURRENT IRP PHASES:

RA(C) at 4 sites RA (O) at 1 site LTM at 2 sites
OPM at 1 site

PROJECTED IRP PHASES:

Long Term Monitoring (LTM) at 2 sites
RA(O) at 1 site RA at 1 site OPM at 1 site

IDENTIFIED POSSIBLE REM/IRA/RA:

IRA for RDX groundwater plume at 1 site
UXO removal by Safety Office 1 site (Burning Ground OU5)
Metals removal 1 site (pistol range)

FUNDING:

PRIOR YEAR THROUGH 2000:	$ 33,194.7 K
FY2001:	$ 1,362.0 K
FUTURE REQUIREMENTS 2001+:	$ 34,284.0 K
TOTAL:	$ 67,478.7 K

DURATION:

YEAR OF IRP INCEPTION:	1980
YEAR OF RA COMPLETION EXCLUDING LTM:	2008
REMOVAL FROM THE NPL:	2020
YEAR OF IRP COMPLETION INCLUDING LTM:	2020

INSTALLATION INFORMATION

LOCALE

CHAAP is located approximately 2 miles west of Grand Island, Nebraska, and consists of 10,520 acres (16.44 square miles) of land. The current working population at the facility is three civilians. The plant was operated intermittently over a period of +30 years from 1942 – 1974 and has remained inactive since 1974 to date. The facility maintenance contract was terminated in 1990 following the facility's addition to the property excess list. The working population exceeded 5,000 personnel during past production activities. Currently, activities at CHAAP are limited to maintenance operations, leasing of property for agriculture, leasing of buildings for storage and limited manufacturing and wildlife management. The area surrounding CHAAP is primarily rural with the town of Grand Island (population 44,000) two miles east.

COMMAND ORGANIZATION

MAJOR COMMAND: U.S. Army Materiel Command

SUBCOMMAND: U.S. Army Operations Support Command, SOSMA-ISO/Paul Woodhouse

INSTALLATION: Cornhusker AAP Installation Management Division

INSTALLATION RESTORATION PROGRAM (IRP) EXECUTING AGENCY

- **OVERSIGHT**: U.S. Army Environmental Center, Installation Restoration Division, POC: Pete Rissell
- **DESIGN/ACTION EXECUTING AGENCY**: U.S. Army Corps of Engineers, Omaha District, POC; Mr. Alvin Kam

REGULATOR PARTICIPATION

FEDERAL: U.S. Environmental Protection Agency Region VII, Remedial Project Manager Mr. Robert Koke

STATE: Nebraska Department of Environmental Quality, Remediation Section, Project Manager Mr. Ed Southwick

REGULATORY STATUS

- NPL Effective Date: 22 Jul 87
- FFA 04 Sept 90
- TRC Started: 07 Nov 91
- OU-2 ROD Sep 1998
- OU-3 ROD Dec 1999
- OU-4 ROD Feb 2000
- Project removal from NPL: FY 2020
- Constructed Pump & Treatment Plant, OU-1 Dec 1998
- Interim ROD OU1 : 18 Nov 94

MAJOR CHANGES TO ACTION PLAN FROM PREVIOUS YEAR (FY 00)

- Installation of additional extraction well to prevent the contamination plume from leaving the site.
- Discontinued operation of 3 of the original wells.

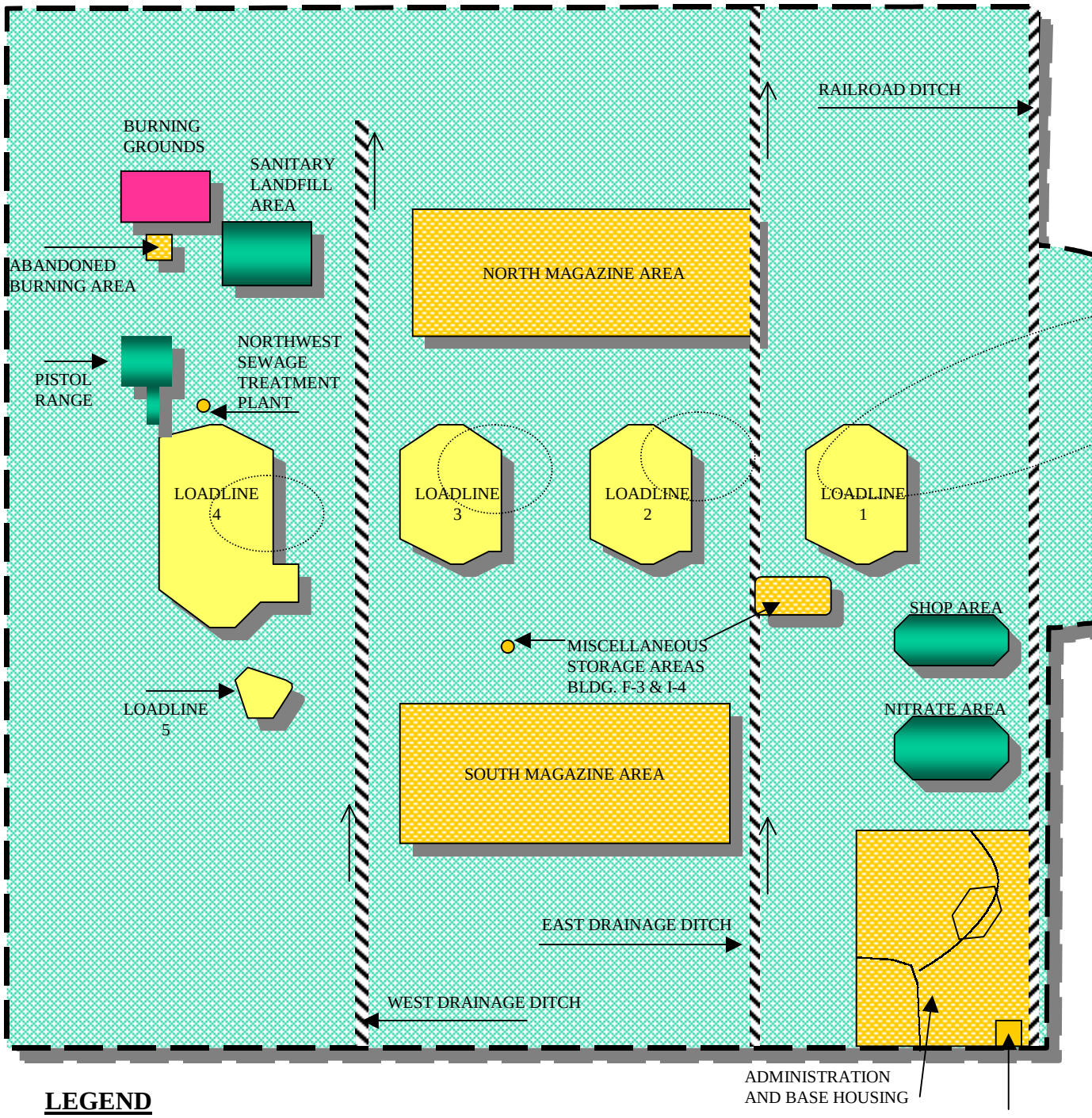
INSTALLATION DESCRIPTION

Current Activity Status:
CHAAP is currently inactive and is being excessed. Current activities at the facility are limited to industrial & agricultural leasing of the facility. Leasing activities at CHAAP bring in approximately $1M in revenue annually. "The local community has formed a reuse committee to guide the excessing of the facility, in accordance with the 1994 public law requiring the committee to excess the facility in accordancewith the Comprehensive Reuse Plan for the Cornhusker Army Ammunition Plant, 30 Dec 97."

Historic Activity Information:
CHAAP was constructed for the production of artillery, bombs, boosters and supplementary charges for World War II. The plant was operated intermittently over a period of 30 years, being activated for munitions production from 1942 to 1945 (World War II), 1950 to 1957 (Korean Conflict) and 1965 to 1973 (Vietnam Conflict). In addition, between 1945 and 1948 the ammonium nitrate area, formerly used for nitrates production, was used for the production of fertilizer. The most recent operations terminated in 1973.

Regulatory Status:
The installation was listed on the National Priorities List (NPL) on 22 July 1987 due to the waste disposal procedures at the load-line cesspools and leach pits, from disposal of wastes. CHAAP was placed on the NPL with a Hazard Ranking Score of 51.13. A Federal Facility Agreement (FFA) was signed by the U.S. Environmental Protection Agency (EPA) Region VII, the Nebraska Department of Environmental Quality (NDEQ) and the Army, effective 4 September, 1990.

CORNHUSKER ARMY AMMUNITION PLANT



LEGEND

- FACILITY BOUNDRY
- DRAINAGE DITCH FLOW DIRECTION
- AREAS OF CONCERN DISIGNATED AS OU1 (Outline of area where RDX is detected in alluvial aquifer monitoring wells)
- AREAS OF CONCERN DESIGNATED AS OU2
- AREAS OF CONCERN DESIGNATED AS OU3
- AREAS OF CONCERN DESIGNATED AS OU4
- AREAS OF CONCERN DESIGNATED AS OU5

CONTAMINATION ASSESSMENT

In March 1980 an installation assessment of CHAAP was completed by United States Army Toxic and Hazardous Materials Agency (USATHAMA). Based on the findings of that report, subsequent investigations confirmed the presence of munitions contamination and migration of contaminants. Subsequent investigations confirmed the presence of munitions contamination in soils and groundwater. A residential well survey was conducted to assure that all potential residential wells exposed to RDX were sampled. A portion of the alluvial aquifer extending northeast of Load Line 1 from the boundary of CHAAP into the northwest portion of Grand Island (Capital Heights area) has been contaminated with explosive compounds. Recent and historical sampling results indicate that RDX has migrated the greatest distance within the aquifer. The presence of RDX in the alluvial aquifer has been verified approximately 4 miles east of the CHAAP boundary. Sampling for HMX has indicated that small concentrations of this analyte also occur in the Capital Heights area.

As a result of this groundwater contamination, the U.S. Army paid for installation of a permanent water supply for residences in the area based on a drinking water criteria for RDX of 35 parts per billion (ppb). The presence of explosive compounds detected in off-post domestic water-supply wells at levels above suggested water quality criteria levels required, an alternative water supply was provided to effected residences. The Army supplied bottled water to residents by the Army from January 1984 through June 1986, until a permanent alternative water-supply system could be constructed. An extension of the city water system to the effected area began in August 1984. Due to a shallow water table, a system of dewatering wells was used to lower the water table sufficiently to allow installation of the water mains. The contaminated groundwater from the dewatering wells was discharged to Silver Creek, north of the residential area. Construction was completed in phases, with residential hookups completed in December 1986. Approximately 800 residences, including the affected area and adjacent neighborhoods that could be affected in the future, were provided an opportunity to hook up to the Northwest Grand Island Water Supply Extension.

Contaminated soils were removed and incinerated from September 1986 to August 1988. Contaminated groundwater has migrated beneath the Capital Heights area of Grand Island, Nebraska, contaminating approximately 246 drinking water sources in residences there. The installation was listed on the National Priorities List (NPL) on 22 Jul 87 due to the groundwater contamination emanating from the load-line cesspools and leach pits. CHAAP was placed on the NPL with a Hazard Ranking Score of 51.13

A Federal Facility Agreement (FFA) was signed by the U.S. Environmental Protection Agency (EPA) Region VII, the Nebraska Department of Environmental Quality (NDEQ) and the Army, becoming effective 4 Sep 90. The FFA included all response actions, including removal and remedial actions as the terms were defined by CERCLA, to be undertaken at CHAAP.

After the installation of the waterline extension the U.S. Army and the U.S. Environmental Protection Agency's Office of Drinking Water published an health advisory which recommended that the drinking water criteria for general population be established at 10 ppb for ingestion only and 2 ppb for multiple pathways. Based upon this recommendation the U.S. Army in agreement with the Nebraska Department of Health sampled additional residential wells near the area of concern using the 2 ppb health advisory as the decision point for alternative water implementation. These residents were provided bottled water as an interim action and all effected residents have been provided with the opportunity to access city water. A second waterline extension was constructed in December 1993. The maintenance of the waterline was transferred to the city. This extension covers the area east of the furthest detection of explosives.

CONTAMINATION ASSESSMENT

A Remedial Investigation and Feasibility Study (RI/FS) task for all seven study areas (the loadline sites) was awarded in Dec 91. The scope of the contract carried the Operable Unit 1 (OU1) through the interim Record of Decision (ROD). The Interim ROD for the explosive plume was signed by EPA Region VII on 29 Sep 94 and by the Army on 18 Nov 94. The Nebraska DEQ concurred on 2 Dec 94 to the Interim ROD. The design contract for the interim action ROD was awarded in Mar 94. The proposed design included extraction of 750 gpm in the source areas on-post, 150 gpm at the 20 ppb isopleth near Capital Heights, and 800 gpm at the distal end of the plume to prevent further migration of the RDX plume to the east. The Explanation of Significant Difference (ESD) implemented work on post for the primary source areas and discharge to on post canals. The explosive contaminated water is pumped through a Granular Activated Carbon system and discharged to on post canals. Award of construction contract for the on post phase was 13 Jun 97. Official OU1 groundwater treatment plant operation and maintenance began 18 Dec 98.

In addition, the waterline extension was completed in 1995 with service provided to 50 additional residents in the affected area. The removal of approximately 5000 tons of explosives contaminated soils was completed in Dec 94. Confirmation of the removal was completed during the spring of 1995. A contract was awarded in Jul 94 to fill data gaps and complete the remaining Remedial Investigation and Feasibility Study (RI/FS). This contract completed the final RI for the facility for bringing the entire site to a final ROD and excessing CHAAP. In addition, a Preliminary Assessment Screening Report and Statement of Condition was completed in FY95 for a portion of the Phase I property planned for excessing. The final RI was completed in Nov 96. The final FS was approved Feb 98 and the final ROD (no further action) for OU2 was completed in Sep 98. OU3 ROD was signed in Dec 99 and OU4 ROD was signed in Feb 2000. Remedial action for the removal of explosives and lead contaminated soil was completed in 2000.

Previous investigations will serve to support excessing actions for the preparation of the Statement of Condition (SOC) of CHAAP and plans to parcel/excess properties. The Hall County Reuse Committee determines prioritization of properties for disposal. The reuse plan was completed in Dec 97.

Projected Construction Completion and Deletion from NPL: OU1 pump and treatment plant was completed in Dec 98. Initiate partial removal from the NPL list in FY2003.

These operable units are as follows:

- Operable Unit 1: LAP groundwater plume (primarily TNT and RDX).
- Operable Unit 2: Areas proposed for No Further Action; Administration Base Housing Area, Abandon Burning Ground, Magazine Areas, Drainage Ditches and Miscellaneous Storage Areas
- Operable Unit 3: Nitrate Area, Pistol Range, Shop Area, Sanitary Landfill (explosives VOCs, and metals)
- Operable Unit 4: LAP Facility soils, sediments and surface water. All other areas of concern.
- Operable Unit 5: Burning and Demo Grounds (explosives and metals)
- See map

PREVIOUS STUDIES

Title	Author	Date
1996 Annual Sampling LTM Program	URS Woodward Clyde	July 97
OU3 and OU5 LTM Report	Hydrogeologic Inc.	1-Sep-00
Draft ReportMarch 2000 Annual Sampling Event For Long Term Monitoring	URS Woodward Clyde	1-Jul-00
Draft Groundwater Flow & Contaminant Fate & Transport Modeling	URS Woodward Clyde	1-Mar-00
OU4 ROD	ICF Kaiser Inc	1-Feb-00
OU3 ROD	ICF Kaiser Inc	1-Dec-99
1999 Annual Sampling Event for LTM Program	URS Woodward Clyde	1-Jul-99
Groundwater Flow Modeling	URS Woodward Clyde	1-May-99
EBS	USACHPPMS	1-Nov-98
June 1998 Annual Sampling Event for long -term monitoring program	Woodward Clyde	1-Oct-98
OU2, ROD	ICF Kaiser Inc	1-Sep-98
1997 Annual Sampling LTM Program	URS Woodward Clyde	1-Mar-98
Proposed Plan- OU3 and OU4 Public Meeting	USACE	1-Feb-98
Underground / Above Ground Storage Tanks, UST / AST site Investigation, Final	AFC	1-Oct-97
Environmental Assessment / FONSI, OU1 Groundwater Treatment Plant	COE, Omaha District	1-Jul-97
Feasibility Study - Operable Unit One (Unsaturated Zone) and Operable Unit Three, Final Document	AEC	1-May-97
Proposed Plan - OU2 Public Meeting includes Restoration Advisory Board (RAB) Briefing	AEC	1-Mar-97
Proposed Plan (Final) No Further Action OU2 (Administration Area, Magazines, Housing, Miscellaneous Storage, Abandoned Burning Grounds, Drainage Ditches)	AEC	1-Feb-97
Explanation of Significant Differences (ESD) & Related Public Meeting Documents for OU1 Record of Decision (ROD)	AEC & EPA	1-Feb-97
OU2 Remedial Investigation Addendum, Final Document "No Further Action"	AEC	1-Nov-96
Symptom & Disease Prevalence-Health Study- Final Report	ATSDR	1-Sep-96
Remedial Investigation Report CHAAP, U.S. AEC Final Chapters	ICF Kaiser Inc	1-Sep-96
Document: Explanation of Significant Differences (ESD) AEC Change in Effluent Water Discharge Location	AEC	1-May-96
Report, AEC/ICF Kaiser Remedial Investigation/Feasibility Study RI/FS of Tanks UST/AST	ICF Kaiser Inc	1-May-96
Report, Groundwater Interim remedial Action Design-Basis Model	Dames & More Inc.	21-Sep-95
Concept Design Analysis, OU-1	RUST Corporation	1-Aug-95
Technical Plan, Part A & B RI/FS	ICF Kaiser Inc	1-Jun-95
Quality Assurance Project Plan	ICF Kaiser Inc	1-Jun-95
Preliminary Assessment Screening (PAS) of Agricultural Tracts 41, 42, 44, 53, 54, 55, 56 & 57	AEC	1-May-95
RD/RA Predesign Technical Summary OU1 Groundwater	RUST Corporation	1-Feb-95
Background Data review & Evaluation	ICF Kaiser Inc	1-Dec-94

PREVIOUS STUDIES

Title	Author	Date
Work Plan OU1 Groundwater	RUST Corporation	1-Nov-94
Record of Decision (ROD) Summary, Operable Unit One	AEC	29-Sep-94
Groundwater Modeling	Watkins-Johnson Inc.	1-Sep-94
Public Availability Session - Groundwater Cleanup	CAAP	4-May-94
Proposed Plan CAAP, Operable Unit One Explosives Groundwater Plume	AEC	1-May-94
Focused Feasibility Study for Groundwater Operable Unit One	AEC & Watkins-Johnson Inc.	1-Mar-94
Initial Screening of Technologies	AEC & Watkins-Johnson Inc.	1-Jul-93
Plant Site Characterization Report	AEC & Watkins-Johnson Inc.	1-Jun-93
Facts Sheet, Flooded Basements & RDX	AEC & Watkins-Johnson Inc.	1-May-93
Site Characterization report	AEC, Stollar	19-Dec-92
Assessment of Chemical ARARs & Pump Test	USATHAMA	16-Oct-92
Public Health Assessments for Cornhusker AAP	ATSDR	11-Aug-92
Engineering Evaluation/Cost Analysis	AEC	1-Jul-92
Remedial Investigation/Feasibility Study	AEC	24-Jun-92

ER, A
DSERTS SITES
OU1

Operable Unit One (OU1) is comprised of the explosives-contaminated groundwater plume, which originates from the Load Line Buildings 1-5. An interim ROD has been completed for OU1 and a pump-and-treat system is currently on-line. The pump-and-treat system consists of seven extraction wells (four operational) with a total estimated groundwater extraction rate of approximately 750 gallons per minute, sand filters and a carbon adsorption system.

CAAP-010

LOAD, ASSEMBLE AND PACK FACILITIES, GROUNDWATER

SITE DESCRIPTION

The 5 Load Assemble and Pack (LAP) facilities at CHAAP constitute the major set of buildings and center for operations at the site during munitions production years. Munitions production within the load lines at CHAAP required use and disposal of large amounts of water. Major operations where explosives waste-water were produced included: screening, melting and mixing, rod and pellet manufacturing, remelt and refill, and washing and laundry.

Physical screening operations were conducted as the first process for incorporating explosives (i.e., 2.4.6-TNT and RDX) into munitions. Explosives were received in flake form and screened and sifted for material handling purposes. Waste-water was generated in the operation by the ventilation systems which collected explosive dust generated by the screening operation and washed it from the air with Schneible units (wet scrubbers). The water from the Schneible units was run through settling tanks and recycled; however, excess waste-water was produced. Waste-water was also generated from periodic wash-down of machinery and interior building surfaces. The waste-water was disposed via interior building drains into a sack sump (concrete pit) that was equipped with a filter bag. The bag, made of canvas-like material, was designed to filter out the solid explosive particles. The waste-water was then transferred via open concrete channels into a circular earthen impoundment. The impoundment wall is masonry-lined with the bottom open to the sand and gravel strata. An overflow channel was routed from the impoundment to a leaching pit that was designed to handle any water that did not infiltrate into the bottom of the impoundment. This overflow occurred due to the limited filtering capacity of the sack sump to trap explosive particulates. Particles were periodically scraped from the bottom of both the earthen impoundments and leaching pits and ignited at the Burning Grounds (CAAP-005, OU5) located in the northwest section of CHAAP.

During the Installation Restoration Incineration Program (IRIP) (1988) it was determined that 58 impoundments had received explosives contaminated waste-water.

It was determined that soil would be removed from the impoundments if concentrations were greater than 5 parts per million (ppm) for 2,4,6-TNT, 10 ppm for RDX, 15 ppm for 1,3,5-TNB, 0.5 ppm for 2,4-DNT. Several guidelines, originally incorporated into the proposed excavation plan, related to the distance between the water table and the impoundments bottom and the location of adjacent building foundations. Soil would be removed from the bottoms of the impoundments until action levels were met (a depth of 6 ft) or the excavations had reached a depth 1 ft below the groundwater level, whichever occurred first. Additional guidelines specified that soil would be removed laterally until the action levels were met, or until building foundations were threatened by operations. Due to the high water table conditions at the time of the scheduled excavations, the criteria regarding the depth of the soil removal were changed to require meeting action levels or until soil had been removed to a depth of 5 ft below the water-table surface, whichever occurred first. Soil was removed in 29 of the 58 impoundments in spring 1988 to the point where action levels were met. In the other 29 impoundments soil was removed to 5 ft below the water table. In these impoundments concentrations of one or more of the explosive compounds were still above action levels. Action levels were achieved in all but two instances in the lateral direction.

In the fall of 1990, surface soil samples were collected by ICF Kaiser Engineers. Analytical results showed high concentrations of 2,4,6-TNT (3,200 ug/g and 6,000 ug/g) and elevated concentrations of lead (175 ug/g) and chromium (58.5 ug/g) in samples collected near Building 1L-10 in Load Line 1. Elevated concentrations of chromium (25.1 ug/g) and lead (135 ug/g) occurred in a sample taken southwest of the Building 1L-18 along the railroad tracks at the north end of this load line (Figure 2.2-8) RDX, NB, HMX and 1,3,5-TNB were detected at concentrations below 100 micrograms per gram (ug/g) but above Certified Reporting Limits (CRLs) in several other samples.

CAAP-010

LOAD, ASSEMBLE AND PACK FACILITIES, GROUNDWATER

SITE DESCRIPTION, contd.

Phase I RI: Twenty sites with surface soil containing 246TNT at concentrations greater than 5 ug/g were identified in the LAP area based on field screening analytical results. The lateral extent of these "hot spots" range from approximately 40 to 380 ft. Three of the remaining cesspools have 246TNT level contamination above 5 ug/g. Results also indicate that four non-explosive waster-water cesspools contained Cr and Pb above levels of concern. Isolated areas of petroleum hydrocarbons were detected ranging from 40 to 7,000 ug/g. Soil removal and off-site treatment of 5,000 tons of soil from 25 removal areas was carried out by the Army in 1994.

Phase II RI: Confirmation of the FY94 removal action was completed in June FY96. A more detailed background data collection was conducted to determine the elevation of metals in the LAP soils. In addition, work was carried out to determine the potential of contamination beneath the LAP structures. Samples from the Nov 96 RI have shown minimal amount of contamination below the LAP structures and indicated complete removal of explosives from the soil in all but IRA site 4 at Load Line 1 (1400 ug/g).

PROPOSED PLAN

Proposed Plan: Perform RA (O) and LTM of explosive contaminant plume and amend the ROD.

IRP STATUS

RRSE RATING: High Risk

CONTAMINANTS OF CONCERN:
Explosives, Organics, Metals

MEDIA OF CONCERN:
Groundwater

COMPLETED IRP PHASE:
PA/ SI, Phase I RI, RA Interim ROD, RD,Phase II RI, FS, PP

CURRENT IRP PHASE:
Interim ROD, RA(O), LTM

FUTURE IRP PHASE:
RA(O) & LTM

CONSTRAINED COST TO COMPLETE

PHASE	2001	2002	2003	2004	2005	2006	2007+
RI/FS							
IRA							
RD							
RA(C)							
RA(O)	1019	1135	1135	1135	1135	1135	17676
LTM	236	236	236	236	236	236	2124
LTO							

PROJECTED TOTAL: $27,910,000

ER, A
DSERTS SITES
OU2

Operable Unit Two (OU2) is comprised of The Administration and Base Housing Areas, Abandoned Burning Area, Drainage Ditches, Magazine Areas, Miscellaneous Storage Areas, and Sewage Treatment Plants. A ROD for No Further Remedial Action has been completed for OU2 (1998) because there is no indication of adverse effects from contact with environmental media at this operable unit.

ER, A
DSERTS SITES
OU3

Operable Unit Three (OU3) is comprised of Non-Active Demolition Debris Landfill (CAAP-003), and Motor Pool/Shop Area (CAAP-008). The Nitrate Area that exists in this OU is part of the Motor Pool in DSERTS. This OU includes the north half of CAAP-004, the Pistol Range. The OU3 ROD was completed in 2000. Remedial actions began in May and contaminated soils removal will be completed in calandar year 2000.

CAAP-003, OU3
NON-ACTIVE DEMOLITION DEBRIS LANDFILL

SITE DESCRIPTION

The Sanitary Landfill is located in the northwestern part of the installation, immediately south and east of the Burning Ground (CAAP-005, OU5). The Sanitary Landfill encompasses approximately 55 acres and opened in 1969. The exact date of cessation of landfill activities is unclear; however, the site has been closed since 1988. During its operation it was used for the disposal of rubbish and trash, scrap wood, and inert construction materials. Approximately 24,090 cubic yards of these materials were buried annually in 6 to 10 ft deep trenches. A recent survey of tenants at CHAAP by ICF Kaiser indicates that small quantities of liquid waste (approximately 5 gal per month), possible inclusion of plasticizer, acetone, dimethylaniline, resin emulsifier, isopropyl and polyvinyl alcohol, aluminum trihydrate, and ethanolamine, were disposed at the Sanitary Landfill by one tenant during the period from 1978 to 1981. Mason and Hanger (former GOCO contractor) personnel report that contaminated metal may have been landfilled at the site. Rocket fuses were also detonated in the area of the landfill.

Inorganic constituents detected in the wells included barium (5.12 to 109 ug/1) and iron (1,010 to 3,130 ug/1). Wells G0039 and G0041 contained the organic analytes 1,1,2-trichloro-1,2,2-trifluoroethant (Freon) (2,000 ug/1) and 2,4-D (0.076 ug/1) respectively. Wells G0037 and G0040 contained an unknown semi-volatile compound, and Well G0038 contained 1,2-DCE (I 0.68 ug/1), acetone (48.51 ug/1), and five unknown organic compounds at concentrations ranging from 5 to 30 ug/l.

Phase I RI: Five exploratory pits were trenched in July 1992 based on the completed geophysics results. Analytical results indicate a wide variety low level organic and one detection of 246TNT at 12.9 ug/g.

Phase II RI: No significant levels of contamination were detected in August 1994, during this round of sampling. Elevated levels of metals were detected in groundwater (Sb ranging from 64.5 ug/l-72.4 ug/l in G0038 and G0041 and Mn ranging from 1.5-19.2 ug/l in 0037, 40, 41 & 62). In addition, low levels of organics were detected, below RBCs in the burning cages. Low levels (5-380 ug/l) of Freon contamination were also found emitting from the Pistol Range and Burning Ground. The regulatory standards available for Freon 113 are the California MCL 1,200 ug/l and the Tap Water MCL 59,000 ug/l.

PROPOSED PLAN

Construction contract closeout.

IRP STATUS

RRSE RATING: High Risk (1A)

CONTAMINANTS OF CONCERN:
Explosives, SVOC

MEDIA OF CONCERN:
Groundwater, soil

COMPLETED IRP PHASE:
PA/SI, RI/FS, PP

CURRENT IRP PHASE:
RA(C)

FUTURE IRP PHASE:
RC

CONSTRAINED COST TO COMPLETE

PHASE	2001	2002	2003	2004	2005	2006	2007+
RI/FS							
IRA							
RD							
RA(C)	16						
RA(O)							
LTM							
LTO							

PROJECTED TOTAL: $16,000

CAAP-004, OU3
CLAY PIT DISPOSAL AREA / PISTOL RANGE

SITE DESCRIPTION

PISTOL RANGE:

The Pistol Range is located near the western boundary of CHAAP northwest of Load Line 4 covering an area of about 30 acres. The site contains a large berm, which was used as a backstop for small arms fire, several picnic/firearm-loading tables, and a 50-ft square concrete pad formerly used for temporary storage in association with demolition and destruction of explosive materials. The pistol range is actively used by the Nebraska State Patrol.

The Pistol Range was the site of a destruction area for all the scrap and reject explosives generated by the Line V Aerial Mine Program. Based on review of correspondence in Mason & Hanger files, the site, referred to here as the "Demolition Ground," appears to have been active in the capacity from April 1968 until spring 1969. The Standard Operating Procedures (SOPs) for the "Pistol Range Demolition Area" provide operational guidelines for the following operations:

- Static ejection of mines from canisters
- Burning RDX and desensitized lead azide
- Destruction of canisters by detonation
- Destruction of mines by detonation
- Disposal of RDX contaminated material
- Destruction of XM45E1 mines by burning
- Destruction of lead azide (bulk) by detonation
- Disposal of Freon contaminated with explosives

According to a Mason & Hanger engineering drawings, burning and demolition operations took place north of the berm in a series of seven burning pits or culverts which were 4 ft deep, ranging from 2 to 4 ft in width and 8 to 40 ft in length. A Mason & Hanger work order dated 27 May 1969 calls for building fence around "five abandoned and filled trenches," indicating that demolition activities had taken place in at least that many burning pits or culverts. The SOPs describe decanting operations in association with some of the demolition and destruction activities. The above referenced engineering drawings depicts a decanting station and leaching pit south of the berm on the east side of the Pistol Range access road.

A 1969 aerial photograph confirms the existence of a cleared area with several visible pits located north of the berm. It also shows another cleared area corresponding to the general location on the drawing for the decanting station and leaching pit. These areas were taken out of the leasable portion of the facility. Prior to FY95 this area was under cultivation. The status of this area will be reevaluated with the analytical results of the OU3 RI.

The SOPs indicate that decanting and demolition involved Freon, lead azide, RDX, fuel oil, "approved solvents," and ceric ammonium nitrate. A review of documents and records by ICF Kaiser during the Excessing Assessment provided no information on the quantities of materials disposed of during decanting and demolition operations.

Phase I RI: (Aug 1995) Heavy metals, petroleum hydrocarbons and explosives were detected in samples collected from the exploratory pits dug to the north of the Pistol Range berm. The placement of the pits was based on aerial photographs, geophysical data, and some historical facility drawings. Lead contamination was detected up to 3,400 ug/g. Additional groundwater wells, test pits and soil samples have been completed to determine the water quality down-gradient of the former burning pit area and the extent of soil contamination with the burn pits. Results of this effort were included in the OU3 RI.

CAAP-004, OU3
CLAY PIT DISPOSAL AREA /PISTOL RANGE

SITE DESCRIPTION, contd.

Phase II RI: Freon was detected in the sampling of groundwater through mini-wells located in decanting area. Seven areas were identified by the electomagonmeter survey. The seven anomalies were located in the same area as seven of the ten test trenches in the 1993 sampling effort. The trenches were then sampled for groundwater and subsurface contamination. Test trench PRST08 contained burnt wood, fiberglass, spray paint cans and blisterpacks. Soil samples showed concentrations of RDX (1500 ug/g), HMX (200ug/g) and TPH (448 ug/g) and low levels PAHs. Pb, Be, FE, as exceeded industrial RBCs. PRST02, 03 09 & 10 detected elevated metals, but no VOC's or explosives above regulatory limits.

The backstop was sampled for metals contamination. There were elevated Pb levels in the soil (1400-150,000 ug/g); however, no Pb was detected in groundwater. The determination was made that due to current site activity, future remediation does not qualify for ER,A funds. Remediation of site for lead contaminants to residential scenario was due to prolonged NDEQ informal dispute of the initial industrial scenario.

PROPOSED PLAN

Consturction contract closeout.

IRP STATUS

RRSE RATING: High Risk (1A)

CONTAMINANTS OF CONCERN:
Explosives and lead

MEDIA OF CONCERN:
Soil, Groundwater

COMPLETED IRP PHASE:
PA/SI, RI/FS

CURRENT IRP PHASE:
RA(C)

FUTURE IRP PHASE:
RC

CONSTRAINED COST TO COMPLETE

PHASE	2001	2002	2003	2004	2005	2006	2007+
RI/FS							
IRA							
RD							
RA(C)	6						
RA(O)							
LTM							
LTO							

PROJECTED TOTAL: $6,000

CAAP-008, OU3
MOTOR POOL AND SHOP/NITRATE AREAS

SITE DESCRIPTION

This site is made up of the Motor Pool Area and the Shop/Nitrate Area which are in completely seperate locations.

SHOP AREA: The Shop Area is located in the southeast portion of the facility, south of Load Line 1, covering an area of about 1,500 ft x 2,000 ft and includes 28 buildings and sheds. The Shop Area consists of the installation laundry and associated settling basin for laundry waste-water; vehicle, equipment and other operations maintenance facilities; rail loading and unloading area; areas used for open storage; and under-ground and above ground storage tanks. Operations in the Shop Area center around maintenance support for the entire CHAAP facility and involve the use and storage of various potentially hazardous substances. A report noted quantities of floating oil on the basin surface and heavy oil accumulation in the waste stream.

Phase I RI: The results show that Petroleum hydrocarbons and low level PCB contamination exist in the area in and around the shop area. Further delineation was completed during the summer FY99. The data analysis was included in the CHAAP OU3 RI. A leaking above ground storage tank was removed by HQ, IOC in Sep 98. Removal of contaminated soils and LTM will be performed

IRP STATUS

RRSE RATING: Low Risk (3A)

CONTAMINANTS OF CONCERN:
TPHC

MEDIA OF CONCERN:
Groundwater, Soil

COMPLETED IRP PHASE:
PA/SI, RI/FS

CURRENT IRP PHASE:
OPM

FUTURE IRP PHASE:
RA(C), OPM, LTM

PROPOSED PLAN

A TCE plume will continue to be monitored for natural attenuation to the satisfaction of the regulatory agencies FY00-FY04. Perform RA of petroleum contaminated soils and LTM.

CONSTRAINED COST TO COMPLETE

PHASE	2001	2002	2003	2004	2005	2006	2007+
RI/FS							
IRA							
RD	40	40	55	50	3	3	27
RA(C)			400	25			
RA(O)							
LTM				10	10	10	90
LTO							

PROJECTED TOTAL: $763,000

ER, A
DSERTS SITES
OU4

Operable Unit Four (OU4) is comprised of Pink Water Disposal Pits (CAAP-001*,CAAP-002*), Clay Pit Disposal Area and the unsaturated zone (0 - 6 feet below ground surface) of Load Lines 1-5. (CAAP-004 is combined in DSERTS with the Pistol Range of OU3)

*See page 19 for sub-sites

CAAP-004, OU4
CLAY PIT DISPOSAL AREA

SITE DESCRIPTION

This DSERTS site is made up of the Clay Pit and the Pistol Range (in OU3).

CLAY PIT: The gravel and clay pit area is located in the western part of CHAAP east of the Southern half of Load Line 4. The area measures roughly 600 ft by 1,800 ft and is covered by natural grassland vegetation. Ninth Avenue forms the east boundary of the area. Areas to the north and east of the gravel and clay pit area are leased and cultivated for crops.

Landfill activities in the gravel and clay pit area were reported in the Installation Assessment and by EPIC. There is no record regarding the types and quantities of wastes involved in these activities. The Installation Assessment indicated that the clay pit had been used for the disposal of construction material along with crankcase oil, battery cables and trash. An excavated area with debris and trenches, along with depressions containing standing liquid were noted in aerial photos.

Phase I RI: July 1992 compounds detected include 135TNB, 2A46DT, 246TNT, HMX, RDX, petroleum Hydrocarbons. Most of the contamination is bounded in the upper portion of the soils, i.e. 246TNT at the surface has a concentration of 6,900 ug/g and a concentration of 4.7 ug/g at 10.5 feet below ground surface. Further sampling and analysis was conducted in conjunction with the OU2 RI. The extent of the petroleum hydrocarbon contamination will be presented in the OU2 RI.

Phase II RI: August 1994 compounds detected were TPH up to 9,420 ug/g and low levels of PAHs and VOCS.

PROPOSED PLAN

No contaminants detected above cleanup level. Site complete.

IRP STATUS

RRSE RATING: High Risk (1A)

CONTAMINANTS OF CONCERN:
Explosives and lead

MEDIA OF CONCERN:
Soil, Groundwater

COMPLETED IRP PHASE:
PA/SI, RI/FS

CURRENT IRP PHASE:
RA(C)

FUTURE IRP PHASE:
RC

CONSTRAINED COST TO COMPLETE

PHASE	2001	2002	2003	2004	2005	2006	2007+
RI/FS							
IRA							
RD							
RA(C)	6						
RA(O)							
LTM							
LTO							

PROJECTED TOTAL: $6,000

ER, A
DSERTS SITES
OU5

Operable Unit Five (OU5) consists of one site, CAAP-05 Burning Grounds. The Burning Grounds was designated as OU3 in the Feasibility Study. Due to safety issues posed by unexploded ordnance, the site was removed from OU3 and redesignated as OU5.

CAAP-005, OU5
DEMO AND BURNING GROUND

SITE DESCRIPTION

The Burning Ground is located in the northwest corner of the installation and covers an area of approximately 1,200 ft x 800 feet. The area is presently not in use and is covered by natural grassland vegetation. A portion of the site contains unexploded ordnance from past fail-detonation attempts. This tee-shaped area is fenced and labeled "Restricted Area." Regions adjacent to the site are leased and cultivated for crops. The Burning Ground has been used since the early history of CHAAP for the burning, demolition and disposal of a variety of materials including 2,4,6-TNT, RDX, tritonal, aluminum powder, ammonium nitrate, and lead azide. The occurrence of a series of trenches is indicated on past aerial photos and has been confirmed by preliminary results of recent geophysical investigations by ICF Kaiser. In December 1967 several attempts were made to detonate canisters and drums filled with mines and mixed explosive waste. Several of these detonations resulted in scattering of explosive debris throughout the area. In April 1968 the demolition area was soaked with oil and ignited, and subsequently compacted using a tractor and roller. An area south of the restricted area was also historically used for burning explosive waste material.

During the excavation and incineration program (spring 88-90), construction materials from the contaminated surface impoundments and materials used in the incineration process were thermally treated at the Burning Ground. Approximately 5,549 cubic yards of explosives-contaminated soil were excavated from the earthen surfaces of the burning pads in association with closure of the site following the thermal treatment operations.

Phase I RI: Burning Ground area contains five sites with 2,4,6-TNT levels exceeding the 5 ug/g level in 1990. Groundwater results indicate the presence of two anomalies associated with freon and sulfates. The freon levels range up to 3000 ug/kg. Currently no criteria for groundwater freon levels exist. Since the pH level of the water is neutral the sulfates are attributed to seams of gypsum which is commonly occurring through that region of Nebraska.

Phase II RI: Explosives were not detected above 2 ug/l in samples taken 1994-5. Freon concentrations in groundwater increased across the site and ranged from 36 ug/l 3,000 ug/l. The risk was associated with these compounds. These concentrations fell under EPA Region 9 Tap Water PRGS, but above California MCLs. Within the restricted zone, explosive concentrations in soil were elevated. TNT ranged from 2.46 5,000 ug/g, TNB .5-15 ug/g and RDX below the industrial RBCS. The ABA is also part of this area and no contamination was found on this site. The site has been proposed for No Further Action.

IRP STATUS

RRSE RATING: Medium (2A)

CONTAMINANTS OF CONCERN:
Explosives

MEDIA OF CONCERN:
Groundwater, Soil

COMPLETED IRP PHASE:
PA, SI, Removal Action, Fl

CURRENT IRP PHASE:
IRA

FUTURE IRP PHASE:
RI, FS, RD, RA, LTM

Phase III RI: HQ, IOC initiated visual UXO surficial inspections in Sep 98. Surface removal of vegetative growth was accomplished by controlled burning which resulted in a secondary detonation. HQ, IOC has performed preliminary site investigation by Ferex Imaging and access clearance to the trench containing approximately 100,000 pound of gravel mines in the original containers.
Incremental funding for UXO removal will be complete in FY02

PROPOSED PLAN

The OSC Safety Office continues removing UXO and will obtain DDESB certification for future land designation. Perform site characterization for FS, PP, ROD, and OPM. RD, RA, and LTM pending ROD.

CONSTRAINED COST TO COMPLETE

PHASE	2001	2002	2003	2004	2005	2006	2007+
RI/FS			1359	500			
IRA							
RD	45	45	45	100	295	45	
RA(C)						2750	
RA(O)							
LTM							405
LTO							

PROJECTED TOTAL: $5,589,000

CAAP-005, OU5
DEMO AND BURNING GROUND

ER, A
DSERTS SITES
RESPONSE COMPLETE

CAAP-006
LOAD LINE WWTP

SITE DESCRIPTION

The Load Line Waste Water Treatment Plant located north of Load Line 4 served Load Lines 4 and 5 during periods of production. Two interconnected, bentonite-lined sewage stabilization lagoons were completed in 1974, northeast of Load Line 2. However, they were never placed into service.

Potential exists for past introduction of explosives and other contaminants into the sewer system that served Load Lines 4 and 5, but not in the lined lagoons. Contaminants that did not biodegrade or volatilize in the sewage treatment plant may have carried over in the effluent into unlined drainage ditches.

This WWTP, located north of Load Line 4, consisted of an Imhoff tank, sludge pit, trickling filter and chlorinator tank. According to a former maintenance foreman at CHAAP, the chlorinator tank was never used. Solids from the Imhoff tank drained into an open sludge pit while the liquids were routed to the trickling filter. The trickling filter consisted of a rock-filled concrete tank with a spreader bar. Effluent from the trickling filter drained northeastward into an intermittent drainage and then north toward the Sanitary Landfill.

Sampling of the soil in August 1992 in this area was included in the sampling efforts under the OU2 RI. Groundwater monitoring Well G0012 is located less than 100 feet southeast of that point where effluent from the trickling filter flows into the intermittent ditch and is screened in the upper middle part of the alluvial aquifer from 13 to 28 ft bgs. Analyses for explosives, lead, aluminum and nitrates were performed on samples from this well in 1982. Aluminum was the only analyte detected in the well and its concentration was 122 ug/l. Volatile organic compounds were analyzed in 1984 and trichloroethylene was detected at a concentration of 0.69 ug/l.

Phase I RI: The results indicate only the presence of metals in the background concentration ranges. Further investigations at this site are not warranted.

IRP STATUS

RRSE RATING: Low Risk (3A)

CONTAMINANTS OF CONCERN:
Explosives, Metals

MEDIA OF CONCERN:
Soil, Groundwater

COMPLETED IRP PHASE:
PA/SI, RI/FS

CURRENT IRP PHASE:
RC

FUTURE IRP PHASE:
RC

PROPOSED PLAN

Response Complete

CAAP-007
CISD SANITARY WWTF

SITE DESCRIPTION

The Sanitary WWTF, located in the southeast part of the installation, served the administration area, staff housing area and Fire and Guard Headquarters from 1942 to 1974. This WWTF consisted of an Imhoff tank, two sludge pits, a chlorinator building and an evaporation pond. Solids from the Imhoff tank drained into two sludge pits to the south. Sludge was periodically removed and spread over the adjacent fields. Liquid from the Imhoff tank was chlorinated in the chlorinator building north of the Imhoff tank and released into a ditch that meandered north and east into an evaporation pond.

This system was replaced in 1974 by a circular bentonite-lined stabilization lagoon located adjacent to the former leaching lagoon. Very little use of the new lagoon has occurred since its installation.

No manufacturing operations have been reported in this area. Sampling of the soil or groundwater were included in the OU2 RI in 1993.

PROPOSED PLAN

No further Action.

IRP STATUS

RRSE RATING: Low Risk (3A)

CONTAMINANTS OF CONCERN:

Explosives, Metals, VOC

MEDIA OF CONCERN:

Soil, Groundwater

COMPLETED IRP PHASE:

PA/SI, RI/FS

CURRENT IRP PHASE:

RC

FUTURE IRP PHASE:

RC

CAAP-008, OU3
MOTOR POOL AND SHOP/NITRATE AREAS

SITE DESCRIPTION

NITRATE AREA:
The Nitrate Area is located south of the Shop Area on the east side of CHAAP. It consists of a main building (N-17) with six satellite buildings, a rail loading yard, a chemical analysis laboratory, several other small buildings and several open storage areas.

The nitrate area was used during World War II for the production of ammonium nitrate, and from 1945 through 1948 for the production of fertilizer. It has been used for internal and external storage and for rail loading of fertilizers and unloading of raw materials for ammonium nitrate production. In 1968 Building N-2 was modified and converted to provide a Mine Test Facility in support of operations at Load Line 5. Testing operations began on 27 May 68. Building N-17 and the rail loading yard have been leased to Cornhusker Railcar Service (CRS) for railroad car repair since 1979.

During periods of production at CHAAP prior to 1973, the chemical analysis lab was used to perform quality control operations, water analysis, and other analytical work as required for the installation. Three sheds on the south side of the laboratory were used to store acids, ether, and alcohol.

Phase I RI: Various semi-volatile compounds were detected in the Nitrate Area in July 1994. Further evaluation of the risks will be conducted to characterize the risk posed by these compounds. Petroleum hydrocarbons were also detected in the surface soils. The explosive compounds 24DNT and 2A46DT were detected in the first round of groundwater sampling at this site but were not detected in the second round.

Phase II RI: (April 1996) Nitrates, PAHs and TPHC were the only contaminants detected in soil and groundwater sampling under this effort. Well NIGWO1 had detection's of ammonia (3800 ug/L), TKN (3,240 ug/L) and nitrate/nitrites (56,000 ug/L). Soils samples resulted in TPH up to 9420 ug/g and PAHs detected near past drum storage areas.

IRP STATUS

RRSE RATING: Low Risk (3A)

CONTAMINANTS OF CONCERN:
Metals

MEDIA OF CONCERN:
Groundwater, Soil

COMPLETED IRP PHASE:
PA/SI. RI/FS

CURRENT IRP PHASE:
RC

FUTURE IRP PHASE:
RC

PROPOSED PLAN

Lead contamination in soils exceded residential scenarios but was within the industrial allowable standards. The lead was be remediated to residential standards to end NDEQ's informal dispute.

CAAP-001(AA,AB,AD,AE,AG-AV,A,B,C,F-Z), CAAP-002(B-G,I,J)

PINK WATER DISPOSAL PITS --SOILS

SITE DESCRIPTION

The study was completed, the ROD is pending signature.

Response Complete March 1995. Groundwater contamination was moved to CAAP-010 (OU1). Load line soils contamination were moved to OU4.

IRP STATUS

RRSE RATING: High Risk (1A)

CONTAMINANTS OF CONCERN:

Explosives, Organics, Metals

MEDIA OF CONCERN:

Soils

COMPLETED IRP PHASE:

PA/ SI, Phase I RI, RA Interim ROD, RD,Phase 11 RI, FS, PP

CURRENT IRP PHASE:

RC

FUTURE IRP PHASE:

RC

SCHEDULE

PAST MILESTONES

1980
PA/SI Initiation

1982
PA/SI Completion

1984-86
IRA Load Line soils

1986-94
Interim RA extended water line

1992
Site Characterization Document

1994
Interim ROD OU1 Groundwater
IRA Hotspot soils (94-95)

1996
RI OU1, 2 & 3
RD groundwater treatment plant

1997
PRI Addendum OU2
PP OU2

1998
ROD OU2
Interim RA groundwater treatment OU1

1999
UXO Safety action for OU5 by OSC
ROD OU3, Signed in December

2000
ROD OU4
RA Soils completed (OU3)

PROJECTED MILESTONES

2001
Amend OU1 ROD

2003
Partial De-listing from NPL

2015
Projected completion date of all RA

2020
LTM
Projected completion date of IRP

SCHEDULE

NO FURTHER ACTION SITES

The following sites currently require no further action under the ER,A program:

CAAP-001A	PINK WATER DISP DP-01 (LP)
CAAP-001AA	PINK WATER DISP DP-27 (CP)
CAAP-001AB	PINK WATER DISP DP-28 (CP)
CAAP-001AC	LOAD LINE 3 PINK WATER DISP DP-29 (CP)
CAAP-001AD	PINK WATER DISP DP-30 (CP)
CAAP-001AE	PINK WATER DISP DP-31 (CP)
CAAP-001AF	LOAD LINE 2 PINK WATER DISP DP-32 (CP)
CAAP-001AG	PINK WATER DISP DP-33 (CP)
CAAP-001AH	PINK WATER DISP DP-34 (CP)
CAAP-001AI	PINK WATER DISP DP-35 (CP)
CAAP-001AJ	PINK WATER DISP DP-36 (CP)
CAAP-001AK	PINK WATER DISP DP-37 (CP)
CAAP-001AL	PINK WATER DISP DP-38 (CP)
CAAP-001AM	PINK WATER DISP DP-39 (CP)
CAAP-001AN	PINK WATER DISP DP-40 (CP)
CAAP-001AO	PINK WATER DISP DP-41 (CP)
CAAP-001AP	PINK WATER DISP DP-42 (CP)
CAAP-001AQ	PINK WATER DISP DP-43 (CP)
CAAP-001AR	PINK WATER DISP DP-44 (CP)
CAAP-001AS	PINK WATER DISP DP-45 (CP)
CAAP-001AT	PINK WATER DISP DP-46 (CP)
CAAP-001AU	PINK WATER DISP DP-47 (CP)
CAAP-001AV	PINK WATER DISP DP-48 (CP)
CAAP-001B	PINK WATER DISP DP-02 (CP)
CAAP-001C	PINK WATER DISP DP-03 (CP)
CAAP-001D	LOAD LINE 4 PINK WATER DISP DP-04 (LP)
CAAP-001E	LOAD LINE 5 PINK WATER DISP DP-05 (LP)
CAAP-001F	PINK WATER DISP DP-06 (CP)
CAAP-001G	PINK WATER DISP DP-07 (CP)
CAAP-001H	PINK WATER DISP DP-08 (CP)
CAAP-001I	PINK WATER DISP DP-09 (CP)
CAAP-001J	PINK WATER DISP DP-10 (CP)
CAAP-001K	PINK WATER DISP DP-11 (CP)
CAAP-001L	PINK WATER DISP DP-12 (CP)
CAAP-001M	PINK WATER DISP DP-13 (CP)
CAAP-001N	PINK WATER DISP DP-14 (CP)
CAAP-001O	PINK WATER DISP DP-15 (CP)

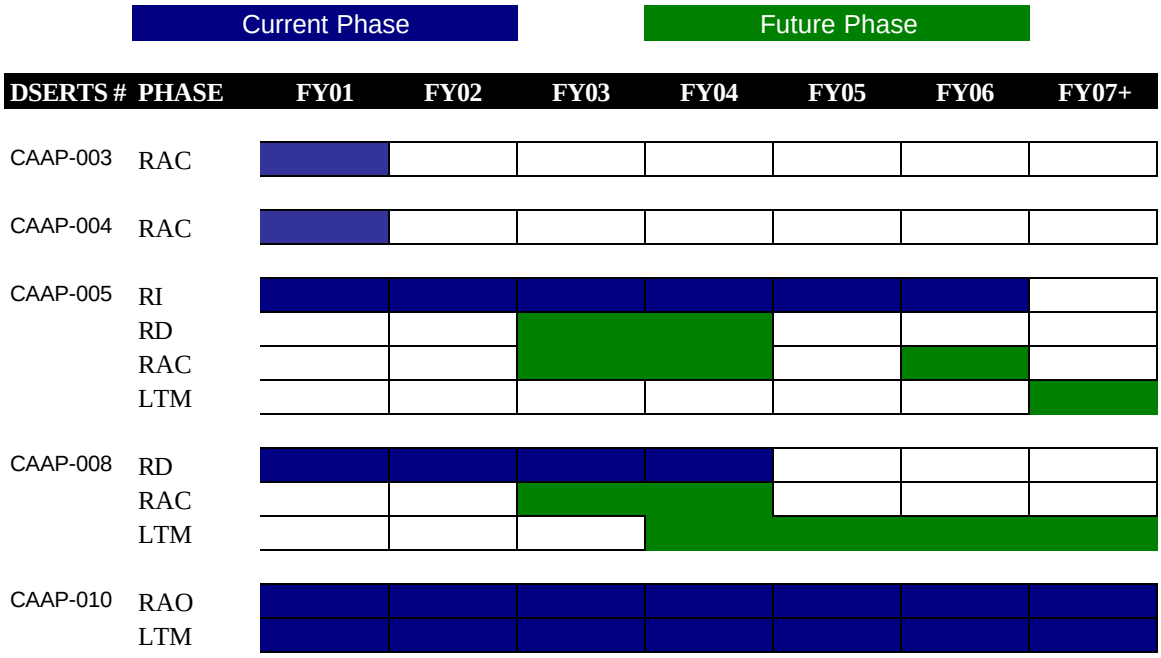
SCHEDULE

NO FURTHER ACTION SITES
Continued

CAAP-001P	PINK WATER DISP DP-16 (CP)
CAAP-001Q	PINK WATER DISP DP-17 (CP)
CAAP-001R	PINK WATER DISP DP-18 (CP)
CAAP-001S	PINK WATER DISP DP-19 (CP)
CAAP-001T	PINK WATER DISP DP-20 (CP)
CAAP-001U	PINK WATER DISP DP-21 (CP)
CAAP-001V	PINK WATER DISP DP-22 (CP)
CAAP-001W	PINK WATER DISP DP-23 (CP)
CAAP-001X	PINK WATER DISP DP-24 (CP)
CAAP-001Y	PINK WATER DISP DP-25 (CP)
CAAP-001Z	PINK WATER DISP DP-26 (CP)
CAAP-002AC	LOAD LINE 1 PINK WATER DISP DP-49 (CP)
CAAP-002B	PINK WATER DISP DP-50 (CP)
CAAP-002C	PINK WATER DISP DP-51 (CP)
CAAP-002D	PINK WATER DISP DP-52 (CP)
CAAP-002E	PINK WATER DISP DP-53 (CP)
CAAP-002F	PINK WATER DISP DP-54 (CP)
CAAP-002G	PINK WATER DISP DP-55 (CP)
CAAP-002H	LAUNDRY FAC PINK WATER DISP DP-56
CAAP-002I	PINK WATER DISP DP-57 (CP)
CAAP-003J	PINK WATER DISP DP-58 (CP)
CAAP-006	SWWTP
CAAP-007	CISD SANITARY WWTF (OU2)

Cornhusker AAP IRP Schedule

(Based on current funding constraints)



DEFENSE SITE ENVIRONMENTAL RESTORATION TRACKING SYSTEM

Site, 4. Installation Phase Summary Report 3/12/01

Installation: CORNHUSKER AAP
Programs: BRAC I, BRAC II, BRAC III, BRAC IV, IRP

Subprograms: Compliance, Restoration, UXO
Installation count for Programs: 1

NPL Options: Delisted, No, Proposed, Yes

Installations count for Programs and NPL: 1
Site count for Programs and NPL: 66

Phase / Status / Sites

PA

C	U	F	RC
66	0	0	0

SI

C	U	F	RC
66	0	0	52

RI / FS

C	U	F	RC
13	0	1	9

RD

C	U	F
3	0	2

RA(C)

C	U	F	RC
1	2	2	0

RA(O)

C	U	F	RC
0	1	0	0

LTM

C	U	F	N
7	0	2	55

Remedy / Status / Sites (Actions)

IRA

C	U	F
63 (240)	1 (1)	0 (0)

FRA

C	U	F
1 (1)	2 (2)	2 (2)

RIP Total: 1

RC Total: 61

Reporting Period End Date: 03/31/2001

DEFENSE SITE ENVIRONMENTAL RESTORATION TRACKING SYSTEM

Site, 9. RISK INSTALLATION ACTION PLAN REPORT 03/12/2001

Installation: CORNHUSKER AAP
Major Command: AMC

SubCommand: OSC
Program Options: IRP, BRAC I, BRAC II, BRAC III, BRAC IV

Subprogram Options: Compliance, Restoration, UXO

Site	RRSE	Media Evaluated	Phase (s) Completed	Phase (s) Underway	Phase (s) Future	#IRA Completed	#IRA Underway	#IRA Future	LTM Status	RIP Date	RC Date
CAAP-001A	1A	GW	PA			4			N		199603
		SL	SI								
CAAP-001AA	1A	GW	PA			4			N		199603
		SL	SI								
CAAP-001AB	1A	GW	PA			4			N		199603
		SL	SI								
CAAP-001AC	1A	SL	PA			4			C		199801
			RI								
			SI								
CAAP-001AD	1A	GW	PA			4			N		199503
		SL	SI								
CAAP-001AE	1A	GW	PA			4			N		199503
		SL	SI								
CAAP-001AF	1A	SL	PA			4			C		199801
			RI								
			SI								
CAAP-001AG	1A	GW	PA			4			N		199503
		SL	SI								
CAAP-001AH	1A	GW	PA			4			N		199503
		SL	SI								
CAAP-001AI	1A	GW	PA			4			N		199503
		SL	SI								
CAAP-001AJ	1A	GW	PA			4			N		199503
		SL	SI								
CAAP-001AK	1A	GW	PA			4			N		199503
		SL	SI								
CAAP-001AL	1A	GW	PA			4			N		199503
		SL	SI								
CAAP-001AM	1A	GW	PA			4			N		199503
		SL	SI								
CAAP-001AN	1A	GW	PA			4			N		199503
		SL	SI								
CAAP-001AO	1A	GW	PA			4			N		199503
		SL	SI								

Site	RRSE	Media Evaluated	Phase (s) Completed	Phase (s) Underway	Phase (s) Future	#IRA Completed	#IRA Underway	#IRA Future	LTM Status	RIP Date	RC Date
CAAP-001AP	1A	GW	PA			4			N		199503
		SL	SI								
CAAP-001AQ	1A	GW	PA			4			N		199512
		SL	SI								
CAAP-001AR	1A	GW	PA			4			N		199503
		SL	SI								
CAAP-001AS	1A	GW	PA			4			N		199503
		SL	SI								
CAAP-001AT	1A	GW	PA			4			N		199503
		SL	SI								
CAAP-001AU	1A	GW	PA			4			N		199502
		SL	SI								
CAAP-001AV	1A	GW	PA			4			N		199503
		SL	SI								
CAAP-001B	1A	GW	PA			4			N		199503
		SL	SI								
CAAP-001C	1A	GW	PA			4			N		199503
		SL	SI								
CAAP-001D	1A	SL	PA			4			C		199801
			RI								
			SI								
CAAP-001E	1A	SL	PA			4			C		199801
			RI								
			SI								
CAAP-001F	1A	GW	PA			4			N		199503
		SL	SI								
CAAP-001G	1A	GW	PA			4			N		199503
		SL	SI								
CAAP-001H	1A	GW	PA			4			N		199503
		SL	SI								
CAAP-001I	1A	GW	PA			4			N		199503
		SL	SI								
CAAP-001J	1A	GW	PA			4			N		199503
		SL	SI								
CAAP-001K	1A	GW	PA			4			N		199503
		SL	SI								
CAAP-001L	1A	GW	PA			4			N		199503
		SL	SI								
CAAP-001M	1A	GW	PA			4			N		199503
		SL	SI								
CAAP-001N	1A	GW	PA			4			N		199503
		SL	SI								
CAAP-001O	1A	GW	PA			4			N		199503
		SL	SI								
CAAP-001P	1A	GW	PA			4			N		199503
		SL	SI								

Site	RRSE	Media Evaluated	Phase (s) Completed	Phase (s) Underway	Phase (s) Future	#IRA Completed	#IRA Underway	#IRA Future	LTM Status	RIP Date	RC Date
CAAP-001Q	1A	GW	PA			4			N		199503
		SL	SI								
CAAP-001R	1A	GW	PA			4			N		199503
		SL	SI								
CAAP-001S	1A	GW	PA			4			N		199503
		SL	SI								
CAAP-001T	1A	GW	PA			4			N		199503
		SL	SI								
CAAP-001U	1A	GW	PA			4			N		199503
		SL	SI								
CAAP-001V	1A	GW	PA			4			N		199503
		SL	SI								
CAAP-001W	1A	GW	PA			4			N		199503
		SL	SI								
CAAP-001X	1A	GW	PA			4			N		199503
		SL	SI								
CAAP-001Y	1A	GW	PA			4			N		199503
		SL	SI								
CAAP-001Z	1A	GW	PA			4			N		199503
		SL	SI								
CAAP-002A	1A	SL	PA			4			C		199801
			RI								
			SI								
CAAP-002B	1A	GW	PA			4			N		199503
		SL	SI								
CAAP-002C	1A	GW	PA			4			N		199503
		SL	SI								
CAAP-002D	1A	GW	PA			4			N		199503
		SL	SI								
CAAP-002E	1A	GW	PA			4			N		199503
		SL	SI								
CAAP-002F	1A	GW	PA			4			N		199503
		SL	SI								
CAAP-002G	1A	GW	PA			4			N		199503
		SL	SI								
CAAP-002H	1A	SL	PA			4			C		199801
			RI								
			SI								
CAAP-002I	1A	GW	PA			4			N		199503
		SL	SI								
CAAP-002J	1A	GW	PA			4			N		199503
		SL	SI								
CAAP-003	1A	GW	PA	RAC					N		200106
		SL	RD								
			RI								
			SI								

Site	RRSE	Media Evaluated	Phase (s) Completed	Phase (s) Underway	Phase (s) Future	#IRA Completed	#IRA Underway	#IRA Future	LTM Status	RIP Date	RC Date
CAAP-004	1A	GW	PA	RAC		1					200106
		SL	RD								
			RI								
			SI								
CAAP-005	2A	GW	PA		RAC	3	1		F		200912
		SL	SI		RD						
					RI						
CAAP-006	3A	SL	PA						N		199809
			RI								
			SI								
CAAP-007	3A	SL	PA						N		199809
			RI								
			SI								
CAAP-008	3A	SL	PA		RAC	1			F		200412
			RI		RD						
			SI								
CAAP-009	2A	GW	PA			1			C		199708
			RI								
			SI								
CAAP-010	1A	GW	PA	RAO		2				199909	202012
			RAC								
			RD								
			RI								
			SI								

RRSE - Relative Risk Site Evaluation; Risk Category - 1=High, 2=Medium, 3=Low;

Legal Agreement - A = with agreement, B = without agreement; C = Complete, U = Underway, F = Future, N = Not Applicable

Reporting Period End Date: 03/31/2001

REM/IRA/RA ASSESSMENT

PAST REM/IRA/RA

Prior to the effective date of the Federal Facilities Agreement (FFA):

Incineration of Soils Containing Explosives in 58 cesspools and leach pits were completed in Aug 88. Contaminated soils treated as part of the removal operation included 39,926 tons of contaminated soils. Cost of completion was $9,211K.

Waterline extension was completed in Dec 86. Approximately 800 residences, including the affected area and adjacent neighborhoods that could be affected in the future, were provided an opportunity to hook up to the Northwest Grand Island Water Supply Extension. Cost for completion was $5,350K.

Removal Actions Initiated Post FFA:

Monitoring data identified 11 residents exceeding the 2 ppb drinking water Health criteria. Bottled water was provided and plans were finalized to complete the Engineering Evaluation/Cost Analysis and extend the current waterline system. The Decision Memorandum was approved on 13 Jan 93. The contract was awarded for $1,920K in Sep 93. Construction began in the Fall of 1993 and was completed in the Fall of 1994.

Geophysics and pit excavation uncovered numerous gravel mines which were experimental items produced during the Vietnam war. These mines are found in and around the exclusion zone in the burning ground. The previous fence was 3 to 4 ft high and provided little safety. The installation operated as an open post and a removal action to secure the gravel mine area with an 8 to 12 ft high security fence was initiated. Construction started in fourth quarter of FY93 and completed in Nov 94. Construction was completed at a cost of $85K.

Twenty-five hot spots of TNT contaminated soils were identified during the December 1994 Phase I RI. The areas were excavated to the levels established during the incineration of sampling and off-post incineration of sampling and off-post incineration.

CURRENT REM/IRA/RA

Interim Remedial Action:

An interim ROD for OU1 was signed 18 Nov 94. The ROD establishes the use of on-site extraction in the hot zones (source) of the plume and containment at the distal-end of the plume. ESD changed the discharge point from Platte River to an on-post canal. Carbon is used to treat the explosives and the affluent is discharged to on-post canals. The extraction well rate is 750 gallons per minute (gpm) on-post. An amendment to the ROD is proposed to delete all off-post treatment due to reduced contaminant levels attributed to natural attenuation processes.

REM/IRA/RA ASSESSMENT

FUTURE REM/IRA/RA

Possible future REM/IRA/RA/RA(O)/LTM Opportunities:

- CAAP-005, OPM, RI/FS, RD/RA, LTM
- CAAP-009, OPM, RI/FS, RD/RA, LTM

PRIOR YEAR FUNDING

FY80

Initial Assessment	50.0K

FY81

Preliminary Survey	201.8K

FY83

Preliminary Survey - Phase II	144.9K
Quantitative Chemical Analysis	73.2K

FY84

Remedial Action - Funding of Grand Island*	
Water Supply	5120.0K
Off Post Sampling and Analysis - Phase III	147.0K
Carbon Absorption Pilot Demo	93.2K
Ultimate Water Supply Study	35.0K
Groundwater Modeling	20.0K

FY85

Incineration, Phase I**	230.0K
Monitoring	120.4K
Groundwater Modeling Continuation	75.0K
Installation Support	19.1K

FY86

Non-Incineration Operation - Phase II**	1235.5K
Drinking Water System Extension	149.6K
Monitoring Dewatering Well System	14.2K
Semi-Annual Ground Water Monitoring	11.7K
Incineration**	1237.1K
NPDES Monitoring	7.0K

FY87

NPDES Groundwater Monitoring	14.8K
Incineration, Phase I and Phase II**	7346.5K

FY88

Semiannual Groundwater Monitoring	53.5K
Litigation Support	14.3K
Incineration, Phase I: Operations	319.4K

*Funding Provided by ACOE

**Incineration Related Effort Not Included in Groundwater Funds Accounting (Cost: $9,211.6K).

PRIOR YEAR FUNDING

FY89

Installation Support	1.2K
Base Excessing Studies	973.0K
Incineration**	76.1K

FY90

Base Excessing Studies	263.6K
Groundwater Monitoring	202.6K
Remedial Design Support	5.8K
Program Management (COE)	1.4K

FY91

Remedial Investigation	1856.3K
Excessing Environmental Survey	1162.1K
Groundwater Monitoring	12.5K
Project Support	3.5K
UST Removals	20.0K

FY92

Remedial Investigation	1856.3K
Excessing Environmental Survey	1162.1K
Groundwater Monitoring	12.5K
Project Support	3.5K
UST Removals	20.0K

FY93

Remedial Investigation	60.0K
Groundwater Monitoring	40.4K
Removal Action Waterline	1920.0K
Removal of UST-Fuel	180.8K

FY94

RI/FS Industrial Area (OU2)	2181.4K
RI/FS Burning Ground (OU3)	575.4K
Groundwater Monitoring	426.2K
Remedial Design/Action (OU1)	859.3K
Removal Action Waterline	316.2K
Removal Action Waterline	133.0K
Removal Action (Soils)	160.0K
Installation RD/RA	33.0K

*Funding Provided by ACOE
**Incineration Related Effort Not Included in Groundwater Funds Accounting (Cost: $9,211.6K).

PRIOR YEAR FUNDING

FY95

Soil Removal Action	180.0K
Removal Action Waterline	60.0K
IAG Groundwater Monitoring	450.0K
RD/RA (OU1)	180.0K

FY96

RI/FS Loadlines	300.0K
Final RD OU1	700.0K
Monitoring	600.0K
RA Water Line Extension	4.0K

FY97

Remedial Action OU1	9216.9K
RD/SA	156.6K
Monitoring	350.0K

FY98

Remedial Action OU1	1741.0K
RD/SA	110.0K
Monitoring	360.0K

FY99

RA/SA, CAAP-001AC, AF, D, E, 002A, H	505.0K
Installation Support	127.0K
LTO, CAAP-001AC, AF, D, E, 002A, H	1786.0K

FY00

RAC CAAP-003,004,005,008	513.0K
RA(O) CAAP-010	1,015.0K
LTM CAAP-005,008,010	322.0K

FY01

RD/RAC CAAP-003,004,005,008	107.0K
RA(O) CAAP-010	1,019.0K
LTM CAAP-010	236.0K

Total Prior Year IRP Funds	**33,194.7K**
Total Future Requirements	**34,284.0K**
Total Funding from Inception to Completion	**67,478.7K**

CORNHUSKER
AAP COST TO COMPLETE

DSERTS #	SITE TITLE	PHASE	FY01	FY02	FY03	FY04	FY05	FY06	FY07-15	PHASE TOTALS	SITE TOTAL	DESCRIPTION OF WORK
CAAP-003	Non-Active Demilition Debris	RAC	16							16	16	Construction contract closeout
CAAP-004	Clay-Pit Disposal Area	RAC	6							6	6	Contract closeout - site clean
CAAP-005	Demo and Burning Ground	IRA								0		
		RI			1359	500				1859		
		RD	45	45	45	100	295	45		575		
		RAC						2750		2750		
		LTM							405	405	5589	
CAAP-008	Motor Pool	RD	40	40	55	50	3	3	27	218		
		RAC			400	25				425		
		LTM				10	10	10	90	120	763	
CAAP-010	OU1 Groundwater	RAO	1019	1135	1135	1135	1135	1135	17676	24370		
		LTM	236	236	236	236	236	236	2124	3540	27910	
FISCAL YEAR TOTALS IN THOUSANDS OF DOLLARS			**1,362.0**	**1,456.0**	**3,230.0**	**2,056.0**	**1,679.0**	**4,179.0**	**20,322.0**	**34,284**	**34,284.0**	
		POM (Budget)	**1,362**	**1,336**	**3,230**	**3,230**	**1,336**	**1,281**	**$65,171**			
		Difference	$0	-$120	$0	$1,174	-$343	-$2,898				

COMMUNITY INVOLVEMENT

EFFORTS TAKEN:

HQ, IOC and the U.S. Army Environmental Center conducted community interviews in this spring of 1995 to determine interest in a RAB. The initial RAB orientation session was held at Grand Island City Hall, 19 April 1995. News releases were printed in the paper and announced on TV and radio. Fact Sheets were printed and distributed in the community.

RESULTS:

Less than a dozen citizens attended the initial meeting with an equal number of government personnel on hand. Many of the citizens were interested in contracts and doing business with the Army.

CONCLUSION:

Follow on RAB meetings in 1998 and 1997 resulted in poor attendance (as few as three citizens) with very little media interest.

FOLLOW-UP:

The installation (CHAAP) does not plan on pursuing a RAB, due to limited local interest.

The Technical Review Committee (TRC) was discontinued due to lack of public attendance at meetings.

There will be public availability sessions for each ROD signing.

DEFENSE SITE ENVIRONMENTAL RESTORATION TRACKING SYSTEM

Installation, 7. RAB REPORT 03/12/2001

Command: AMC **SubCommand:** OSC
Installation: CORNHUSKER AAP

RAB Established Date: **Reason RAB Not Establish:** The community has expressed no sufficient, sustained interest in a RAB.
RAB Adjourned Date: **Reason RAB Adjourned:**

TRC Date:

RAB Community Members: **Total RAB Community Members:**

RAB Government Members: **Total RAB Government Members:**

RAB Activities:

RAB Advice

TAPP Application Approval Date:
TAPP Project Title: 03/31/2001
TAPP Project Description:

Award Number	Purchase Order Award Date	Completion Date