C-554-M-3 Corrig. 5/20/92

TCT - St. Louis

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April 28, 1992
9214-00000

Commander
Rock Island Arsenal
SMCRI-EHS Attn: Jay Richter
Building 102, 1st Floor, Southwest Wing
Rock Island, Illinois 61299-5000

US EPA RECORDS CENTER REGION 5
1000053

Subject: Rock Island Arsenal Building 64 Closure Plan, Final Report

Gentlemen:

The subject document is submitted in accordance with the Scope of Work. We have revised the 100% Draft submittal based on RIA's faxed comments received April 23 and April 27, 1992 and upon telephone discussions with RIA staff. We believe the document submitted to you today fully satisfies requirements established in IEPA's December 27, 1991 letter, and IEPA's instructions for the Preparation of Closure Plans for Interim Status RCRA Hazardous Waste Facilities.

This submittal is sealed by a Registered Professional Engineer. The seal is placed on the inside title sheet and on Figure 3-1.

Attachment A includes photos of Building 64.

The drawings (except Figure 3-1) listed in Section 5 for the Final Closure Plan are to be included by Rock Island Arsenal in Attachment B.

TCT has indicated in this Closure Plan that cyanide wastes characterized as F007, F008, and/or F009 could potentially be present in certain Areas of Concern (AOCs). We have no information concerning F010 and F011 wastes referred to in the Agency's deficiency letter, Item 4, and have not listed these as potentially present.

Very truly yours,

Dennis L. Stack, P.E.
Project Engineer

Thomas M. Lachajczyk
Senior Environmental Scientist

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Enclosure

cc: J. Richter, RIA (4 copies)

CLOSURE PLAN
ROCK ISLAND ARSENAL
BUILDING #64

Prepared For:

Rock Island Arsenal
Rock Island, Illinois

This Closure Plan for Rock Island Arsenal Building 64 has been prepared to address closure requirements of 35 Illinois Administrative Code Parts 724 and/or 725. Engineering aspects of the Plan have been reviewed and approved by the undersigned Registered Professional Engineer.

4/28/92

Dennis Stack
Illinois P.E. 062-043889

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062-043889
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April 1992

9214-00000

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ATTACHMENTS

A	PHOTOGRAPHIC DOCUMENTATION - Separate Document
B	SPECIFIC REFERENCE DRAWINGS - Back Pocket and Separate Document

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1.0 PURPOSE AND DEFINITIONS

The purpose of this partial closure plan is to provide for the closure of Building 64 at Rock Island Arsenal (RIA). This is in response to apparent violations of Resource Conservation and Recovery Act (RCRA) Regulations cited in PFN-097. This partial closure plan is designed to ensure that the need for further maintenance and controls is minimized or eliminated to the extent necessary to protect human health and the environment; and the Post-closure escape of hazardous waste constituents, leachate, contaminated run-off, or waste decomposition products to the ground or surface water or the atmosphere is avoided.

When approved, a copy of this Closure Plan will be maintained on site until certification of clean closure completeness has been accepted by the Illinois Environmental Protection Agency.

In order to clarify the site specific terms applicable to this partial closure plan, the following definitions will apply:

(A) Closure of a hazardous waste (RCRA) facility refers to the action taken to secure the hazardous waste management units of a factory or plant in a manner which will protect human health and the environment in accordance with the closure requirements of 35 Illinois Administrative Code Parts 724 and/or 725.

(B) Partial Closure means the closure of a discrete portion of a hazardous waste facility, such as a surface impoundment, landfill trench, container storage unit or tank while other units or cells remain operating. In this case the discrete portion of the facility is Building 64.

(C) "Clean" Closure refers to RCRA closure which includes the removal of all wastes, waste residues, leachate, liners and soils (including groundwater) contaminated with waste or leachate that pose a present or potential threat to human health or the environment.

(D) A Hazardous Waste Management Unit (HWMU) is a contiguous area of land on or in which hazardous waste is placed, or the largest area in which there is a significant likelihood of mixing hazardous waste constituents in the same area (51 FR 16424, May 2, 1986). Building 64 is the HWMU for which this partial closure plan is submitted.

(E) Facility refers to the entire Rock Island Arsenal which includes a large number of buildings and support operations of which Building 64 is an individual HWMV.

(F) Areas of Concern (AOCs) refer to the individual vats, spills, containment pits and other specific items identified during site investigations to be potentially hazardous. These items were inventoried and are presented in Section 3 of this document as Figure 3-1 and Tables 3-1 through 3-5. When taken as a group, the AOCs represent the entire HWMU known as Building 64.

(G) Project File Number (PFN) is a number which has been assigned to each reference document utilized in the preparation of this Closure Plan. A list of those reference documents is presented in Appendix A.

(H) Apparent Violations refer to conditions observed by IEPA personnel during previous visits to Building 64 which were enumerated by the Agency in a Pre-Enforcement Conference Letter dated May, 1991.

2.0 DESCRIPTION OF FACILITY

2.1 History

RIA is located on an island in the Mississippi River between Iowa and Illinois. Upon recommendation of the Secretary of War, Rock Island Arsenal was approved by Congress as a western armory on July 11, 1862. The 384 hectares (ha) of Rock Island are divided as follows: Rock Island Arsenal, 367 ha; US Army Corps of Engineers, 4 ha; National Cemetery, 11 ha; and the Confederate Cemetery, 1 ha. The 367 ha under the control of RIA are divided into three management land uses: improved land, 80 ha; semi-improved land, 61 ha; and the remaining land encompasses 226 ha which also includes 68 ha out-leased for a golf course.

Missions of the arsenal (SIC 9711) included the manufacture of small arms during the Spanish-American War and again from 1899 to 1917. Between 1918 and 1941, RIA was utilized as a storage and repair facility for ordnance material. During this period RIA specialized in tank and armored vehicle development. During World War II, the design and manufacture of ordnance materiel increased tremendously. RIA assembled heavy guns, made heavy gun carriages, manufactured small arms, gun mounts, and recoil mechanisms and did tank repair and modification. Since World War II, depot and manufacturing operations have declined except for limited periods during the Korean and Vietnam Conflicts. The present mission of RIA is to perform manufacturing of assigned materiel and its required direct support to include engineering and product assurance. Assigned material included aircraft weapons, infantry weapons, air defense weapons, gun mounts, recoil mechanisms and carriages for tanks and artillery, armaments for tanks, special tools, tool sets and common tools and maintenance equipment. RIA provides the Armed Forces with manufacturing and support services not readily available from private industry. (PFN-153-See Appendix A for listing of all PFN references.)

2.2 Environmental Setting

2.2.1 Meteorology and Climate

This area has a temperate continental climate, with a wide temperature range throughout the year. There are some intensely hot, usually humid, periods in summer and severely cold periods in winter. Maxima of 90° or higher have occurred as frequently as on 55 days (1936), but in 1882 there were none. Zero or lower readings have occurred during every winter of record ranging from 37 times in 1874-75 to 1 time during 4 winters.

Freezing temperatures have occurred as late in spring as May 20 and as early in autumn as September 20. Precipitation usually is well distributed throughout the year. Normally the greatest amounts fall during the 177-day average crop growing season (April 21-October 14, inclusive). Substantial weather changes frequently occur at 3- or 4- day intervals, as a direct results of proximity to some of the most important storm tracks (PFN-183) The greatest amount of precipitation occurs between mid-April and mid-October. The mean annual snowfall if 67.5 centimeters (cm). (PFN-153)

2.2.2 Physiography/Topography

RIA lies on the extreme western edge of the Till Plains Section of the Central Lowland Physiographic Province in western Illinois. The bedrock in this section has been considerably modified by Pleistocene glaciation and its associated meltwater runoff. As a result, a very irregular bedrock surface covered with a thin veneer of alluvium, loess, and glacial drift is present. There is also the possibility that glacial channels filled with glacial deposits exist in the upper bedrock strata.

A very gently rolling terrain characterizes the topography of RIA. Surface elevations range from a low of 168 meters (m) above mean sea level (msl) at the edge of Sylvan Slough to a high of 181 m at Building 390 near the center of the island. Water levels of the

Mississippi River on the north side of RIA and water in the Moline Pool (Water Power Pool) behind the Arsenal Power Dam are 171 m above msl.

RIA is located just east of the axis of the north to south treading Mississippi River Arch. The Mississippi River Arch is a low, broad, gentle upwarp of bedrock strata that separates the Illinois Basin from the Forest City Basin in Iowa. The regional dip of bedrock strata at RIA is gently to the east and southeast, with the slope approximating a 0.61 m vertical drop per 30.4 m of horizontal distance. (PFN-153)

2.2.3 Geology

The overall surficial geology on the island is divided into three different types of deposition. They include: 1) Channel and backswamp deposit; 2) Natural Levee and Braided Stream deposits, and; 3) Point Bar deposits (PFN-180). Building 64 sits within a point bar deposit. This is consistent with the borehole profile described in Section 13.2.1. The above deposits are formally classified as Cahokia Alluvium and described as follows: Channel and Backswamp deposits consist of clay, silt, and fine sand; organic material usually abundant; small amounts of sand and gravel may occur in abandoned channels; alluvium in tributaries. Natural Levee and Braided Stream Deposits consist of silt and fine sand. Point Bar deposits consist of fine sands, in many places the Cahokia Alluvium is underlain by sand and gravel assigned to the Henry Formation. The Henry Formation consists of sand and gravel in terrace remnants of former valley-train outwash deposits. (PFN-153)

Both the Cahokia Alluvium and the Henry Formation are formations in the Holocene and Wisconsian stages which lie in the Pleistocene series of the Quaternary System. The bedrock which directly underlies RIA is limestone from the Pennsylvanian System (PFN-179). Because the bedrock of the Pennsylvanian System is a great deal older than the unconsolidated deposits of the Quaternary System and was extensively eroded prior to the deposition of the Quaternary System, the contact between the two systems is irregular, in places exposed at the surface and in other places deeply buried. (PFN-153)

Geologic formations expected to be encountered with depth beneath the veneer of unconsolidated soils at RIA range in age from Pennsylvanian to Precambrian. Intervening beds of Mississippian age which once covered Devonian limestone in the area were eroded prior to deposition of Pennsylvanian strata. Consequently, some thin surface exposures of Pennsylvanian beds may also be present lying directly on the eroded Devonian bedrock surface. For the most part, the top of bedrock at RIA is the Davenport Limestone Member of the Wapsipinicon formation of Devonian age. A brecciated, fractured, vuggy limestone surface of the Wapsipinicon formation lies directly beneath most of the glacial drift and the alluvium overburden at RIA. This limestone surface was subjected to considerable weathering and erosion, resulting in the formation of some solution channels and cavernous conditions. (PFN-153)

2.2.4 Surface Waters

Surface drainage of RIA is primarily via open ditches into catch basins and then through storm drain lines to outfalls located around the perimeter of the island. Generally, surface drainage from all of the buildings located west of East Avenue, between the golf course on the north and Rodman Avenue on the south, is through storm drain pipes. This drainage empties into the Mississippi River and includes runoff from the Overhaul and Assembly Shops (Building 208) located on the south side of Rodman Avenue. Drainage from a warehouse (Building 344) and the entire golf course along the north side of the Arsenal passes through storm drain outfalls into the Mississippi River. The area encompassing the test tracks and Confederate Cemetery drains south into the Moline Pool. The Small Arms Simulator, National Cemetery Area, and the Gymnasticator Building drain into a 45.8 cm cast iron drain pipe and through an outfall into Sylvan Slough Canal. The remaining areas, primarily those located south of Rodman Avenue and west of the Power Dam, drain southward through storm drains to eight outfalls spaced along the Sylvan Slough shoreline. Areas south of the warehouses (Buildings 170-199), the sanitary landfill south of Building 299, the old landfill area near the Sewage Pump House (Building 204), and open storage areas located along the southern boundary generally drain southward along the surface slope

into Sylvan Slough. (PFN-153) Reference drawings included in Appendix B include a storm drainage map with site topography.

2.2.5 Groundwater

Groundwater in the vicinity of Rock Island Arsenal is encountered in the soil overlying bedrock at several locations on the island and in three aquifers beneath the site. Depths to groundwater range from 0 to 15 feet. Indications are that the groundwater in the unconsolidated material occurs in discontinuous lenticular layers of the silt and sand. (PFN-153) The Mississippi River to the north and the Sylvan Slough to the south affect the shallow groundwater. The fluctuating river water causes a rise and fall of the groundwater surface, in the surficial material.

There are three useable aquifers located beneath RIA. The first useable aquifer is located at a depth of approximately 25 to 95 feet, in the Desmoinesian Series of the Pennsylvanian System. The second aquifer is located at a depth of approximately 170 to 400 ft, in the Niagarian Series of the Silurian System. The third aquifer is located at a depth of approximately 640 to 1650 ft, in the Champlanian Series of the Ordovician System.

The first useable aquifer formerly provided potable water to Buildings 25 and 32. The well is inactive. These buildings are in the proving grounds which are over a mile away on the most eastern section of the Island and to the southeast of Building 64. (PFN-153) Currently, water is provided by the Rock Island Arsenal potable water system.

The second aquifer has been tapped for industrial process water in Building 220 and Building 118 near the National Cemetery. Both are inactive at this time.

There is significant distance and several layers of shale between the third aquifer and the surface. Rock Island Arsenal has a deep well, Building 51, about 250 feet northwest of Building 64. This well is used only for emergency potable water, and is functioned periodically. The well water is tested by the IEPA. At one time wells located on the flood

plains and completed in the deep aquifers flowed under artesian pressure (Udden, 1986; Pratt, 1883). Continued withdrawal of water has reduced the hydrostatic pressure, so that artesian flow no longer occurs in Rock Island County. (PFN-179)

2.3 Industrial Operations

2.3.1 Facility

Industrial operations at RIA date back to the Spanish-American War. Early operations conducted at RIA included forging, smithing, tinning, production of gun carriages and powder cases, the manufacture and repair of small arms, operation of harness shops, and loading of ammunition. Later operations included the manufacture of automotive vehicles, demolition bombs and bomb racks, modification of aircraft engines, light tanks, recoil mechanisms, machine guns, rocket launchers, breech mechanisms, and Honest John and Nike Hercules launchers. More recent operations have included production of small arms, artillery components, recoil mechanisms, gun mounts, gun carriages, loaders, grenade launchers, and aircraft weapons subsystems. These operations are geared to prototype assistance, limited production orders, and orders for the production of repair parts with a critical national supply status. Current manufacturing operations include facilities for casting ferrous and nonferrous metals, sheet metal piercing and forming, forging, welding, plating, painting, operation of proof-firing ranges, paint stripping, machining, cleaning, lubricating, and metal surface treatment. (PFN-153)

2.3.2 Building 64

The metal plating shop in Building 64 had facilities for cadmium, copper, chromium, lead, nickel, and zinc plating, as well as phosphating, black oxide processing, anodizing, and acid pickling. Wastewater resulting from these operations may have contained high metal concentrations, acid or alkaline solutions, and presence of cyanide. The contaminants present due to these processes necessitated segregation of waste streams to the extent practical. The use of cyanide was eliminated from the operations at Building 64 by about

1980. The plating operations in Building 64 were finally phased out in 1991 when the new plating shop (Building 212) was accepted as a replacement facility.

Pretreatment of industrial wastes prior to pumping to the City of Rock Island Publicly Owned Treatment Works (RIPOTW) in the combined sewer was initiated in the early 1970s. Two Industrial Waste Treatment Plants (IWTP) are currently permitted by both the City of Rock Island and IEPA to discharge pretreated wastewaters to the RIPOTW. One IWTP is located at the new plating shop (Building 212) and the other (Building 65) is located in the courtyard of Building 64. (PFN-083; PFN-090)

3.0 DESCRIPTION OF WASTE MANAGEMENT UNITS

3.1 Introduction and Background

The scope of this Closure Plan has been limited to the Hazardous Waste Management Unit defined as the internal structure and contents of Building 64 at RIA. Within the limits of Building 64 there are a number of specific "Areas of Concern" (AOCs) which have been identified and inventoried (see Tables 3-1 through 3-5 and Figure 3-1. Figure 3-1 is a scale drawing which represents the present configuration of Building 64 and its contents. Figure 3-1 is contained in a map folder located inside the back cover of this document and a reduced size version is presented on page 3-27 of this section. Additional documentation of the current condition of Building 64 is presented in Attachment A (Photographic Documentation). TCT-St. Louis has prepared the following description of the type of waste management units (hazardous and non-hazardous) existing within Building 64 as of March 1992.

3.2 Description of Waste Management Units

3.2.1 General Description

Based on the results of several site visits, a review of existing RIA records, interviews with RIA personnel and discussions with IEPA personnel, the structure and contents of Building 64 have been divided into the following general categories of waste material.

I - Interior Structure/Debris/Misc. AOCs

II - Ancillary Equipment

III - Air Emission Points and Air Pollution Control Devices

IV - Process Related Tanks and Vats

V - Secondary Containment Systems

A project-specific numbering sequence has been developed during the site investigation portion of the Closure Plan preparation. A number has been assigned to each AOC associated with Building 64. It is recommended that this inventory sequence number (AOC number from Tables 3-1 through 3-5) be assigned to each AOC at the initiation of any site

TABLE 3-1 AOC #1: INTERIOR STRUCTURES, DEBRIS, AND MISCELLANEOUS AREAS OF CONCERN		
GRID LOCATION[1]	DESCRIPTION	PHOTO REFERENCE[2]
Throughout	Dust, debris, sand, stains on floor, asbestos for example:	
K-8	Floor, southwest corner.	A-1
L-9	Metal tables, southwest corner.	A-2
I-9	Debris, southwest corner.	A-3
I-9	Superstructure, crane support, south wing.	A-4
H-9	Debris near restrooms.	A-5
J-6	Junk pile (AOC 113).	A-7
D-8	Ceiling structure, west wing.	A-11
A-8	Junk.	A-16
A-7	Laboratory.	A-17
C-9 Mezzanine	Debris, mezzanine, looking north.	A-22
I-9	Crane near RIA 30624.	B-2
J-7	Mezzanine level, wall deterioration, north wall, south wing.	B-14
Throughout	Steel heater pipe.	A-25
Throughout	Representative space heater, east wall, south wing.	B-25
H-3	Crack in floor near RIA 31802.	C-9
A-2	Floor area northeast corner, east wing, grinder removed.	C-19
I-4	Steam condensate trap.	D-9
A-9	Cracks, joints, and stain, west wing, north end (AOC 122).	F-25
A-9	Typical secondary containment pit grating with sump of AOC 122 below.	F-26
D-8	Cracks in floor where chromium solutions were stored, west wing.	G-4
G-8	Deterioration in floor near RIA 23654 (AOC 116).	G-7
J-3	Typical cracks and joints in floor near Tank #14.	G-26

[1] For grid locations, see Figure 3-1.
[2] For photo references, see Attachment 1.

TABLE 3-2

ANCILLARY EQUIPMENT

AOC	RIA# BAR CODE	GRID LOCATION[1]	PHOTO REFERENCE[2]	NAME
2	24252	B-2	C-16	Blast cleaning and refinishing machine
29	28867	C-2	C-16	Blast cleaning and refinishing machine
30	31082 (C-7751)	H-2	-	Portable filtration unit
71	Unknown	H-2	E-6 E-5	Drip rack (screen drain)
83	--	L-6	F-1	Portable skimmer
88		J-2	C-5 C-3	Chiller and pumps
89	31083	D-3	D-1	Portable filtration unit
90	31084 (C-7749)	D-3	D-1	Portable filtration unit
94	32290	B-9	-	Heat exchanger
98	30578	B-9	-	Heat exchanger
108	Unknown	K-2	C-4	Parts cleaner
112	Unknown	F-9	-	Steel box
113	32039	J-6	B-15 B-16	Exhaust fan (in junk pile)
146	Unknown	J-7	A-7	Heat exchanger (in junk pile)
147	31895	J-5	B-17	Water softener
148	Unknown	G-8	G-8	Heat exchanger recirculation pumps, miscellaneous equipment, and containers
149	Unknown	E-3	D-2	Blast cabinet
150	Unknown	E-3	D-1 D-2	Air diaphragm pumps
151	Unknown	H-2	D-15	Water cooling tower
152	Unknown	J-8	A-6 G-9	Hopper

TABLE 3-2

ANCILLARY EQUIPMENT

AOC	RIA# BAR CODE	GRID LOCATION[1]	PHOTO REFERENCE[2]	NAME
153	Unknown	Throughout	A-23	Process piping and utility piping
			B-1	Process piping and utility piping
			B-22	Process piping and utility piping
			C-19	Process piping and utility piping
			D-19	Process piping and utility piping
			D-20	Process piping and utility piping
			D-21	Process piping and utility piping
			D-26	Process piping and utility piping
			E-22	Process piping and utility piping
			E-25	Process piping and utility piping
			F-18	Process piping and utility piping
			F-21	Process piping and utility piping
			F-12	Process piping and utility piping
			F-19	Process piping and utility piping
			F-20	Process piping and utility piping
			F-23	Process piping and utility piping
			F-26	Process piping and utility piping
			G-4	Process piping and utility piping
			G-11	Process piping and utility piping
			G-13	Process piping and utility piping
			G-20	Process piping and utility piping
			G-25	Process piping and utility piping

[1] For grid location, see Figure 3-1.
[2] For photo references, see Attachment 1.

TABLE 3-3

AIR EMISSION POINTS AND AIR POLLUTION CONTROL DEVICES

AOC	RIA #	GRID LOCATION[1]	PHOTO REFERENCE[2]	DESCRIPTION	APPURTENANT TO:
43	Unknown	K-1	D-13 B-26	H_2SO_4 exhaust system, scrubber, and stack	AOC 44 and 45
58	99979	L-5	B-21	Fume scrubber and roof exhaust stack (packing and dust present)	AOC 55
59	99980	L-5	B-23 B-24 B-20	Fume scrubber and roof exhaust stack (packing and dust present)	AOC 57
123 124 125 126	29059 29060 29065 29066	E-9	A-12 A-13 A-20 E-1 A-24 F-10 G-2 C-8 C-23	Four mezzanine-mounted air purification scrubber systems with associated duct work and roof-mounted hooded exhaust ducts	AOC's 92, 95, 96, 97, 99, 100, 101, 102, 103-106, 109-111, 114 and 116-120
135	Unknown	L-2	E-18 C-1 D-14	Exhaust system to roof stack	AOC 46, 47, 48 and parts cleaner
136	Unknown	J-4	B-18 D-10	Exhaust hoods, ducts, fans and stack	AOC 53, 54
137	Unknown	K-5	C-7 B-19	Degreaser exhaust stack to roof	AOC 62
138	32033 thru 32043	K-6	B-3 thru B-13	Exhaust systems, eleven mezzanine-mounted air intake/exhaust fans, roof-mounted air intake or exhaust stacks	AOC 65, 67, 69, 72, 74, 76, 78, 80, 81, 84 and 85
139	Unknown	D-1	D-17 C-15	"Cyanide de-rust area" exhaust system	AOC's 3, 7, and 9
140	Unknown	F-1	D-16 C-14	"Cyanide de-rust area" exhaust system	AOC's 4, 6, 10, 11 and 12
141	Unknown	F-1	C-13 C-14	Vapor degreaser exhaust stack	AOC 13 (Detrex)
142	Unknown	F-1	E-3 D-16 C-13	Cadmium area exhaust system (hoods, fan, ductwork, and stack)	AOC 14-16, 18 and 21
143	Unknown	B-3	C-24	Six exhaust stacks and two air intake stacks	AOC 24-28 and one missing tank
144	99983	E-4	D-10 D-2	Baghouse #3	Blast Cabinet

TABLE 3-3

AIR EMISSION POINTS AND AIR POLLUTION CONTROL DEVICES

AOC	RIA #	GRID LOCATION[1]	PHOTO REFERENCE[2]	DESCRIPTION	APPURTENANT TO:
145	Unknown	C-1	C-16 C-17 C-18	Remaining ductwork (Baghouses previously removed)	Rotary blast area (Baghouse 1 and 2 missing)
154	Unknown	A-7	D-11	Cyanide destruction unit exhaust fan and stack	AOC 87
155	19708	B-8	A-15	Rotoclone system	Buffer/grinder (no longer present)
156	30386	H-3	C-10 C-11 D-3 thru D-6	Chromium corner; 6 exhaust systems and 2 mezzanine-mounted air purification systems, wet type	AOC 31-37

[1] For grid locations, see Figure 3-1.
[2] For photo references, see Attachment 1.

TABLE 3-4
PROCESS-RELATED TANKS AND VATS

AOC #	RIA # (Bar Code)	(6) Grid No.	(7) Photo Ref. (Att. A)	Description	Interior Dimensions Length (in) Width (in) Depth (in)	Max. Capacity (gal)	Construction Materials	Appurtenances	Contents March, 1992	Hazardous Contents	
										Yes or No	Type
3	30234	D-2	C-15	Alkali cleaner	38 36 40	237	Steel shell with 1/2 inch plastic or rubber liner	Fiberglass ductwork. No drains	None noted	Yes	M(2) C(3)
4	24410	D-2	-	Nickel	96 39 40	648	Unlined steel tank	Fiberglass ductwork.	Trace (<1/16") yellow-green scale on bottom and lower half of sides	Yes	M(2) C(3)
5	32294	D-2	C-15	Water	38 35 40	230	Steel tank with PVC liner	No ductwork. 1" drain to pit below	No scale. Thin film of reddish-brown moist residue on bottom	No(1)	-
6	24411	E-2	-	Copper	96 39 40	648	Unlined steel tank	Fiberglass ductwork. Process piping present. No drain.	Trace of blue scale on bottom	Yes	M(2) C(3)
7	32295	E-2	H-1	Alkali cleaner	96 39 40	648	Unlined steel tank	Heater. Fiberglass ductwork.	Sides have rusty scale. Approximately 3 ft^3. beige sludge on bottom	Yes	M(2) C(3)
8	32296	E-2	E-1	Water	95 39 40	642	Rubber-lined steel tank. Deteriorated liner.	No drain	1/8" chalky film with some oily residue	No(1)	-
9	24355	E-2	E-1	Hot water	96 39 40	648	Unlined rusted steel tank	Fiberglass hood. Drain port. Heater?	Rusty 1/8" orange scale on sides. <1 ft^3 scale on bottom	No(1)	-

TABLE 3-4
PROCESS-RELATED TANKS AND VATS

AOC #	RIA # (Bar Code)	(6) Grid No.	(7) Photo Ref. (Att. A)	Description	Interior Dimensions Length (in) Width (in) Depth (in)	Max. Capacity (gal)	Construction Materials	Appurtenances	Contents March, 1992	Hazardous Contents	
										Yes or No	Type
10	(C-7889)	F-2	E-1	Muriatic acid	95 50 40	822	PVC-lined steel tank	Fiberglass ductwork. No drain.	Gray filmy residue	Yes	M(2) C(3)
11	24358	F-2	E-1 C-14	Dewaxer	96 38 40	632	Unlined steel tank	Fiberglass duct, drain. Heater?	<1/8" beige crusted material on sides	Yes	M(2) C(3) S(4)
12	Not identified	F-2	-	Nickel strip	38 24 38	150	Unlined steel tank	Fiberglass ductwork. No drain. Radiator.	Rusty walls, 1/16" oily film	Yes	M(2) C(3)
13	31107	F-2	E-3 C-14	Detrex Vapor Degreaser	96 48 60	1,197	Unlined steel tank	Steel ductwork. 6" steel sewer pipe perpendicular to outside wall in pit.	Slight oily rusty film	Yes	M(2) S(4)
14A	32293	G-2	C-13	Muriatic acid	44 21 36	144	PVC-lined steel tank (one of three compartments)	Fiberglass ductwork. No drain.	Thin oily water film 1/8" deep	Yes	M(2) C(3)
14B	32293	G-2	C-13	Water	44 21 36	144	PVC-lined steel tank (one of three compartments)	Fiberglass ductwork. No drain.	Thin oily water film 1/8" deep	Yes	M(2) C(3)
14C	32293	G-2	C-13	Bright dip	44 21 36	144	PVC-lined steel tank (one of three compartments), liner fractured.	Fiberglass ductwork. No drain.	Oily residue	Yes	M(2) C(3)

TABLE 3-4
PROCESS-RELATED TANKS AND VATS

AOC #	RIA # (Bar Code)	(6) Grid No.	(7) Photo Ref. (Att. A)	Description	Interior Dimensions Length (in) Width (in) Depth (in)	Max. Capacity (gal)	Construction Materials	Appurtenances	Contents March, 1992	Hazardous Contents	
										Yes or No	Type
15	2359	G-2	G-20	Alkali cleaner	96 38 38	600	Unlined steel tank	2" overflow pipe. Fiberglass ductwork. Heater?	Thin coating of rusty scale	Yes	M(2) C(3)
16	24360	G-2	E-4	Hot water	96 38 38	600	Unlined steel tank	Fiberglass ductwork. Heater? No overflow, no drain.	<1/8" rusty scale	No(1)	-
17	24412	G-2	E-4	Cadmium (cadmium cyanide?)	96 38 38	600	PVC or rubber-lined steel tank	Heater? No ductwork. No drain or overflow.	Thin oily residue on bottom. Light scaly film on walls.	Yes	M(2) C(3)
18	(F-1314)	G-2	E-4	Muriatic acid	58 36 38	343	Unlined fiberglass tank	Fiberglass ductwork. No drains or overflow.	Light scaly film on walls. Moist oil/water film on bottom.	Yes	M(2) C(3)
19	(F-??15)	H-2		Water	96 39 38	616	Unlined steel tank	Drain. No ductwork.	Rusty scale. Rainwater present due to roof leak.	No(1)	-
20	24365 (C-7892)	H-2	E-5 E-7 E-6	Cadmium (cyanide?)	44 33 32	201	Steel tank with deteriorated rubber or plastic liner	No ductwork. Drain.	1/2" dark brown dried sludge on bottom only	Yes	M(2) C(3)
21	23794	H-2	D-3	Cadmium	96 35 36	524	Rubber-lined steel tank	Portable filter C-7751 attached. Plugged overflow outlet. Exhaust system.	Walls clean, 1/2" oily rainwater (?) on bottom	Yes	M(2) C(3)

TABLE 3-4
PROCESS-RELATED TANKS AND VATS

AOC #	RIA # (Bar Code)	(6) Grid No.	(7) Photo Ref. (Att. A)	Description	Interior Dimensions Length (in) Width (in) Depth (in)	Max. Capacity (gal)	Construction Materials	Appurtenances	Contents March, 1992	Hazardous Contents	
										Yes or No	Type
22	24363 (F-1316)	H-2	E-5 E-6	Water (barrel rinse machine)	44 32 32	195	Deteriorated PVC or rubber-lined steel tank.	No ductwork. Overflow pipe and drain present.	Rusty scale	No(1)	-
23	24364	H-2	E-5 E-6	Cadmium (cyanide?)	44 33 32	201	Deteriorated PVC or rubber-lined steel tank.	No ductwork. Heater? Drain present.	Light scaly film on walls	Yes	M(2) C(3)
24	(F-1304)	A-3	C-24	Muriatic acid (Tank 3)	240 46 49	2,457	Brick-lined rusted steel tank. Approximately 1,600 bricks in walls, each 8" x 4" x 2-1/4". Epoxy between brick and steel.	Steel inlet air, fiberglass outlet, exhaust system. No drains or overflow.	Approximately 3" black oily water in bottom. Rain water was dripping from roof.	Yes(5)	M(2) C(3) S(4)
25	32301 (C-7884)	B-3	D-23 C-26 C-24	Alkali cleaner (Tank 1)	248 53 52	2,959	Unlined steel	Fiberglass ductwork. No drains or overflow.	Rusty scale	Yes(5)	M(2) C(3) S(4)
26	32300?	B-3	C-23 C-24	Hot water (Tank 5)	245 50 52	2,757	Deteriorated epoxy-lined steel tank.	Overflow pipe.	Rusty scale	Yes(5)	M(2) C(3) S(4)
27	(C-7883)	C-3	C-24 C-26	Alkali cleaner (Tank 2)	248 52 52	2,903	Unlined steel tank, rusted.	Fiberglass ductwork.	1/4" dark beige scale on walls. Approximately 3 ft^3 scale on bottom	Yes(5)	M(2) C(3) S(4)

TABLE 3-4
PROCESS-RELATED TANKS AND VATS

AOC #	RIA # (Bar Code)	(6) Grid No.	(7) Photo Ref. (Att. A)	Description	Interior Dimensions Length (in) Width (in) Depth (in)	Max. Capacity (gal)	Construction Materials	Appurtenances	Contents March, 1992	Hazardous Contents	
										Yes or No	Type
28	24348	C-3	C-25 C-24	Hot water (Tank 4)	248 53 52	2,959	Unlined steel tank, rusted.	Fiberglass ductwork. No drains or overflow.	Rusty scale on walls. Rainwater dripping in.	Yes(5)	M(2) C(3) S(4)
31	31642	G-3	G-24 G-25	Chromic acid	63 36 96	942	Brick/epoxy-lined steel tank. Bricks 8" x 4" x 2-1/4"	Heat exchanger hook-up, fiberglass insulation. No overflow or drain. Steel ductwork.	Thin black film chromic acid residue	Yes	M(2)
32	31861	G-3	E-9 D-6	Chromic acid	118 39 72	1,434	Brick/epoxy-lined steel tank. Bricks 8" x 4" x 2-1/4".	Heat exchanger hook-up, fiberglass insulation. No overflow or drain. Steel and fiberglass ductwork.	Thin black film chromic acid residue	Yes	M(1)
33	31890? 31892? or 24390?	G-3	-	Chromic acid	48 40 96	798	Brick/epoxy-lined steel tank. Bricks 8" x 4" x 2-1/4".	Heat exchanger hook-up, fiberglass insulation. No overflow or drain. Steel and fiberglass ductwork.	Thin black film chromic acid residue	Yes	M(2)
34	28795	H-3	E-8	Wax	36 36 ≥84	471	Unlined steel tank, fiberglass insulation.	Steam coils	18" waxy sludge on bottom	Yes	M(2)

TABLE 3-4
PROCESS-RELATED TANKS AND VATS

AOC #	RIA # (Bar Code)	(6) Grid No.	(7) Photo Ref. (Att. A)	Description	Interior Dimensions Length (in) Width (in) Depth (in)	Max. Capacity (gal)	Construction Materials	Appurtenances	Contents March, 1992	Hazardous Contents	
										Yes or No	Type
35	24387	H-3	E-10	Water	118 40 72	1,471	Brick/epoxy-lined steel tank. Bricks 8" x 4" x 2-1/4".	Underflow, steel ductwork, upper part loose.	Yellowish chromium residue	No(1)	-
36	31862	H-3	C-8 D-7	Chromic acid	118 39 72	1,434	Brick/epoxy-lined steel tank. Bricks 8" x 4" x 2-1/4".	Steel and fiberglass ductwork. No drains.	Thin black film chromic acid residue	Yes	M(2)
37	31863	H-3	C-10	Chromic acid	118 39 72	1,434	Brick/epoxy-lined steel tank. Bricks 8" x 4" x 2-1/4".	Steel and fiberglass ductwork. No drains.	Thin black film chromic acid residue	Yes	M(2)
44	25897	J-2	B-26 G-18 E-18	Hard anodized sulfuric acid	94 44 56	1,003	PVC-lined steel tank	Connected to chiller process pipes. Steel ductwork to scrubber.	Slight residue	Yes	M(2)
45	None	K-2	B-26 E-18	Sulfuric acid	82 41 57	830	PVC-lined stainless steel tank	PVC/fiberglass ductwork. Heating coil and air diffuser inside. Overflow drain.	Slight residue	Yes	M(2)
46	24011 (C-7878)	K-2	E-18 C-1 C-2	Deoxidizer	82 40 56	795	PVC-lined steel tank	Fiberglass ductwork. Heated.	1/8" yellowish scale	Yes	M(2)

TABLE 3-4
PROCESS-RELATED TANKS AND VATS

AOC #	RIA # (Bar Code)	(6) Grid No.	(7) Photo Ref. (Att. A)	Description	Interior Dimensions Length (in) Width (in) Depth (in)	Max. Capacity (gal)	Construction Materials	Appurtenances	Contents March, 1992	Hazardous Contents	
										Yes or No	Type
47	None	K-2	E-18 E-13 C-1 C-2	Hot water	84 42 58	886	Unlined steel tank	Hot water radiator. Air agitator. Fiberglass ductwork, overflow.	1/8" beige scale	No(1)	-
48	24015	L-2	E-18 E-14 C-1 C-2	Alkali cleaner	85 43 57	902	Unlined steel tank	Fiberglass ductwork. Heat exchanger	1/8" white residue	Yes	M(2)
49	(F-1321)	L-2	C-1 C-2 E-15 E-18	Chemical film	83 41 38	560	PVC-lined steel tank	No ductwork. No drains.	Greenish yellow-brown film	Yes	M(2)
50	None	K-2	E-18	Water (Tank 13)	83 38 40	546	PVC-lined steel tank	Air diffuser. No ductwork. Overflow.	Light dust	No(1)	-
51	32288	K-2	E-16	Oil reclaiming tank	90 42 48	785	Unlined steel tank	Lid across top. No ductwork. Overflow and drain.	1" oil at bottom	Yes	M(2) S(4)
52	27985 (F-1306)	L-2	E-17	Degreaser	76 24 24	189	Steel tank with steel (secondary) containment.	Overflow and drain. No ductwork.	1/4" greasy residue on bottom	Yes	M(2) S(4)

TABLE 3-4
PROCESS-RELATED TANKS AND VATS

AOC #	RIA # (Bar Code)	(6) Grid No.	(7) Photo Ref. (Att. A)	Description	Interior Dimensions Length (in) Width (in) Depth (in)	Max. Capacity (gal)	Construction Materials	Appurtenances	Contents March, 1992	Hazardous Contents	
										Yes or No	Type
53A	F-1323	J-4	B-18 E-20	Alkali cleaner	72 48 64	957	Unlined steel tank with two compartments	Fiberglass ductwork to exhaust system. Heater, no drains.	1/8" white scale	Yes	M(2)
53B	F-1323	J-4	B-18 E-20	Hot water (Tank 14)	72 48 64	957	Unlined steel tank with two compartments	Fiberglass ductwork to exhaust system. Heater, underflow and overflow.	Rusty film	No(1)	-
54A	24301	J-5	E-19	Hydrofluoric acid	71 47 63	910	Lead-lined steel tank with adjacent compartment	Fiberglass exhaust to scrubber	1/4" white scale	Yes	M(2)
54B	24301	J-5	B-18	Water	71 47 63	910	PVC-lined steel tank with adjacent compartment	Fiberglass exhaust to scrubber. Overflow to sewer pipe.	Some scale	No(1)	-
55	24366	K-4	B-21 G-17	Chromic acid	144 84 84	4,398	Unlined steel tank	Heating plate. Recirculation coils. Metal ductwork to scrubber. No drains.	1/4" white scale in portions of this tank	Yes(5)	M(2) C(3) S(4)
56	24367	K-4	C-6	Water	144 84 84	4,398	Unlined steel tank	No ductwork. Air sparge line. Overflow.	Light greenish-gray scale	Yes(5)	M(2) C(3) S(4)

TABLE 3-4
PROCESS-RELATED TANKS AND VATS

AOC #	RIA # (Bar Code)	(6) Grid No.	(7) Photo Ref. (Att. A)	Description	Interior Dimensions Length (in) Width (in) Depth (in)	Max. Capacity (gal)	Construction Materials	Appurtenances	Contents March, 1992	Hazardous Contents	
										Yes or No	Type
57	24368	K-5	B-20 G-16 E-21	Sodium dichromate	144 84 84	4,398	Unlined steel tank	Heat exchangers. Metal debris. Hooked to scrubber through fiberglass overflow. No drains.	1/4" greenish-gray scale	Yes(5)	M(2) C(3) S(4)
65	23604 (C-2360)	J-6	B-7	Manganese phosphate	44 36 40	274	Unlined stainless steel tank	Fiberglass ductwork. No drains.	1/4" beige crust	Yes	M(2)
66	24547 (F-1284)	J-6	-	Water	40 40 40	277	Fiberglass double-walled, steel tank	No ductwork. Drain.	1/8" dark gray rusty scale	No(1)	-
67	21547	J-7	B-7	Chromic acid	120 42 48	1,047	Unlined steel tank	Fiberglass ductwork	1/8" green scale	Yes	M(2)
68	32303	J-7	-	Water	84 36 42	550	Steel double wall with fiberglass insulation	No ductwork. Drain and overflow.	1/8" green-beige crust	No(1)	-
69	32291	J-7	F-5	Zinc phosphate	84 44 60	960	Steel double wall with fiberglass insulation	Fiberglass ductwork. No drains. Heat exchanger.	1/8" green-gray scale	Yes	M(2)

TABLE 3-4
PROCESS-RELATED TANKS AND VATS

AOC #	RIA # (Bar Code)	(6) Grid No.	(7) Photo Ref. (Att. A)	Description	Interior Dimensions Length (in) Width (in) Depth (in)	Max. Capacity (gal)	Construction Materials	Appurtenances	Contents March, 1992	Hazardous Contents	
										Yes or No	Type
70	32289	J-8	-	Dipping oil tank	144 57 31	1,101	Unlined steel tank	No ductwork. No drains.	Oily film on bottom	Yes	M(2)
72	27759	K-6	B-7	Manganese phosphate	96 48 48	957	Unlined stainless steel tank	Fiberglass ductwork. No drains	1/4" beige crust on walls	Yes	M(2)
73	17689	K-6	-	Water or chromate dip	82 48 48	818	Double wall steel tank with fiberglass insulation.	No ductwork. Overflow.	Slight rusty scale	Yes	M(2)
74	(F-1287)	K-7	F-4	Chromic acid (Tank 15)	96 48 48	957	Unlined heavily rusted steel tank.	Fiberglass ductwork. Drain and overflow.	Green scale	Yes	M(2)
75	26123 (F-1289)	K-7	-	Water	120 42 48	1,047	Unlined steel tank.	No ductwork. Overflow and drain.	Rusty scale	No(1)	-
76	32343	K-8	B-4	Zinc phosphate	120 42 48	1,047	Unlined stainless steel tank	Fiberglass ductwork. No drain.	1/4" yellowish green crust on walls	Yes	M(2)
77	Unknown	K-8	-	Mobile Tank	42 33 32	192	PVC-lined steel tank	No ductwork.	Wax-oil coating inside and out	Yes	M(2) S(4)

TABLE 3-4
PROCESS-RELATED TANKS AND VATS

AOC #	RIA # (Bar Code)	(6) Grid No.	(7) Photo Ref. (Att. A)	Description	Interior Dimensions Length (in) Width (in) Depth (in)	Max. Capacity (gal)	Construction Materials	Appurtenances	Contents March, 1992	Hazardous Contents	
										Yes or No	Type
78	31360	K-6	F-3 B-3	Zinc phosphate	166 59 72	3,052	Double walled tank. Inner wall stainless, outer wall steel.	Fiberglass ductwork.	1/4" greenish scale throughout	Yes	M(2)
79	31362	K-7	B-3	Water	168 60 72	3,142	Unlined steel tank	No ductwork. Drain and overflow.	Rusty scale sides and bottom	No(1)	-
80	31361	K-7	B-3	Chromic acid	168 60 72	3,142	Double walled steel/steel tank. Fiberglass insulation.	Fiberglass ductwork. No drains.	1/8" beige scale. Also, blue and gray scale.	Yes	M(2)
81A	31367	L-6	F-2	Caustic soda	96 43 42	750	Double walled steel/steel tank. Fiberglass insulation (one of two compartments).	Sliding splash-plate. Fiberglass ductwork. No drains.	Rusty residue with crusted material at top. See photo F-2.	No	M(2)
81B	31367	L-6	F-2	Sodium nitrate, black oxide	48 43 42	375	Double walled steel/steel tank. Fiberglass insulation (one of two compartments).	Sliding splash-plate. Fiberglass ductwork. No drains.	Rusty residue with crusted material at top. See photo F-2.	Yes	M(2)
82	32297	L-7	F-1 E-26	Water	144 30 40	748	Unlined steel tank	Drain and overflow. No ductwork.	1/4" white scale	No(1)	-

TABLE 3-4
PROCESS-RELATED TANKS AND VATS

AOC #	RIA # (Bar Code)	(6) Grid No.	(7) Photo Ref. (Att. A)	Description	Interior Dimensions Length (in) Width (in) Depth (in)	Max. Capacity (gal)	Construction Materials	Appurtenances	Contents March, 1992	Hazardous Contents	
										Yes or No	Type
84	32298	L-7	E-25 E-24	Black oxide	144 31 40	773	Unlined steel tank	Steel to fiberglass ductwork. Bottom drain. Circular tube at bottom.	Rusty scale	Yes	M(2)
85	32299	L-8	E-23	Hot water	144 30 40	748	Unlined steel tank	Fiberglass ductwork. Overflow and drain.	1/2" green crust on sides	No(1)	-
91	29010	A-9	G-1	Degreaser trichloro-ethane	122 36 68	1,293	Unlined steel tank	Heater inside steel ductwork at tank only. Remaining ductwork missing. No drains	1/8" rusty scale	Yes	M(2) S(4)
92	29509	B-9	F-10 F-11	Water	73 37 98	1,146	Unlined steel tank	Steel ductwork to pit below. Heat exchanger and other equipment. Overflow to pit.	1/8" rusty scale	No(1)	-
95	29508	B-9	-	Chromic acid	100 32 96	1,330	Brick/epoxy-lined steel tank. Bricks on edge except top row.	Fiberglass ductwork to pit below. Heat exchanger (RIA 30573) adjacent.	Orange chromium film	Yes	M(2)
96	29057	B-9	F-12	Alkali anode cleaner (Rochelle Salt)	100 32 96	1,330	Brick/epoxy-lined tank. Bricks on edge.	Steel ductwork to pit below. Heat exchanger piping. Overflow to pit.	1/8" yellow-green scale	Yes	M(2)

TABLE 3-4
PROCESS-RELATED TANKS AND VATS

AOC #	RIA # (Bar Code)	(6) Grid No.	(7) Photo Ref. (Att. A)	Description	Interior Dimensions Length (in) Width (in) Depth (in)	Max. Capacity (gal)	Construction Materials	Appurtenances	Contents March, 1992	Hazardous Contents	
										Yes or No	Type
97	29648	B-9	-	Chromic acid	139 27 67	1,088	Brick/epoxy-lined steel tank. Bricks on edge except top row.	Steel ductwork to pit below. Heat exchanger (RIA 30578) adjacent. No drains.	Reddish film	Yes	M(2)
99	23647	C-9	-	Water	148 34 74	1,612	Unlined steel tank	Steel ductwork to pit below. Heat exchanger plate. Overflow to pit.	Rusty beige scale	No(1)	-
100	23666	C-9	-	Cold water	148 34 74	1,612	Unlined steel tank	Steel ductwork. Overflow to pit.	Rusty scale	No(1)	-
101	23748 or 31784 (C-7702)	D-9	G-2 F-23 A-23	Chromic acid	140 26 69	1,087	Brick/epoxy-lined tank. Bricks on edge.	Steel ductwork to pit below. No heater. No drains.	Reddish film	Yes	M(2)
102	23665	D-9	F-13	Alkali strip	148 34 74	1,612	Unlined steel tank	Steel ductwork. Heater inside. Overflow to pit.	Greenish-gray film	Yes	M(2)
103	23649	D-9	G-2 F-23	Chromic acid	140 26 72	1,134	Brick/epoxy-lined steel tank. Bricks on edge.	Steel ductwork was connected to missing heat exchanger. No drains.	1/8" orange scale	Yes	M(2)
104	23664	D-9	F-14	Alkali strip	72 33 74	761	Rubber epoxy-lined steel tank. Lining deteriorated.	Steel ductwork. Heat exchanger piping inside. No drains.	Rusty scale or residue	Yes	M(2)

TABLE 3-4
PROCESS-RELATED TANKS AND VATS

AOC #	RIA # (Bar Code)	(6) Grid No.	(7) Photo Ref. (Att. A)	Description	Interior Dimensions Length (in) Width (in) Depth (in)	Max. Capacity (gal)	Construction Materials	Appurtenances	Contents March, 1992	Hazardous Contents	
										Yes or No	Type
105	23663	D-9	-	Hot water	148 34 74	1,612	Unlined steel tank	Steel ductwork. Heater inside. Overflow to pit.	1/8" beige rusty scale	No(1)	-
106	23650	E-9	-	Chromic acid	140 26 72	1,134	Brick/epoxy-lined steel tank. Bricks on edge.	Steel duct work was connected to missing heat exchanger. No drains.	Orange to red chromium film	Yes	M(2)
107	23662	E-9	-	Cold water	148 34 74	1,612	Rubber epoxy-lined steel tank. Lining deteriorated.	No ductwork. Overflow to pit.	Dusty film	No(1)	-
109	23651 (C-7705)	F-9	-	Chromic acid	140 26 72	1,134	Brick/epoxy-lined steel tank. Bricks on edge.	Steel ductwork was connected to missing heat exchanger. No drains.	1/16" orange-red scale	Yes	M(2)
110	23652	F-9	-	Chromic acid	140 26 72	1,134	Brick/epoxy-lined steel tank. Bricks on edge.	Steel ductwork was connected to missing heat exchanger. No drains.	1/16" yellow-orange scale	Yes	M(2)
111	31501	F-9	F-9	Chromic acid	141 27 68	1,121	Brick/epoxy-lined steel tank. Bricks laid flat.	PVC ductwork was connected to missing heat exchanger. No drains.	Yellow-orange film	Yes	M(2)

TABLE 3-4
PROCESS-RELATED TANKS AND VATS

AOC #	RIA # (Bar Code)	(6) Grid No.	(7) Photo Ref. (Att. A)	Description	Interior Dimensions Length (in) Width (in) Depth (in)	Max. Capacity (gal)	Construction Materials	Appurtenances	Contents March, 1992	Hazardous Contents	
										Yes or No	Type
114	23653	G-9	G-7	Chromic acid	140 26 72	1,134	Brick/epoxy-lined steel tank. Bricks on edge.	Steel ductwork. Debris inside. Heat exchanger missing. No drains.	Reddish film	Yes	M(2)
115A	(F-1277)	G-9	F-16	Nickel	18 18 18	25	Plastic vat. One of two compartments.	No ductwork. No drains.	Approximately 2" blue crystal sludge in bottom	Yes	M(2)
115B	(F-1227)	G-9	F-16	Nickel	12 18 11	10	Plastic vat. One of two compartments.	No ductwork. No drains.	Approximately 2" blue crystal sludge in bottom	Yes	M(2)
116	23654	G-9	-	Chromic acid	140 26 72	1,134	Brick/epoxy-lined steel tank. Bricks on edge.	Steel ductwork. Debris inside. Heat exchanger missing. No drains.	Reddish film	Yes	M(2)
117	23659	G-9	-	Phosphoric sulfuric acid	140 26 72	1,134	Brick/epoxy-lined steel tank. Bricks on edge.	PVC ductwork. Heater piping. Heat exchanger missing. No drains.	Gray scale	Yes	M(2)
118	23655	H-9	F-17	Chromic acid	140 26 72	1,134	Brick/epoxy-lined steel tank. Bricks on edge.	Steel ductwork. Heat exchanger missing. No drains.	Reddish film. 1/4" black liquid on bottom	Yes	M(2)
119	30625	H-9	F-18 B-1	Water	148 34 74	1,612	Unlined or water-lined steel tank	Steel ductwork. No heater. Overflow drain.	Rusty scale, crusted material on outside	No(1)	-

TABLE 3-4
PROCESS-RELATED TANKS AND VATS

AOC #	RIA # (Bar Code)	(6) Grid No.	(7) Photo Ref. (Att. A)	Description	Interior Dimensions Length (in) Width (in) Depth (in)	Max. Capacity (gal)	Construction Materials	Appurtenances	Contents March, 1992	Hazardous Contents	
										Yes or No	Type
120	23656	I-9	F-20	Chromic acid	140 26 72	1,134	Brick/epoxy-lined steel tank. Bricks on edge.	Steel ductwork. Heat exchanger missing. No drains.	Reddish film	Yes	M(2)
121	30624	I-9	F-20 F-19 B-2	Water	148 34 74	1,612	Unlined or water-lined steel tank	No ductwork. No heating equipment. Overflow and drain.	1/8" rusty scale	No(1)	-
127	(F-1329)	E-9	F-9	Mobile tank	44 33 32	201	PVC-lined steel tank	No ductwork. Overflow drain.	Empty. No visible residue	Yes	M(2)
128	32290	E-8	-	Lead fluoborate	Unknown Unknown Unknown	Unknown	Metal tank	No ductwork.	Unknown	Yes	M(2)

(1) Water (rinse) tanks are not considered to contain hazardous waste. However, clean-up procedures will include decontamination of all tanks, vats, and equipment in Building 64, or disposal as hazardous waste.
M(2) (Metals) Potential presence of D006 (cadmium), D007 (chromium), D008 (lead), silver (D011) and/or D002 (corrosivity).
C(3) (Cyanide) Potential presence of cyanide, including F007 (cyanide plating solutions), F008 (plating bath residue where cyanide was used), F009 (spent stripping and cleaning baths containing cyanide), and/or D003 (reactivity characteristic).
S(4) (Solvents) Potential presence of spent halogenated solvents (F001), and/or ignitability (D001) characteristic.
(5) This vat/tank was used for treatment or storage of hazardous waste during closure.
(6) For Grid Locations, see Figure 3-1.
(7) For Photo References, see Attachment 1.

TABLE 3-5

SECONDARY CONTAINMENT SYSTEMS

AOC #	Description	Grid Location[7]	Photo Reference[1]	Interior Dimensions Length (ft) Width (ft) Depth (ft)	Max. Capacity (gal)	Construction Materials	Appurtenances	Contents, March 1992 (Estimated Volume Sludge Present)	Types of Hazardous Wastes Potentially Present
38	Drainage trench, East wing	A thru K-3	D-22 D-24	251'2" 2'2" to 2'6" 3'3" to 4'6"	17,801	Concrete	Several feeder trenches and inlet pipes	3" sludge at north end; 1" - 2" sludge/residue throughout (~73 ft^3)	M[2] C[3] S[4]
39	Secondary Containment Pit	E-2	D-25	44' 16'4" 3'2" to 3'6"	18,782	Concrete	None	1" - 2" scale and residue present (~90 ft^3)	M[2] C[3] S[4]
40	Secondary Containment Pit	G-2	E-7	44' 16'8" 3'6"	20,152	Concrete	None	Debris and 1"-2" residue present (~92 ft^3)	M[2] C[3]
41	Secondary Containment Pit	H-3	G-24 G-25	44' 16' 4'3" to 4'5"	23,929	Concrete	Sump pump and piping, listed as AOC 133	Dried sludge, 1"-2" (~88 ft^3)	M[2]
42	Secondary Containment Pit	B-3	G-22	79' 5'6" 3'4" to sludge level	11,358	Concrete	None	1"-2" residue present (~54 ft^3)	M[2] C[3] S[4]
60	Secondary Containment Pit	K-2	E-18	36'6" 12' 3'	10,315	Concrete	None	1"-2" residue present (~55 ft^3)	M[2] S[4]

TABLE 3-5

SECONDARY CONTAINMENT SYSTEMS

AOC #	Description	Grid Location[7]	Photo Reference[1]	Interior Dimensions Length (ft) Width (ft) Depth (ft)	Max. Capacity (gal)	Construction Materials	Appurtenances	Contents, March 1992 (Estimated Volume Sludge Present)	Types of Hazardous Wastes Potentially Present
61	Secondary Containment Pit	K-4	B-20 G-16 G-17	52'9" 9' 4'10"	18,000	Concrete	None	1"-2" residue present (~59 ft^3)	M[2] C[3] S[4] H[5]
62	Secondary Containment Pit	K-5	B-19	20'6" 7'6" 5'	6,035	Concrete	2'x 2'x 2' sump, no pump or piping	Metal debris, some dust (~1 ft^3)	M[2] S[4]
63	Secondary Containment Pit	J-5	B-17	4' 4' 9'	1,130	Concrete	None	Unknown, inaccessible, located beneath water softener (unknown)	M[2]
64	Secondary Containment Pit	J-4	G-15	36'7" 5'7" 2'6" to 2'8"	4,083	Concrete	None	1"-2" sludge (~25 ft^3)	M[2]
86	Secondary Containment Pit	K-7	G-12 G-10 G-11	64' 34'6" 4'2"	72,225	Concrete	Sump pump and piping which is listed as AOC 132	1 ft water, 1"-2" sludge (~17,333 gallons water - ~276 ft^3 sludge)	M[2] C[3] S[4] H[5] A[6]
93	Sump pump and associated piping west wing	B-9	F-24 F-23	N/A	N/A	PVC piping, cast iron slump	None	N/A	M[2]

TABLE 3-5

SECONDARY CONTAINMENT SYSTEMS

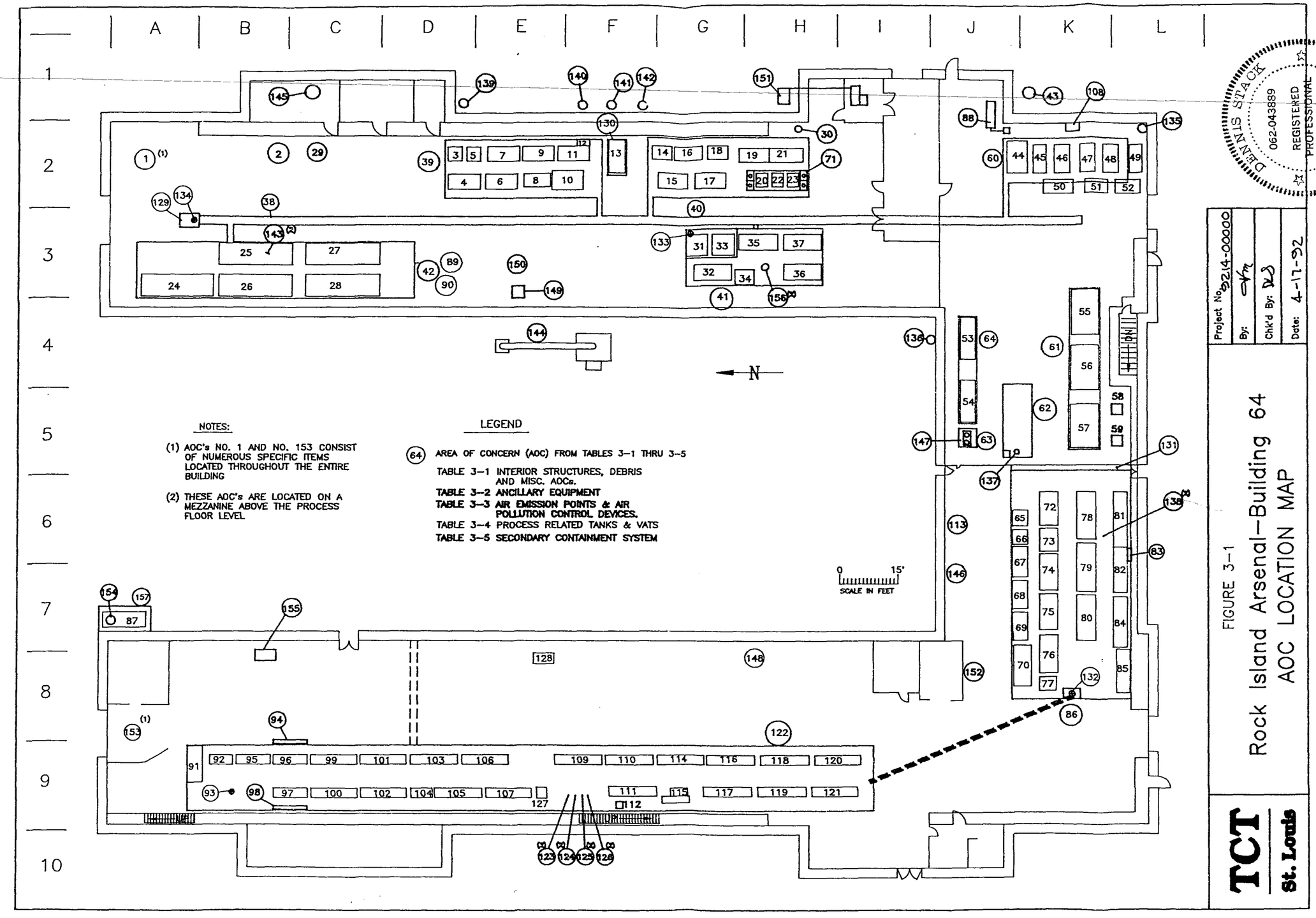
AOC #	Description	Grid Location[7]	Photo Reference[1]	Interior Dimensions Length (ft) Width (ft) Depth (ft)	Max. Capacity (gal)	Construction Materials	Appurtenances	Contents, March 1992 (Estimated Volume Sludge Present)	Types of Hazardous Wastes Potentially Present
122	Secondary Containment Pit	E-9	A-18 F-26 F-22	196' 20'6" 7'4"	231,198	Concrete	Sump pump and pumping listed as AOC 93 (above)	1"-2" sludge present throughout (~502 ft^3)	M[2] H[5] S[4]
129	East Wing Sump	A-3	C-22 G-21 D-24	4'10" 3' 8'6"	967	Concrete	None	3 feet brown sludge at bottom (~43 ft^3)	M[2] C[3] S[4]
130	Detrex Vapor Degreaser Secondary Containment Pit	F-2	-	10'8" 6'6" 2'10"	1,541	Concrete	None	1" residue present (~6 ft^3)	M[2] S[4]
131	In-Process Waste Storage Area Secondary Containment	K-5	G-14	34'6" 4' 0'6"	542	Concrete	None	< 1" residue present (<11 ft^3)	M[2] C[3]
132	Sump pump and piping, South Wing	K-8	G-10 G-13	N/A	N/A	PVC connected to cast iron piping	None	N/A	M[2] C[3] S[4]
133	Sump pump and piping within AOC 41	G-3	G-25	N/A	N/A	PVC piping, cast iron pump, steel screen	None	N/A	M[2]
134	Sump pump and piping, East Wing	A-3	D-22 C-22	N/A	N/A	PVC piping, cast iron pump is located in AOC 129	None	N/A	M[2] C[3] S[4]

TABLE 3-5

SECONDARY CONTAINMENT SYSTEMS

AOC #	Description	Grid Location(7)	Photo Reference(1)	Interior Dimensions Length (ft) Width (ft) Depth (ft)	Max. Capacity (gal)	Construction Materials	Appurtenances	Contents, March 1992 (Estimated Volume Sludge Present)	Types of Hazardous Wastes Potentially Present
134	Sump pump and piping, East Wing	A-3	D-22 C-22	N/A	N/A	PVC piping, cast iron pump is located in AOC 129	None	N/A	M(2) C(3) S(4)
157	Secondary Containment Pit, Cyanide Destruction Unit	A-7	D-11	Unknown	Unknown	Concrete	18" square slump with drain line	No waste visible	M(2) C(3)

(1) For photo references, see Attachment 1.
M(2) (Metals) Potential presence of D006 (cadmium), D007 (chromium), D008 (lead), silver (D011), and/or D002 (corrosivity).
C(3) (Cyanide) Potential presence of cyanide, including F007 (cyanide plating solutions), F008 (plating bath residue where cyanide was used), F009 (spent stripping and cleaning baths containing cyanide), and/or D003 (reactivity characteristic).
S(4) (Solvents) Potential presence of spent halogenated solvents (F001), and/or ignitability (D001) characteristic.
H(5) (Hazardous Wastes) This secondary containment system may have contained wastes which were stored or treated during closure activities.
A(6) Analysis of water present is included in Appendix E.
(7) For Grid Locations, see Figure 3-1.



NOTES:

(1) AOC's NO. 1 AND NO. 153 CONSIST OF NUMEROUS SPECIFIC ITEMS LOCATED THROUGHOUT THE ENTIRE BUILDING

(2) THESE AOC's ARE LOCATED ON A MEZZANINE ABOVE THE PROCESS FLOOR LEVEL

LEGEND

(64) AREA OF CONCERN (AOC) FROM TABLES 3-1 THRU 3-5

TABLE 3-1 INTERIOR STRUCTURES, DEBRIS AND MISC. AOCs.
TABLE 3-2 ANCILLARY EQUIPMENT
TABLE 3-3 AIR EMISSION POINTS & AIR POLLUTION CONTROL DEVICES.
TABLE 3-4 PROCESS RELATED TANKS & VATS
TABLE 3-5 SECONDARY CONTAINMENT SYSTEM

DENNIS STACK
062-043889
REGISTERED PROFESSIONAL ENGINEER OF ILLINOIS

4-28-92

Project No. 9214-00000
By:
Chk'd By: DLS
Date: 4-17-92

FIGURE 3-1
Rock Island Arsenal—Building 64
AOC LOCATION MAP

TCT
St. Louis

activity such as sampling or preliminary debris removal. The inventory number could then be utilized to track each AOC through decontamination and disposal operations.

3.2.2 Category I

The waste materials included in Category I include the numerous articles of loose debris, asbestos-containing materials (ACM), and non-process equipment scattered throughout the interior of Building 64 (see Table 3-1). This ACM debris and scrap will be removed and properly disposed of to improve site safety and access.

3.2.3 Category II

The ancillary equipment and appurtenances throughout Building 64 into Category II. Typical examples of ancillary equipment are heating and ventilation equipment and plating process support equipment and piping (see Table 3-2 and Figure 3-1).

3.2.4 Categories III, IV, and V

Categories III, IV, and V are the most significant segments of the waste materials associated with Building 64. These categories consist of specific items identified as Hazardous Waste Management Areas of Concern (AOCs) during site assessment visits and/or records reviews conducted by TCT-St. Louis. The Category III items include the air exhaust and air pollution control systems throughout Building 64 (see Table 3-3 and Figure 3-1). Category IV includes all process tanks and/or vats as listed in Table 3-4 and as shown in Figure 3-1. The concrete secondary containment pits and their appurtenances comprise Category V (see Table 3-5 and Figure 3-1).

Phase-out of electroplating operation in Building 64 began in the Fall of 1988 and continued until March 15, 1991. The transfer of production operations to Building 212 occurred on a process-by-process basis. Ancillary equipment transferred from Building 64 to Building 212 is listed in Table 3-6. A "Hazardous Waste Log" maintained by RIA staff, which documents waste management activities during closure of Building 64 is presented in Appendix E.

Due to their value, chemical solutions present in all cadmium plating tanks in Building 64 (i.e. - AOCs 17, 20, 21, and 23 which have a maximum capacity of approximately 1,500 gallons) were transferred by 300-gallon tote tanks to Building 212 process tanks for re-use in the Fall of 1989. Similarly, approximately 90-95% of the contents of chromium tanks (i.e. -AOCs 31-33, 36-37, 55, 57, 67, 73, 74, 80, 95, 97, 101, 103, 106, 109-111, 114, 116, 118, and 120, which have a combined maximum capacity of approximately 34,500 gallons) were transferred by tote tank to Building 212. The other 5-10% of the chromium solutions from the AOC's identified above was transferred by tote tank along with chromium tank rinse waters to large (4,400-gallon) tanks (AOC's 55 and/or 57, RIA 24366 and 24368) in the south wing of Building 64 for "treatment". Several thousand gallons of chromium solutions may have been treated (see Waste Profile Sheet, Appendix E).

NOTE PITS CONTAINED LIQUIDS DURING SITE VISIT

Treatment in AOC's 55 and 57 consisted of boiling the liquid to reduce its volume. Any spillage in this area would have been collected in the secondary containment pit (AOC 61) beneath the tanks. Air emissions which resulted from boiling were collected by exhaust systems appurtenant to AOC's 55 and 57, and were controlled by fume scrubbers (AOC's 58 and 59). Seventy-two (72) drums of used black chrome solution (containing acetic acid) and 34 drums of used chromium solution were filled between January 23, 1990 and May 21, 1990. (Some of these drums were "treated" solutions, whereas others had been transferred directly from their original tanks without treatment. They are referred to under Control No's. 9064001 through 9064106 in the "Hazardous Waste Log".)

The drums containing chrome solutions were stored in the west wing of Building 64, just west of AOC 128. Originally, it was intended that these chrome solutions be sold due to

TABLE 3-6

EQUIPMENT RELOCATED FROM BUILDING 64 TO BUILDING 212

IDENTIFICATION #	DESCRIPTION
17433	Plastisol Oven
28130	Paint Booth
30327	Degreaser
30585	Greive Oven
30696	Despatch Oven
33285	Band Cut Off Saw
--	Paint Shaker
R1863/A R1863/B R1863/C	ID Chrome Rectifiers (3)
M0418.DOA	Lead Rectifier
C7773 C7834	Miscellaneous Rectifiers (2)
22393	Polisher
28562	Pangborn Grit Table
28792	Vacu-Blast Small Hand Blast
28931	Vacu-Blast Small Hand Blast
29047	Vacu-Blast, Alumina, Hand
29311	Wheelabrator House Blast "Big Bertha"
29350	Pangborn Glass Table
29351	Pangborn Glass Table
30368	Zero Hand Blast
30369	Zero Hand Blast
30549	Zero Rod Blast
31213	Vacu-Blast Vapor Blast
31422	Vacu-Blast Shot Peen
--	Barrel Brush
--	Bar Bender
--	Empire Tumble Blast (Small)

their metallic content. During the winter of 1990-1991, approximately 7 of the 106 drums containing chromium solutions leaked due to freezing and expansion of their contents in the unheated building. Spillage was collected using "oil dry". (This oil dry was collected in drums and categorized as hazardous waste (D002, 6, and/or 7) as described later in this section.) It is unlikely any of the liquids which leaked from the drums may have entered the secondary containment pit (AOC 122) which is parallel to and just west of the area where the drums were stored because a berm composed of oil dry was placed between the spill and AOC 122. Stains on the floor are visible near where the leakage occurred, and some cracks, deterioration, and floor joints were noted to be present in this area. After this incident, the drums were turned over to DRMO, manifested, and disposed as hazardous waste. The manifests (No's. 2387701, 2387702, and 2387727) describe these as "Waste Chromic Acid Solution, Corrosive Material, UN1755, D002, D006, D007, D008". Sixty-eight (68) drums were picked up on April 4, 1991, and 31 drums were picked up on April 9, 1991 by Metropolitan Environmental and transported to Michigan Disposal Inc., Belleville, Michigan. Six drums were picked up on May 2, 1991 by Leston Corporation and transported to Michigan Disposal Inc., Belleville, Michigan. For applicable manifests, see Appendix E.

Contents of tanks other than those containing chromium and cadmium solutions (e.g. copper, nickel, acid and alkaline solutions, rinse tanks, and some other miscellaneous liquid wastes) were not recycled. These materials were selectively combined in tanks (AOC's 55 and 57) in late 1989 and early 1990 for neutralization prior to boiling to reduce their volume. Information concerning the specific tanks whose contents were treated in this way is not available, but they probably included the following tanks: AOCs 3-12, 14-16, 18, 19, 22, 24-28, 35, 44-48, 50, 53, 54, 56, 65, 66, 68, 69, 72, 75, 76, 78, 79, 81, 82, 84, 85, 92, 96, 99, 100, 102, 104, 105, 107, 115, 117, 119, and 121, which have a combined maximum capacity of approximately 66,000 gallons. Occasionally, when the treatment tanks (AOC's 55 and 57) were full, wastes were held in AOC 56 (another 4,400-gallon tank adjacent to AOC's 55 and 57) and/or secondary containment pit AOC 86 (capacity approximately 9,200 gallons), located in the south wing, west side. After treatment, these miscellaneous liquid wastes were transferred to the north end of the east wing of Building 64, where they were stored in AOC's 24-28. The capacities of these tanks range from 2,457 to 2,959 gallons and their

maximum combined capacity is approximately 14,000 gallons. Any leaks or spills here would have been contained in the secondary containment pit below (AOC 42). In September and October, 1990, wastes stored in tanks (AOC's 24-28) were transferred to 185 55-gallon drums (which have a combined maximum capacity of 10,175 gallons). The "Hazardous Waste Log" indicates 4 of these drums were filled with solids, 16 drums were filled with sludge, and 165 drums were filled with liquids. A breakdown of the specific sources and content of these 185 drums is presented in Table 3-7. These drums were turned over to DRMO, manifested as "Hazardous Waste Liquid", N.O.S., ORM-E, NA9189, D006, D007, D008" (146 drums) and "Waste Corrosive Liquid N.O.S./Corrosive Liquid D002, 6, 7, and/or 8" (39 drums), and disposed of as hazardous waste. Sixty-eight (68) of these drums (Manifest 4290979) were picked up by GSX on December 19, 1990. Sixty-six (66) of these drums (Manifests 4290892 and 4290893) were picked up by Environmental Transportation Services on January 9, 1991. The final lot of 51 drums (Manifest 4290978) was picked up by GSX on January 10, 1991. All 185 drums were shipped to Special Wastes, Inc., Athens, Tennessee. For applicable Waste Profile Sheets and Uniform Hazardous Waste Manifests, see Appendix E.

A variety of other wastes, including both hazardous and non-hazardous wastes, were containerized in September-October, 1990 in fifty 55-gallon drums without any treatment. These wastes are listed in Table 3-8. The source of the wastes listed in Table 3-8 is not known with certainty. Twenty-five (25) of the 50 drums were categorized as hazardous waste, 3 were recycled, and 19 were considered non-hazardous waste. The waste classification of three drums is unknown. Hazardous wastes in 25 drums were turned over to DRMO, manifested, and disposed of as hazardous waste (see Table 3-8 and Appendix E). These wastes were transported by GSX to Special Waste, Inc., Athens, Tennessee in December, 1990, and January, 1991.

TABLE 3-7

BREAKDOWN OF HAZARDOUS WASTES STORED AT AOCs 24-28
AFTER TREATMENT AT AOCs 55 AND 57

Category	Description	No. of 55-Gallon Drums	Drum Control Numbers*	USDOT Name/Hazardous Class	UN or NA No.	USEPA Hazardous Waste No.	Manifest No./ Pick-Up Date
A	Acid Tank 1, Sludge	4	9064113-9064116	Hazardous Waste Liquid N.O.S./ORM-E	NA9189	D006, 7, 8	X
B	Acid Tank 2, Liquid	27	9064139-9064165	Waste Corrosive Liquid N.O.S./Corrosive Material	UN1760	D002, 6, 7	4290892 12/19/90
C	Acid Tank 2, Sludge	12	9064127-9064138	Waste Corrosive Liquid N.O.S./Corrosive Material	UN1760	D002, 6, 7, 8	4290892 12/19/90
D	Alkaline Tank 1, Liquid	34	9064215-9064247, 9064291	Hazardous Waste Liquid N.O.S./ORM-E	NA9189	D007, 8	X
E	Alkaline Tank 2, Liquid	43	9064171-9064201, 9064203-9064214	Hazardous Waste Liquid N.O.S./ORM-E	NA9189	D006, 7, 8	X
F	Alkaline Tank 3, Liquid	60	9064249-9064290, 9064293-9064308, 9064323-9064324	Hazardous Waste Liquid N.O.S./ORM-E	NA9189	D006, 7, 8	X
D, F	Alkaline Tanks 1, 3, Liquid	1	9064291	Hazardous Waste Liquid N.O.S./ORM-E	NA9189	D006, 7, 8	X
G, H, I	Alkaline Tanks, Solids	4	9064107-9064109, 9064202	Hazardous Waste Liquid N.O.S./ORM-E	NA9189	D006, 7, 8	X
TOTAL		185					

Note: Acid Tanks 1 and 2 and Alkaline Tanks 1, 2, and 3 correspond to AOCs 24-28.

X = 4290892-12/19/90, and/or 4290893-12/19/90, and/or 4290978-1/10/91, and/or 4290979-1/9/91

* = See Hazardous Waste Log, Appendix E.

TABLE 3-8

HAZARDOUS AND NON-HAZARDOUS WASTES DISPOSED AND MATERIAL RECYCLED FROM BUILDING 64 SEPTEMBER-OCTOBER 1990

Drum Control No.	Description	USDOT Name	Hazard Class	EPA Designation	UN or NA No.	Number of Drums	Manifest No. Pick-Up Date
HAZARDOUS WASTES							
9064117	Nickel chloride	Waste corrosive solid, N.O.S.	Corrosive material	-	UN-1759	1	4193172 1/8/91
9064118	Ammonium bifluoride	Waste corrosive solid, N.O.S.	Corrosive material	-	UN-1759	1	4193172 1/8/91
9064119 9064120 9064337	Miscellaneous paints and lacquers	Waste paint, N.O.S.	Flammable liquid	D002,1	UN-1263	3	4193171 1/8/91
9064121	Caustic solution	Waste corrosive solid, N.O.S.	Corrosive material	D002	UN-1760	1	4290972 1/8/91
9064124 9064309-310 9064248 9064312	Hydrofluoric acid	Waste hydrofluoric acid solution	Corrosive material	D002,6,7,8	UN-1790	5	4290893 12/19/90
9064125	Oil/trichloroethane mixture	Waste combustible liquid, N.O.S.	Combustible liquid	F001	NA-1993	1	4290893 12/19/90
9064169	RIA Mixture #5	Waste oxidizer corrosive solid, N.O.S.	Corrosive material	D001	NA-9194	1	4290972 1/8/91
9064313 through 9064321	HF sludge	Waste hydrofluoric acid solution	Corrosive material	D002,6,7,8	UN-1790	9	4193172 1/8/91
9064338-340	HD rust strip #10116 (triethanolamine, sodium hydroxide)	Waste corrosive liquid, N.O.S.	Corrosive material	D002,6,7,8	UN-1760	3	4290893 12/19/90

TABLE 3-8

HAZARDOUS AND NON-HAZARDOUS WASTES DISPOSED AND MATERIAL RECYCLED FROM BUILDING 64 SEPTEMBER-OCTOBER 1990

Drum Control No.	Description	USDOT Name	Hazard Class	EPA Designation	UN or NA No.	Number of Drums	Manifest No. Pick-Up Date
NON-HAZARDOUS WASTES							
9064126	Miscellaneous grease	Not regulated	None	NA	NA	1	4193171 1/8/91
9064166-168	Cryscoat oc	Not regulated	None	NA	NA	3 (2 mani-fested)	4193171 1/8/91
9064325-335	Stop-off wax	Not regulated	None	NA	NA	11	4193171 1/8/91
9064341	Liquid from round tote tank	Not regulated	None	NA	NA	1	No Manifests
9064110-112	Waxy oil	Not regulated	None	NA	NA	3	No Manifests
9064170	Ammonium persulfate	Not regulated	None	NA	NA	1	No Manifests
9064322	Miscellaneous tank clean-up	Not regulated	None	NA	NA	1	No Manifests
9064336	Degreaser	Not regulated	None	NA	NA	1	No Manifests
Drum Control No.	**Description**				**Number of Drums**		**Disposition**
RECYCLED WASTES							
9064122	SAE 10 oil and water				1		Recycled
9064123	Titan 150 oil				1		Recycled
9064311	Rust preventative oil				1		Recycled

Chemicals found on the premises in Building 64 (e.g., in bags, containers) were collected between January 17, 1991 and February 7, 1991, and placed in forty-five 55-gallon drums. Some of these wastes may have come from AOC 49 (chemical film tank, maximum capacity 560 gallons), AOC 128 (lead plating tank, maximum capacity 350-gallon), and AOC 54A (hydrofluoric acid tank, maximum capacity 910 gallons). Contents of seven drums (9064351, 9064352, 9064353, 9064380, 9064385, 9064386, and 9064387) were non-hazardous. The contents of the 45 drums are summarized in Table 3-9. Defense Re-utilization and Marketing Office (DRMO) was responsible for proper disposal of these wastes.

On February 13-19, 1991, clean-up wastes (including the "oil dry" referred to earlier) were collected and placed in 17 drums. Information concerning these wastes are summarized in Table 3-10. Manifest 2309496 (Appendix E) described contents of eleven drums as Hazardous Waste Solid ORM-E9189 (spill oil dry). These drums were picked up by Leston Corporation on May 15, 1991 and shipped to Michigan Disposal, Belleville, Michigan. Manifest 0298527 (Appendix E) described contents of seven drums as Hazardous Waste Solids ORM-E NA9189 (wooden pallets, oil dry, chromic acid). These were picked up by Leston Corporation on May 15, 1991 and transported to Clean Harbors of Baltimore, Baltimore, Maryland.

In April, 1990, wastes were containerized in 21 drums. These drums included 13 drums, Control Nos. 7911001-11, and 7911021-22, contents of which were described as "D002, D006, D007", one drum, Control No. 7911012, labeled "used oil", and 7 drums, Control Nos.7911013-7911019, referred to as "used filters". The specific sources of these wastes in Building 64 is unknown. Information concerning disposal of these 17 drums is not available. Defense Re-utilization and Marketing Office (DRMO) was responsible for proper disposal of these wastes.

The cyanide destruction tank (AOC 87) has not been used for 10-15 years. Recent closure activities have not included any cleanup of this unit, its secondary containment pit (AOC 157), or its air emission stack (AOC 154).

TABLE 3-9

CHEMICALS FOUND ON PREMISES IN BUILDING 64
JANUARY-FEBRUARY, 1991

Drum Control Nos.	Chemical Name	EPA Hazardous Waste Designation	Number of Drums
9064342-44	Lead Fluoborate	D008	3
9064379, 9064381, 9064345	Iridite 4P4	D002, 7	3
9064346, 9064364-68	Oakite Blackguard	D002	6
9064347	Oakite 100	D002	1
9064348-9	Sodium Bichromate	D002, 7	2
9064351	Zinc Carbonate	NA	1
9064352	Nickel Sulfate	NA	1
9064353	Silica Flour	NA	1
9064354-58	Oakite Stripper A-1	D002	5
9064359-62	Oakite 90	D002	4
9064363	Oakite LRS	D002	1
9064369	Oakite Chromicoat L-25	D002, 7	1
9064370	Oakite NRP	D001	1
9064371-74, 9064382	Fluoboric Acid	D002	5
9064375	Rodine 50	D002	1
9064376	Sodium Fluoride	D003	1
9064377	Enstrip NP2	D002	1
9064378	Alum Olive Green	D002, 7	1
9064380	Nickel Acetate (1)	NA	1
9064383-84	Hydrofluoric Acid	D002	2
9064385-86	Actane 32	NA	2
9064387	Copper Sulfate	NA	1

NA = Not Applicable (not considered hazardous)

TABLE 3-10 CLEAN-UP WASTES COLLECTED IN BUILDING 64 IN FEBRUARY, 1991			
Drum Control Nos.	**Description**	**EPA Hazardous Waste Designation**	**No. of Drums**
9064390-92 9064402-03	Wood with chrome	D007	5
9064406	Wood with chrome and sweepings	D007	1
9064398	Oil Dry 1 +3	D002, 7, 8	1
9064393 9064394 9064399 9064400	Oil Dry #2	D007	4
9064395-97	Oil Dry #3	D006, 7	3
9064405	Sweeping Material #1	D007	1
9064401 9064404	Sweeping Material #2	D007	2

Closure activities conducted to date have not addressed any of the wastes remaining in any of the secondary containment pits, appurtenant sumps and piping, air pollution control devices, or air emission stacks.

On April 16, 1991, DRMO sold to Waddell Brothers Metal Co. the right to salvage miscellaneous plating shop equipment such as "rotary tables, pump units, filter systems, hoists, power supply generator sets, rectifiers, heat exchangers, air purification systems, and miscellaneous steel, copper, brick-lined, and stainless steel tanks" from Building 64. A listing of the specific articles removed by Waddell Brothers Metal Co. was not generated. However, based on TCT-St. Louis' walk-through surveys and a listing of equipment present in Building 64 in 1988, it appears that no process tanks or air pollution control devices were removed. Some heat pumps, exchangers, rectifiers, and other electrical equipment were removed. Waddell Brothers' right to remove material from Building 64 expired on June 13, 1991.

4.0 MAP OF FACILITY

Building 64 at Rock Island Arsenal is located in Section 30: T18N: R1W, Davenport East, Iowa - Illinois Quadrangle.

This section provides a map of the Project Location (Figure 4-1) and a U.S.G.S. Survey Map of the Rock Island Arsenal facility (Figure 4-2). These maps were developed from (PFN-112 and PFN-185).

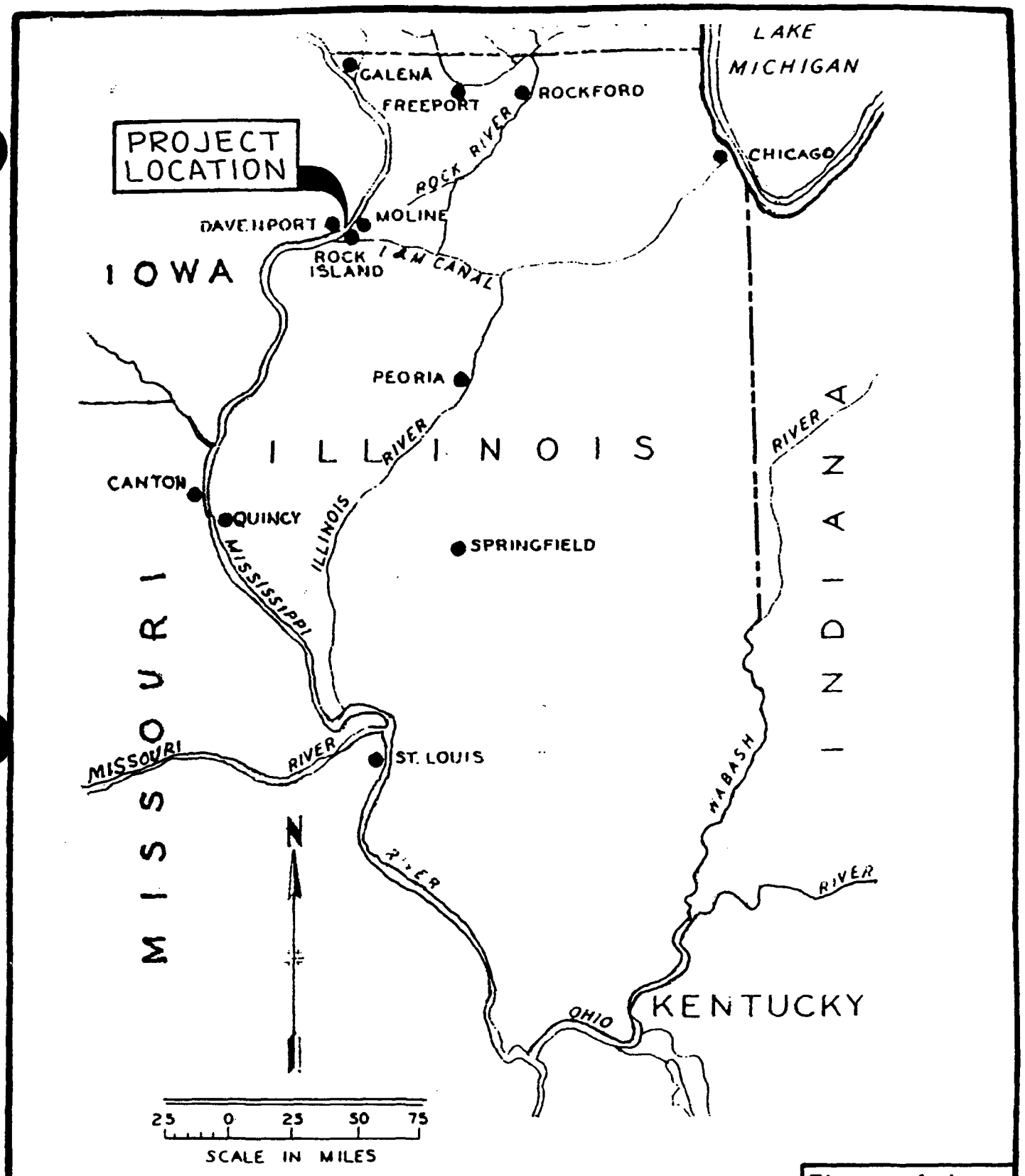


Figure 4-1

TCT
St. Louis

Project Location Map

Project No. 9214	By:	Chk'd By:	Date: 3-31-92

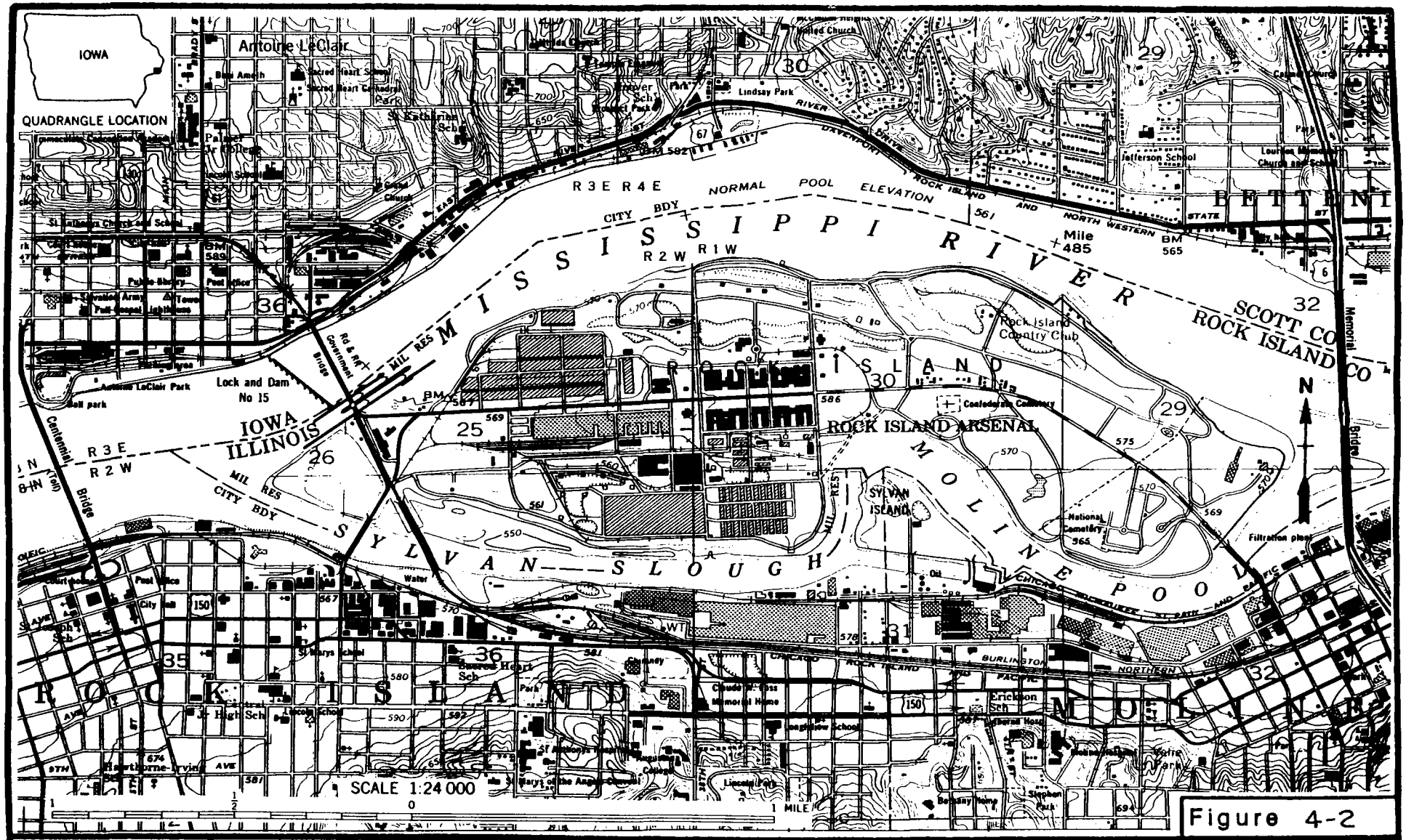


Figure 4-2

TCT

St. Louis

U. S. GEOLOGICAL SURVEY

Rock Island Arsenal Facility Map

Project No.	
By:	
Chk'd By:	DLS
Date:	4-17-92

5.0 DETAILED DRAWINGS OF HAZARDOUS WASTE MANAGEMENT UNITS

The existing configuration of Building 64 is as shown on the scale drawing presented as Figure 3-1 of Section 3 of this document (Figure 3-1 is located in the map folder inside the back cover of this document. The location and size of all vats and secondary containment pits are shown on the aforementioned figure and/or listed in Tables 3-4 and 3-5. In order to provide a more complete description of the existing conditions inside Building 64, a number of photographs have been included as Attachment A of this document. Attachment A includes a photograph identification log and a photograph location grid map (Figure 4-1). Additional details concerning process and utility piping and the relationship of Building 64 to other structures on RIA and to storm and sanitary sewers are provided in the following record drawings from the RIA Engineering and Housing Divisions Sites. The following specific drawings are included as Attachment B to this document.

PFN (from Appendix A)	Drawing Number
038	RIA 064-3 Cyanide Treatment 1957
037	RIA 064-2 Cyanide Treatment 1957
039	RIA 064-10 Trench Repair 1963 (East Wing)
040	RIA 064-14 Plating Tank 1966 Pit Repair (West Wing) (Sheet 3)
045	RIA 064-14 Plating Tank 1966 Pit Repair (West Wing) (Sheet 1)
006	PL 2493 Installation of Plating Tanks 1967 (West Wing)
009	18-04-01 Sanitary Sewer Plan 1983 (Sheet 7 of 17)
009	18-04-01 Storm Drainage Plan 1983 (Sheet 15 of 17)
008	RIA 064-14 Plating Tank Pit Repair 1966 (Sheet 1)
043	RIA 064-17 Air Make-Up Building 64 (Sheet 1 of 1)

019	35-33-02 Mechanical Exhaust System (Sheet M-6)
017	35-33-02 Air Pollution Control (Sheet M-8)
018	35-33-02 Air Pollution Control (Sheet M-7)
026	35-33-02 Air Pollution Control (Sheet M-1)
022	35-33-02 Baghouse #3 (Sheet M-3)
020	35-33-02 Exhaust System (Sheet M-4)
021	35-33-02 Exhaust System (Sheet M-5)
185	71-07-02 Storm Drain Plan and Profile (Sheet C-31)
186	71-07-02 Storm Drain Plan and Profile (Sheet C-32)
016	35-33-02 Air Pollution Control Baghouse #3 (Sheet M-9)

6.0 STORAGE AREA PAVEMENT DESCRIPTION

The type of surface containment structure inside building 64 is an eight inch thick reinforced concrete floor. The structural integrity appeares to be intact in most areas, however, a number of cracks, joint separations and surface deteriorations were noted. The plating operations in Building 64 were done over grates covered the secondary containment pits and trenches. These pits and trenches were used for secondary containment of spillage, process dragout, process wastewater discharges, and condensates before transfer to Building 65 for pretreatment with subsequent discharge to the sanitary sewer system directly linked to the RIPOTW. These pits and trenches are also made of eight inch concrete with reinforcement. These pits and trenches were constructed at various times throughout the operating life of the plating shop (Building 64). A review of record drawings revealed that some of the secondary containment pits were added in the 1940's and some during the 1960's. The entire area of Building 64 is under roof so that stormwater run-on and run-off is precluded.

The structural integrity of the existing concrete floor and secondary containment system cannot be determined at this time because the presence of dirt, dust, debris, and equipment inhibit detailed inspection. After the tanks and equipment have been removed from the building and the structure (floor and containment pits) has been decontaminated, a thorough inspection of the existing floor structure will be completed.

7.0 INVENTORY OF HAZARDOUS WASTE

A list of hazardous wastes generated, treated, stored, and/or disposed of at hazardous waste management units during closure of Building 64 is presented in Table 7-1.

Hazardous wastes stored in secondary containment systems since process operations ceased are summarized in Table 7-2. These wastes were not generated during building phaseout.

Information concerning potentially-contaminated bricks used to line some of the process tanks is summarized in Table 7-3. With the exception of AOC 24, building phaseout operations did not contribute to the potential contamination of these bricks.

Potentially-contaminated air pollution control devices used to control process emissions are summarized in Table 7-4. These devices were not contaminated during building phaseout activities.

Other materials collected in drums and disposed of as hazardous waste without treatment were previously summarized in Chapter 3.

The present condition of tanks and vats used during production operations was summarized in Table 3-4. Many of these vats and tanks have small quantities of scale, sludge, and/or residue. These tanks will be decontaminated prior to disposal.

TABLE 7-1

HAZARDOUS WASTE MANAGEMENT UNITS ACTIVELY USED DURING CLOSURE
BUILDING 64

Hazardous Waste Management Unit	Hazardous Waste, Generic Chemical Name	USEPA Hazardous Waste No.	Waste Generation, Treatment, Storage or Disposal Activity	Maximum Inventory	Status March 1992
AOC 55	Waste chromic acid solutions	D002, 6, 7, 8	Treatment - evaporation	Approximately 2,500 gallons (estimate total amount treated; tank capacity = 4,400 gallons)	1/4" scale on walls in portions. All other wastes removed.
AOC 55	See Footnote A	D002, 6, 7, 8, 11 F007, 8, 9 D003 F001 D001	Treatment - evaporation	Approximately 33,000 gallons (estimate total amount treated; tank capacity = 4,400 gallons)	1/4" scale on walls in portions. All other wastes removed.
AOC 57	Waste chromic acid solutions	D002, 6, 7, 8	Treatment - evaporation	Approximately 2,500 gallons (estimate total amount treated; tank capacity = 4,400 gallons)	1/4" greenish-gray scale. All other wastes removed.
AOC 57	See Footnote A	D002, 6, 7, 8, 11 F007, 8, 9 D003 F001 D001	Treatment - evaporation	Approximately 33,000 gallons (estimate total amount treated; tank capacity = 4,400 gallons)	1/4" greenish-gray scale. All other wastes removed.
AOC 56	See Footnote A	D002, 6, 7, 8, 11 F007, 8, 9 D003 F001 D001	Storage prior to treatment at AOC's 55 and 57	4,400 gallons	Light-greenish scale on sides. No other wastes present.

TABLE 7-1

HAZARDOUS WASTE MANAGEMENT UNITS ACTIVELY USED DURING CLOSURE
BUILDING 64

Hazardous Waste Management Unit	Hazardous Waste, Generic Chemical Name	USEPA Hazardous Waste No.	Waste Generation, Treatment, Storage or Disposal Activity	Maximum Inventory	Status March 1992
AOC 86	See Footnote A	D002, 6, 7, 8, 11 F007, 8, 9 D003 F001 D001	Storage prior to treatment at AOC's 55 and 57	72,225 gallons	Contains approximately 17,300 gallons aqueous solution (pH 6.5, Cr = 0.12 mg/l, Cd < 0.05 mg/l, Pb 0.15 mg/l) + 276 ft^3 sludge.
AOC 24 Acid Tank 1	Hazardous waste liquid N.O.S.	D006, 7, 8	Storage after treatment at AOC's 55 and 57	38 drums (2,090 gallons)	Hazardous wastes removed. Approximately 3" black, oily water in bottom.
AOC 25 Acid Tank 2	Waste corrosive liquid, N.O.S.	D002, 6, 7, 8	Storage after treatment at AOC's 55 and 57	39 drums (2,145 gallons)	Hazardous wastes removed. Rusty scale remains.
AOC 26 Alkaline Tank 1	Hazardous waste liquid, N.O.S.	D006, 7, 8	Storage after treatment at AOC's 55 and 57	35-1/2 drums (1,952 gallons)	Hazardous wastes removed. Rusty scale remains.
AOC 27 Alkaline Tank 2	Hazardous waste liquid, N.O.S.	D006, 7, 8	Storage after treatment at AOC's 55 and 57	45 drums (2,475 gallons)	Hazardous waste removed, ~3 ft^3 scale still present.
AOC 28 Alkaline Tank 3	Hazardous waste liquid, N.O.S.	D006, 7, 8	Storage after treatment at AOC's 55 and 57	61-1/2 drums (3,380 gallons)	Hazardous waste removed, rusty scale remains.
Near AOC 128	Waste chromic acid solution.	D002, 6, 7, 8	Storage after treatment at AOC's 55 and 57, and/or after being pumped from process tanks	106 drums (5,830 gallons)	Wastes disposed. Some stains on floor.

TABLE 7-1

HAZARDOUS WASTE MANAGEMENT UNITS ACTIVELY USED DURING CLOSURE
BUILDING 64

Hazardous Waste Management Unit	Hazardous Waste, Generic Chemical Name	USEPA Hazardous Waste No.	Waste Generation, Treatment, Storage or Disposal Activity	Maximum Inventory	Status March 1992
AOC 58	Corrosive materials	D002, 6, 7, 8	Treatment of fumes resulting from evaporation of wastes (fume scrubber) at AOC 55	~10 ft^3	Packing and dust present; estimate 10 ft^3.
AOC 59	Corrosive materials	D002, 6, 7, 8	Treatment of fumes resulting from evaporation of wastes (fume scrubber) at AOC 57	~10 ft^3	Packing and dust present; estimate 10 ft^3.
AOC 42	Hazardous waste liquid and waste corrosive liquid (dehydrated)	D002,6,7,8	Containment of any possible leaks/spills resulting from storage of hazardous wastes in AOC's 24-28.	Not believed to exceed quantity currently present.	Approximately 54 ft^3 sludge present. Majority probably due to process operations prior to closure.
AOC 122	Waste chromic acid solutions (dehydrated). Possible residual halogenated solvents	D002,6,7,8 F001 D001	Containment of leaks/spills resulting from storage of 106 drums after treatment of AOC's 55 and 57.	Not believed to exceed quantity currently present.	Approximately 502 ft^3 sludge present. Majority probably due to process operations.

A = corrosive liquids, alkaline cleaning solutions (e.g. - sodium hydroxide); nickel sulfate; nickel chloride solution; muriatic acid; copper solutions; nitric acid; sulfuric acid; deoxidizer; chromic acid; sodium chromate; sodium dichromate; manganese phosphate; black oxide; phosphoric sulfuric acid; black chrome; aqueous solutions containing chrome, lead, cadmium, and/or silver; residual cyanide from process terminated 10-15 years ago; zinc phosphate, Rochelle salt, residual quantities of halogenated solvents.

TABLE 7-2

HAZARDOUS WASTE MANAGEMENT UNITS NOT BELIEVED TO HAVE BEEN ACTIVELY USED DURING CLOSURE
BUILDING 64

Hazardous Waste Management Unit	Hazardous Waste, Generic Chemical Name	USEPA Hazardous Waste No.	Waste Generation, Treatment, Storage or Disposal Activity	Maximum Inventory	Status March 1992
AOC 38	Hazardous waste liquid and waste corrosive liquid, dehydrated. Possible residual cyanide wastes. Possible halogenated solvent wastes.	D002, 6, 7, 8, 11 F007, 8, 9 D003 F001 D001	Secondary containment pit, where wastes (likely hazardous) are stored; sludge accumulated here due to electroplating processes.	Not believed to exceed quantity currently present.	Approximately 73 ft^3 sludge present.
AOC 39	Hazardous waste liquid and waste corrosive liquid, dehydrated. Possible residual cyanide wastes. Possible halogenated solvent wastes.	D002, 6, 7, 8, 11 F007, 8, 9 D003 F001 D001	Secondary containment pit, where wastes (likely hazardous) are stored); sludge accumulated here due to electroplating processes.	Not believed to exceed quantity currently present.	Approximately 90 ft^3 sludge present.
AOC 40	Hazardous waste liquid and waste corrosive liquid, dehydrated. Possible residual cyanide wastes.	D002, 6, 7, 8, 11 F007, 8, 9 D003	Secondary containment pit, where wastes (likely hazardous) are stored); sludge accumulated here due to electroplating processes.	Not believed to exceed quantity currently present.	Approximately 92 ft^3 sludge present.

TABLE 7-2

HAZARDOUS WASTE MANAGEMENT UNITS NOT BELIEVED TO HAVE BEEN ACTIVELY USED DURING CLOSURE
BUILDING 64

Hazardous Waste Management Unit	Hazardous Waste, Generic Chemical Name	USEPA Hazardous Waste No.	Waste Generation, Treatment, Storage or Disposal Activity	Maximum Inventory	Status March 1992
AOC 41	Hazardous waste liquid and waste corrosive liquid, dehydrated.	D002, 6, 7, 8, 11	Secondary containment pit, where wastes (likely hazardous) are stored); sludge accumulated here due to electroplating processes.	Not believed to exceed quantity currently present.	Approximately 88 ft^3 sludge present.
AOC 62	Hazardous waste liquid and waste corrosive liquid, dehydrated. Possible halogenated solvents wastes.	D002, 6, 7, 8, 11 F001 D001	Secondary containment pit, where a small quantity of wastes (possibly hazardous) is are stored); sludge accumulated here due to degreasing operations.	Not believed to exceed quantity currently present.	Approximately 1 ft^3 sludge present.
AOC 63	Hazardous waste liquid and waste corrosive liquid, dehydrated.	D002, 6, 7, 8, 11	Secondary containment pit, where wastes (likely hazardous) may be stored; sludge accumulated here due to electroplating processes.)	Not believed to exceed quantity currently present.	Unknown.

TABLE 7-2

HAZARDOUS WASTE MANAGEMENT UNITS NOT BELIEVED TO HAVE BEEN ACTIVELY USED DURING CLOSURE
BUILDING 64

Hazardous Waste Management Unit	Hazardous Waste, Generic Chemical Name	USEPA Hazardous Waste No.	Waste Generation, Treatment, Storage or Disposal Activity	Maximum Inventory	Status March 1992
AOC 64	Hazardous waste liquid and waste corrosive liquid, dehydrated.	D002, 6, 7, 8, 11	Secondary containment pit, where wastes (likely hazardous) are stored; sludge accumulated here due to electroplating processes.	Not believed to exceed quantity currently present.	Approximately 25 ft^3 sludge present.
AOC 129	Hazardous waste liquid and waste corrosive liquid, dehydrated. Possible residual cyanide wastes. Possible halogenated solvent wastes.	D002, 6, 7, 8, 11 F007, 8, 9 D003 F001 D001	East wing sump.	Not believed to exceed quantity currently present.	Approximately 43 ft^3 sludge present.
AOC 130	Hazardous waste liquid and waste corrosive liquid, dehydrated. Possible halogenated solvents wastes.	D002, 6, 7, 8, 11 F001 D001	Secondary containment pit, where wastes (likely hazardous) are stored; sludge accumulated here due to electroplating processes.	Not believed to exceed quantity currently present.	Approximately 6 ft^3 sludge present.

TABLE 7-2

HAZARDOUS WASTE MANAGEMENT UNITS NOT BELIEVED TO HAVE BEEN ACTIVELY USED DURING CLOSURE
BUILDING 64

Hazardous Waste Management Unit	Hazardous Waste, Generic Chemical Name	USEPA Hazardous Waste No.	Waste Generation, Treatment, Storage or Disposal Activity	Maximum Inventory	Status March 1992
AOC 157	Hazardous waste liquid and waste corrosive liquid, dehydrated. Possible residual cyanide wastes.	D002, 6, 7, 8, 11 F007, 8, 9 D003	Secondary containment pit, where wastes may be stored; sludge accumulated here due to electroplating processes.	Not believed to exceed quantity currently present.	Unknown.
AOC 60	Hazardous waste liquid and waste corrosive liquid, dehydrated. Possible halogenated solvents wastes.	D002, 6, 7, 8, 11 F007, 8, 9 D003	Secondary containment pit, where wastes (likely hazardous) are stored; sludge accumulated here due to electroplating processes.	Not believed to exceed quantity currently present.	Approximately 55 ft^3 sludge present. Majority probably due to process operations prior to closure.
AOC 61	Hazardous waste liquid and waste corrosive liquid, dehydrated. Possible residual cyanide wastes. Possible halogenated solvent wastes.	D002, 6, 7, 8, 11 F007, 8, 9 D003 F001 D001	Secondary containment pit, where wastes (likely hazardous) are stored; sludge accumulated here due to electroplating processes.	Not believed to exceed quantity currently present.	Approximately 59 ft^3 sludge present. Majority probably due to process operations prior to closure.

TABLE 7-2

HAZARDOUS WASTE MANAGEMENT UNITS NOT BELIEVED TO HAVE BEEN ACTIVELY USED DURING CLOSURE
BUILDING 64

Hazardous Waste Management Unit	Hazardous Waste, Generic Chemical Name	USEPA Hazardous Waste No.	Waste Generation, Treatment, Storage or Disposal Activity	Maximum Inventory	Status March 1992
AOC 131	Hazardous waste liquid and waste corrosive liquid, dehydrated. Possible residual cyanide wastes. Possible halogenated solvent wastes.	D002, 6, 7, 8, 11 F007, 8, 9 D003 F001 D001	Secondary containment pit, where wastes (likely hazardous) are stored; sludge accumulated here due to electroplating processes.	Not believed to exceed quantity currently present.	<11 ft^3
AOC 20	Possible waste cadmium solutions and/or residual chromium cyanide.	D002, 6, 7, 8, 11 F007, 8, 9 D003	Process solutions apparently not fully removed from this tank.	201 gallons.	1/2" dark-brown sludge (<1 ft^3) remains on bottom.
AOC 27	Possible hazardous waste liquid, N.O.S. (dehydrated).	D006, 7, 8	Storage of sludge in this tank after treatment; not removed.	2,475 gallons.	3 ft^3 remaining at bottom of tank.
AOC 34	Wax possibly contaminated with metals.	D006, 7, 8	Wax not fully removed from tank during closure.	471 gallons.	As much as 106 gallons remain.
AOC 51	Oil potentially contaminated with metals or solvents.	D006, 7, 8 F001 D001	Oil not fully removed from tank during closure.	785 gallons.	Approximately 17 gallons remain.

TABLE 7-2

HAZARDOUS WASTE MANAGEMENT UNITS NOT BELIEVED TO HAVE BEEN ACTIVELY USED DURING CLOSURE
BUILDING 64

Hazardous Waste Management Unit	Hazardous Waste, Generic Chemical Name	USEPA Hazardous Waste No.	Waste Generation, Treatment, Storage or Disposal Activity	Maximum Inventory	Status March 1992
AOC 52	Grease potentially contaminated with metals or solvents.	D006, 7, 8 F001 D001	Grease not fully removed from tank during closure.	189 gallons.	Approximately 2 gallons remain.
AOC 83	Sludge potentially contaminated with metals.	D002, 6, 7, 8	Sludge not removed from skimmer during closure.	7.5 ft^3	Approximately 5 ft^3 sludge.
AOC 115A	Sludge potentially contaminated with metals.	D002, 6, 7, 8	Sludge not removed from this vat during closure.	3.4 ft^3	<1.0 ft^3 sludge.
AOC 115B	Sludge potentially contaminated with metals.	D002, 6, 7, 8	Sludge not removed from this vat during closure.	1.4 ft^3	<1.0 ft^3 sludge.

TABLE 7-3

SUMMARY OF POTENTIALLY CONTAMINATED BRICK TANK LININGS

AOC #	Tank Description	Interior Dimensions Length (in) Width (in) Depth (in)	Maximum Inventory of Potentially Contaminated Brick ft^3	Potential Hazardous Constituents
24	Muriatic Acid (Tank 3)	240	90 ft^3	M(2) C(3) S(4)
		46		
		49		
31	Chromic Acid	63	28 ft^3	M(2)
		36		
		96		
32	Chromic Acid	118	35 ft^3	M(2)
		39		
		72		
33	Chromic Acid	48	25 ft^3	M(2)
		40		
		96		
35	Water	118	36 ft^3	-
		40		
		72		
36	Chromic Acid	118	35 ft^3	M(2)
		39		
		72		

TABLE 7-3

SUMMARY OF POTENTIALLY CONTAMINATED BRICK TANK LININGS

AOC #	Tank Description	Interior Dimensions Length (in) Width (in) Depth (in)	Maximum Inventory of Potentially Contaminated Brick ft^3	Potential Hazardous Constituents
37	Chromic Acid	118	35 ft^3	M(2)
		39		
		72		
95	Chromic Acid	100	66 ft^3	M(2)
		32		
		96		
96	Alkali Anode Cleaner (Rochelle Salt)	100	66 ft^3	M(2)
		32		
		96		
97	Chromic Acid	139	60 ft^3	M(2)
		27		
		67		
101	Chromic Acid	140	61 ft^3	M(2)
		26		
		69		
103	Chromic Acid	140	64 ft^3	M(2)
		26		
		72		

TABLE 7-3

SUMMARY OF POTENTIALLY CONTAMINATED BRICK TANK LININGS

AOC #	Tank Description	Interior Dimensions Length (in) Width (in) Depth (in)	Maximum Inventory of Potentially Contaminated Brick ft^3	Potential Hazardous Constituents
106	Chromic Acid	140	64 ft^3	M(2)
		26		
		72		
109	Chromic Acid	140	64 ft^3	M(2)
		26		
		72		
110	Chromic Acid	140	64 ft^3	M(2)
		26		
		72		
111	Chromic Acid	141	62 ft^3	M(2)
		27		
		68		
114	Chromic Acid	140	64 ft^3	M(2)
		26		
		72		
116	Chromic Acid	140	64 ft^3	M(2)
		26		
		72		

TABLE 7-3

SUMMARY OF POTENTIALLY CONTAMINATED BRICK TANK LININGS

AOC #	Tank Description	Interior Dimensions Length (in) Width (in) Depth (in)	Maximum Inventory of Potentially Contaminated Brick ft^3	Potential Hazardous Constituents
117	Phosphoric Sulfuric Acid	140	80 ft^3	M(2)
		26		
		72		
118	Chromic Acid	140	64 ft^3	M(2)
		26		
		72		
120	Chromic Acid	140	64 ft^3	M(2)
		26		
		72		

(1) Estimate based on dimensions of tank and brick.

M(2) (Metals) Potential presence of D006 (cadmium), D007 (chromium), D008 (lead), silver (D011) and/or D002 (corrosivity).

C(3) (Cyanide) Potential presence of cyanide, including F007 (cyanide plating solutions), F008 (plating bath residue where cyanide was used), F009 (spent stripping and cleaning baths containing cyanide), and/or D003 (reactivity characteristic).

S(4) (Solvents) Potential presence of spent halogenated solvents (F001), and/or ignitability (D001) characteristic.

TABLE 7-4

AIR POLLUTION DEVICES POTENTIALLY CONTAMINATED WITH HAZARDOUS WASTES

AOC #	Potential Hazardous Waste Generic Chemical Name	USEPA Hazardous Waste No.	Activity	Maximum Inventory	Status March, 1992
43	Dust potentially contaminated with metals	D002, 6, 7, 8	Fume scrubber used during process operation.	N/A	Contents of interior unknown.
123-126	Dust potentially contaminated with metals	D002, 6, 7, 8	Fume scrubbers used during process operation.	N/A	Dusts observed present inside system.
135	Dust potentially contaminated with metals and/or solvents	D002, 6, 7, 8 F001 D001	Exhaust system; captured process fumes potentially contaminated with metals and/or solvents.	N/A	Contents of interior unknown.
136	Dust potentially contaminated with metals	D002, 6, 7, 8	Exhaust system; captured process fumes potentially contaminated with metals.	N/A	Contents of interior unknown.
137	Dust potentially contaminated with metals and solvents	D002, 6, 7, 8 F001, D001	Exhaust system; captured process fumes potentially contaminated with metals and solvents.	N/A	Contents of interior unknown.
138	Dust potentially contaminated with metals	D002, 6, 7, 8	Air intake/exhaust systems.	N/A	Dust observed in fan housings.
139	Dust potentially contaminated with metals and/or cyanide	F007, 8, 9 D003	Air exhaust system.	N/A	Unknown.
140	Dust potentially contaminated with metals and/or cyanide	F007, 8, 9 D003	Air exhaust system.	N/A	Unknown.
141	Dusts potentially contaminated with metals and/or solvents	D002, 6, 7, 8 F001, D001	Degreaser exhaust stacks used during process operation.	N/A	Unknown.

TABLE 7-4

AIR POLLUTION DEVICES POTENTIALLY CONTAMINATED WITH HAZARDOUS WASTES

AOC #	Potential Hazardous Waste Generic Chemical Name	USEPA Hazardous Waste No.	Activity	Maximum Inventory	Status March, 1992
142	Dusts potentially contaminated with metals and/or cyanide	D002, 6, 7, 8 F007, 8, 9 D003	Exhaust system used during process operation.	N/A	Unknown.
143	Dusts potentially contaminated with metals, cyanide, and/or solvents.	D002, 6, 7, 8 F007, 8, 9 D003 F001 D001	Exhaust stacks used during process.	N/A	Unknown.
144	Dust potentially contaminated with metals.	D002, 6, 7, 8	Baghouse used to collect blast cabinet dust.	N/A	Unknown.
145	Dust potentially contaminated with metals.	D002, 6, 7, 8	Duct work.	N/A	Unknown.
154	Dust potentially contaminated with metals and/or cyanide.	D002, 6, 7, 8 D003 F007, 8, 9	Exhaust stack and fan.	N/A	Unknown.
155	Dust potentially contaminated with metals.	D002, 6, 7, 8	Rotoclone.	N/A	Unknown.
156	Dust potentially contaminated with metals.	D002, 6, 7, 8	Exhaust and air purification systems.	N/A	Unknown.

8.0 SCHEDULE FOR CLOSURE

This section of the closure plan delineates the anticipated timetable for accomplishing all activities associated with closure of Building 64.

The various activities involved in the decontamination and closure of Building 64 are interrelated as described in Section 3 and Section 11 of this document.

The following are major anticipated milestones associated with the Building 64 closure:

ASK FOR QUARTERLY UPDATE

	Milestone	Date
1.	Submit Closure Plan to IEPA -	May 1992
2.	Receive IEPA Comments on Closure Plan -	August 1992
3.	Closure Design (Plans and Specifications) -	February 1993
4.	RIA Procurement of Clean-Up Contractor -	June 1993
5.	Decontamination of AOCs -	December 1993
6.	Conduct Sampling Plan -	January 1994
7.	Certification Submittal -	March 1994

Requests for modifications of the approved partial Closure Plan for Building 64 HWMU will be made in accordance with this section. The request for modification must be made at least 90 days prior to the certification due date. The time extension request will demonstrate:

a. Closure activities will, of necessity, take longer than the time period included in the approved closure plan.

b. The owner/operator has taken and will continue to take all steps to prevent threats to human health and the environment from the unclosed but inactive facility.

Justification of the time extension request will be provided.

9.0 AIR EMISSIONS CONTROL

Fugitive particulate air emissions are a primary environmental concern with respect to the decontamination and waste removal activities planned for Building 64. Operational air emission control during the closure will be accomplished in accordance with OSHA and other applicable regulations so that fugitive emissions are controlled and nuisance conditions are prevented.

10.0 PERSONNEL SAFETY AND FIRE PROTECTION

All site activities should be performed in accordance with OSHA and other applicable regulatory requirements. These requirements include hazard communication, medical surveillance, health and safety programs, air monitoring, decontamination, and training. General site workers shall have received 48 hours of training and 3 days of actual field experience under the direct supervision of a trained experienced supervisor, at a minimum. Managers and supervisors shall have received an additional 8 hours of specialized training on managing hazardous waste operations. The contractor(s) will be required to submit a site-specific Work Plan and Safety Plan to RIA for review prior to initiation of on-site work. The contractor(s) shall attend a scheduled pre-construction conference to be conducted by RIA staff.

11.0 DECONTAMINATION OF BUILDING 64

Hazardous waste residues shall be removed from Building 64. Contaminated residues from the structure's interior concrete paved areas, walls, ceiling and window sills, etc., as well as the metal finishing process equipment such as tanks, vats, containment system components, appurtenances (such as connecting piping, pumps, sumps, heaters), and air pollution control and ventilization equipment (hoods, duct work, scrubbers, etc.) will be removed. Hazardous waste residues shall be removed and temporarily staged in Building 64 until they can be properly disposed of as described in Section 15. An overall "Phased" decontamination approach will be followed. The closure phases are:

Phase I	Decontamination and Removal of Loose Debris and Scrap Material and Site Access Control.
Phase II	Asbestos Abatement Program
Phase III	Decontamination and removal of Ancillary Equipment
Phase IV	Decontamination and removal of the Hazardous Waste Management Areas of Concern (AOC's).
Phase V	Decontamination of the structure.

The general approach to closure of Building 64 will be:

1) Physically remove, by dry processes such as scraping or blasting, the residual materials from the various tanks, vats, equipment, and structure;

2) Containerize for proper disposal all removed residual material;

3) Steam clean and triple rinse all affected surfaces prior to scrap salvage, disposal as demolition waste, or building reuse, and;

4) Selected items such as air pollution ductwork may be pulverized and/or shredded and containerized and disposed of as hazardous waste if the cleaning process proves too cumbersome.

5) Some potentially-contaminated waste streams (e.g., brick tank linings) may require analytical testing (e.g., TCLP, corrosivity, reactivity, and/or ignitability) to determine whether they should properly be classified as hazardous waste. If this waste is not determined to be hazardous, it will be steam cleaned and triple-rinsed prior to proper disposal. If representative sample(s) are determined to be hazardous, this waste will be disposed of as hazardous waste, possibly after on-site pulverization to reduce volume.

DECON OF WASTE MATERIAL NOT NECESSARY

All phases of the decontamination of Building 64 will be conducted by appropriately trained and experienced hazardous waste management contractors and personnel. The clean-up contractor shall submit an overall Work Plan and a Site Specific Health and Safety Plan to RIA for approval prior to initiation of any on-site activities. All site activities will be overseen by a (RIA designated) qualified environmental professional and a site safety officer (SSO). Observation, monitoring and testing during decontamination actions will help to ensure that the Closure Plan and Health and Safety Plan requirements are fulfilled.

The management approach for the decontamination of Building 64 will be conducted based on the phased approach previously described. The phased approach is designed to increase the effectiveness and control of the project manager and professional project oversight personnel to manage and document the decontamination process. The phased approach is designed to separate the potentially more hazardous materials (AOC-Tables 3-1 through 3-5) such as vat residues, process piping, etc.) from nonhazardous waste materials (such as office furniture, toilet accoutrements, etc.). In addition, the phased approach will minimize the volume of hazardous waste to be disposed of by avoiding the contamination of nonhazardous materials by potentially hazardous material (such as vat residue) via the air migration pathway of particulate emissions during decontamination and removal operations. The phased approach will also facilitate an emphasis on the overall Health and Safety Plan

implementation considerations (see Sec. 10) as well as air emission control considerations (see Sec. 9).

12.0 SOIL CLEANUP LEVELS

Until the sampling effort which is described in this Closure Plan in Section 13 is IEPA-approved and conducted, it is assumed that there has been no significant release to the environment. Following sampling and analysis, the data will be interpreted and if necessary, a risk assessment which addresses the surface and ground water usage, geology, toxicity, etc., may be performed, as well as more extensive sampling and monitoring to provide information sufficient to arrive at safe levels for the potential contaminants of concern. The eventual decision to utilize either Agency established cleanup objectives or to propose "health based" cleanup objectives will be made by RIA after evaluation of the sampling results and discussion with the Agency.

13.0 SAMPLING PLAN AND ANALYTICAL METHODS

13.1 Introduction

The plating operations associated with Building 64 activities have occurred inside the structure except for an external cyanide destruct system located at the northeast corner of the west wing of the building. The cyanide destruct unit was taken out of service prior to 1974. The various plating tanks and other Areas of Concern (AOC) are located over or adjacent to a network of secondary containment concrete floor pits. The primary objective of the Sampling Plan is to demonstrate clean closure of Building 64.

13.2 Soil and Groundwater Information

Results of only one soil boring in the immediate vicinity of Building 64 (PFN-173) are available for review. These results provide the basis for a soil profile. The depth of that boring was 9.7 feet. The boring was drilled through asphalt pavement, through the roadway's rock base and into silty sand. This silty sand was encountered between 1 foot and 8.5 feet below the surface. At 8.5 feet there was a stratum change to sand and gravel. At 9.0 feet and below, bedrock was encountered. At 9.7 feet the drilling was terminated. This type of profile is assumed to be representative of the vicinity of Building 64. This type of profile also agrees with the overall surficial geology of the island.

In the event that the soil sampling indicates the presence of contamination, the shallow groundwater could be initially evaluated through the use of existing monitoring wells at RIA, one upgradient and three downgradient. (No groundwater monitoring is proposed at this time). Since presence of soil contamination has not been determined. The overall trend of the groundwater flow at RIA is to the southwest. The nearest upgradient well is situated about two blocks away near Building 56. The three closest downgradient wells are situated to the southwest of Building 64 approximately 4 to 5 blocks away, near Building 220. These

wells range in depth between 13.5 and 18.7 feet (PFN-107). No sampling of the shallow groundwater is proposed at this time.

The first (shallowest) useable aquifer formerly provided potable water to Buildings 25 and 32. It is not being used at this time as water is being furnished by the Rock Island Arsenal potable system. No sampling of this aquifer is proposed at this time.

The second aquifer has been tapped for industrial process water in Building 220 and for potable water at Building 118, the National Cemetery. Both are inactive. No sampling of this aquifer is proposed at this time.

There is significant distance and several layers of shale between the third aquifer and the surface. Rock Island Arsenal has a deep well, Building 51, about 250 feet northwest of Building 64. This well is used only for emergency potable water and is functioned periodically. The well water is tested by the IEPA. At one time wells located on the flood plains and completed in the deep aquifers flowed under artesian pressure (Udden, 1896; Pratt, 1883). Continued withdrawal of water has reduced the hydrostatic pressure, so that artesian flow no longer occurs in Rock Island County (PFN-179). No sampling of this aquifer is proposed at this time.

13.3 Location of Soil Samples

The locations for sampling soil will be selected based upon a review of the geology described above and in Section 2, historical maps and drawings of the building, results of site inspections, and discussions with IEPA personnel. Sampling locations cannot be determined at this time because the presence of sludge, dirt, and equipment inhibits the ability to identify cracks, joints, and deterioration potentially related to release of contamination. The primary objective of the sampling will be to determine if the tanks and/or associated containment pits and storage areas within Building 64 have allowed a release of contaminants into the environment.

13.4 Sampling Methodology

Based upon evaluation of soil profile data from the one soil boring directly in front of Building 64 (PFN-173), the surficial material is approximately 10 feet in depth. Several of the sump pits are approximately 7-11 feet in depth from the top of the concrete flooring. If leakage has occurred it has most likely occurred at the lowest points in Building 64. Therefore, sampling will be done in the soil profile beneath the concrete pits.

The soil borings will be drilled and sampled after a concrete coring machine is used to penetrate the 8 inches ± of concrete slab. The potential for these pits, trenches and sump pump pits to be sitting on or very near to bedrock is great. At a minimum, one soil sample would be taken from each proposed boring. The samples would be taken to a depth of 6 inches as measured from the backfill/natural soil interface. It is anticipated that less than 5-feet of soil and/or granular backfill material will be encountered between the bottom of the concrete pits and bedrock.

The soil borings will be performed after the concrete containment pits, trenches and sumps have been decontaminated. This will reduce the potential for any cross-contamination and allow for the clearing of the interior debris in order to facilitate the effectiveness of the sampling team to approach its desired target locations. The locations of the soil borings will be reviewed after the pits have been cleaned and inspected. Alternate or additional borings will be made as appropriate, based on the identification of structural defects in the concrete containment system.

The soil borings will be sampled using a clean stainless steel split spoon. One soil/sediment sample from the cyanide destruct unit discharge sump will be collected by a stainless steel spoon. The soil samples will be placed into a clean stainless steel pan, mixed, and placed into appropriate sample containers. The samples for volatile organics will be collected first prior to mixing and will be taken in accordance with the procedures described in Attachment 7 of the IEPA Instructions for the Preparation of Closure Plans. A copy of Attachment 7 is presented in Appendix B of this document. The duplicate soil samples will be collected at the collector's discretion.

Borings through the pits will be accomplished using a concrete boring machine. After concrete is penetrated, the soil samples will be collected using a bucket auger and a stainless steel split spoon in the interval between the bottom of the concrete and bedrock. In the event that the concrete floor of any pit is in contact with bedrock, a 6-inch core of bedrock will be taken by use of the concrete boring machine.

The soil samples will be analyzed for cadmium, chromium, copper, nickel, zinc, cyanide, and VOAs (priority pollutants) as described in Section 13.5. These contaminants are the primary contaminants present in electroplating wastes generated at RIA and are considered "tracers" which might indicate presence of other contaminants. After each boring is complete, it will be sealed from the bottom to the surface with grout.

13.5 Sample Handling

Once samples have been placed in the appropriate containers, custody sheets will be completed and the containers will be placed directly into a cooler, iced, and shipped to the appropriate lab for analysis. Prior to collection of each sample, sampling equipment (split spoon, stainless steel pan, stainless steel spoon) will be washed with Alconox and deionized (DI) water and rinsed with DI water.

13.6 Drilling Activities

A safety plan will be prepared by the drilling contractor as described in Section 10. Each drilling site should be inspected and approved as safe for drilling by the on-site geologist and site safety officer. Prior to placement of the rig on-site, the local utility company and the Engineering and Housing Department of the Arsenal should be contacted to insure each drilling location is clear of utility lines. All personnel participating in the on-site sampling program should have documentation of OSHA-required 40-hour training at hazardous waste sites, as well as CPR, first aid, training and respirator fit-test documentation. After the rig has been positioned on-site, all safety criteria should be checked. The augers, including the

five foot continuous sampler will be advanced. The continuous sampler will be removed from the augers and handed to the on- site geologist for sample extraction and classification. If required, another clean continuous sampler should be inserted into the drill stem and the boring should continue. After each sample has been logged the continuous sampler will be washed with an Alconox soap solution & rinsed with DI water.

The cleaning procedures are as follows:

I. Cleaning Equipment Between Boreholes

Drilling equipment should be cleaned prior to commencement of field exploration activities and between individual explorations. The drilling equipment to be cleaned will include, but not be limited to:

- Casing
- Drill rods
- Drill bits
- Augers
- Tamping hammers
- Measuring tapes
- Soil Sampling devices
- Water lines and hoses

The drill rig and drilling equipment such as pumps, jacks, collars, couplings,and hoses which do not enter the borehole are not required to be cleaned between borings.

II. Cleaning of Sampling Devices During Borehole Advancement

Sampling devices used to advance boreholes and collect soil samples for physical characterization should be cleaned after each soil sample is obtained and before subsequent samples are obtained. Specifically, sampling devices to be cleaned include split spoons and thin-walled shelby tubes. A minimum of three split spoon sampling devices shall be available for use during the advancement of each boring. Split

spoons should be cleaned after each soil sample is obtained. The samples collected from the borings will be stored and labeled for testing. Classification of all materials and all drilling operations will be recorded and logged.

The soil boring cuttings will be containerized in 55-gallon drums during drilling. Prior to placement in the drums, the cuttings will be placed on plastic sheets laid out across the ground next to the borehole until drilling is complete. Disposal of the drums and their contents of cuttings and plastic will be accomplished in accordance with Section 15.

13.7 Borings Logs

Logs detailing drilling practices shall be maintained in a field notebook and recorded on field boring log forms. The logs shall be prepared by a qualified Geologist or Geotechnical Engineer present during all drilling. Information provided in the logs shall include, but not be limited to the following:

- Thickness of each stratum, including thin lenses and layers
- Identification of the material of which each stratum is composed according to the Unified Soil Classification System, or standard rock nomenclature, as applicable
- Depth interval from which each sample was taken
- Depth at which hole diameter (bit sizes) change
- Depth at which groundwater is first encountered
- Depth to the static water level and changes in static water level with well depth
- Total depth of completed well
- Type of drilling equipment
- Type and size of samplers used
- Depth of grout
- Depth of bentonite seal
- Borehole diameter
- Depth and type of well casing

- Description of well screen, e.g. length, location, diameter, slot size, material, and manufacturer
- Any sealing off of water-bearing strata
- Static water level upon completion of well and after development
- Drilling dates
- Construction details of monitoring well
- Manufacturer and quantities of all materials used
- Evidence of contamination, i.e. odors, photo ionization detector measurements, staining, etc.

13.8 Documentation

All information pertinent to sample collection will be recorded by the sampling personnel in various forms: field logbook, sample tags, sample sheets, photographs, chain-of-custody forms etc. Proper documentation and document control are crucial to the overall management of the closure of Building 64. Therefore, it is imperative that all field personnel keep detailed records of sampling activities, observations and thoroughly review all notes before leaving the site. All samples should be recorded so that the laboratory analytical data may be correlated with the AOCs from which they came.

13.9 Sample Analyses

The samples to be collected were previously identified. Parameters to check for on soil samples will include TCLP, corrosivity, reactivity, and ignitability. The metal analytes included in the TCLP test will be cadmium, total chromium, barium, lead, arsenic, selenium, mercury, and silver.

Volatile organic and base-neutral acid extracts will also be analyzed in the TCLP test due to potential presence of these parameters in plating wastes. Corrosivity is included due to presence of acid and alkaline solutions in the electroplating shop. Reactivity is included due

NOT IGNITABLE

to past usage of cyanide. Ignitability is included due to usage of solvents, e.g., 1,1,1-trichloroethane. Analytical methods to be employed include TCLP (extraction according to 40 CFR 261; analyses according to Methods 8240 (volatile organics), 8270 (BNA), 6010 (metals), and 7470 (mercury); reactivity SW-846, Section 7.3; corrosivity (EPA Method) and ignitability (SW-846) Section 7.1.

PCBs

The laboratory selected to conduct the analyses listed above will provide detailed information concerning their Quality Control and data handling procedures, including the number and types of lab duplicates, lab blanks, detection limits, holding times, data reporting formats, etc. in accordance with SW-846.

13.10 Sampling Personnel Safety

A primary concern during hazardous sample collection is personnel safety. The use of protective clothing and equipment is required to minimize exposure to the hazard. See Section 10 on Personnel Protection for more detail on this subject. The potential presence of Cyanide residual throughout Building 64 is of particular concern. The danger presented by Cyanide is primarily due to production of extremely toxic hydrogen cyanide gas (HCN) upon contact with acid.

13.11 Quality Assurance Program

The analytical data generated from this sampling episode is extremely important to personnel health and safety and to the decontamination of Building 64. A sound Quality Assurance Program (QAP) needs to be in place to assure the quality of data generated by controlling sample collection procedures. The main tenants of a sound QAP are:

- Control over sample handling, beginning with the washing of the sample containers and sampling equipment and ending with analysis.
- Qualified sampling personnel.

- Accuracy of field measurements.
- Review and certification of data when laboratory results are obtained.

All sample handling procedures beginning with sample container cleaning procedures and ending with laboratory analysis must be carefully performed and controlled.

1. Decontamination Procedures for Sample Containers

The First Step in any field decontamination program is sample container preparation. The correct containers must be selected for the targeted analytes. These containers and container closures must be cleaned and prepared according to analytical method specific requirements.

In general, these cleaning procedures should be part of an overall laboratory quality assurance program; therefore, random testing procedures should be in place to determine the effectiveness of the lab's cleaning procedures. Clean containers should be numbered and batch QA'ed. Records should be available.

2. Decontamination Procedures for Sampling Equipment

a. Laboratory Decontamination

Perhaps the most critical aspect of the decontamination process deals with the decontamination of field sampling equipment. This is one of the aspects of environmental measurements that receives the least attention but can cause the most problems. Improperly cleaned and prepared sampling equipment can lead to misinterpretation of environmental data due to false positive and false negatives caused by cross-contamination.

In order to minimize cross-contamination, the use of laboratory cleaned and prepared sampling equipment that is dedicated for use at one sample location per day of sampling is strongly recommended. Alternatively, rinsate samples

may be used to demonstrate that sampling equipment is not a source of contamination.

Whenever possible, all field sampling equipment should be laboratory cleaned, wrapped and dedicated to a particular sampling point. Bailers for monitoring well sampling should always be cleaned and wrapped in the laboratory, whereas soil equipment may be field cleaned if laboratory cleaning is not feasible.

Samplers and sample containers should be cleaned and prepared for field use according to the following procedures:

1. Soap and tap water wash.
2. Tap water rinse.
3. 10% Nitric Acid Solution Rinse.*
4. Distilled/deionized water rinse.*
5. Acetone (pesticide grade) rinse only if sample is to be analyzed for organics.**
6. Total air dry or nitrogen blow out.**
   - * Only if sample is to be analyzed for metals.
   - ** Acetone is an acceptable cleaning solvent provided that it is allowed to totally evaporate via air drying or nitrogen blowout and is followed a distilled/deionized rinse.
7. Distilled/deionized water rinse.
   - Eliminate steps 5, 6, and 7 when samples are not analyzed for organics.

After laboratory cleaning of sampling equipment, and sample containers, the sample containers and sampling device should be sealed and the sampling device wrapped in cleaned and autoclaved aluminum foil or equivalent the custody sealed for identification. A record should be kept of the date and

time. The cleaning of equipment initiates the change-of-custody procedure for legal custody.

b. Field Decontamination

In the event that laboratory cleaning is not an option or not feasible, a field cleaning procedure must be used in order to reduce the chances of cross-contamination between sample locations. Selection of a location for a field equipment decontamination station is of utmost importance. It should be far enough away from the source of contamination so as not to adversely impact the decontamination procedure and close enough to the sampling teams to keep equipment handling to a minimum. By utilizing several of one type of sampler, decontamination teams and field teams can rotate equipment more effectively. The first step, a soap and water waste, is to remove all visible particulate matter and residual oils and grease. This may be preceded by a steam and/or high pressure water wash to facilitate residuals removal. This is followed by a tap and distilled/deionized water rinse. If the sample is not to be analyzed for metals, this step can be omitted. Next, a high purity solvent rinse is designated for trace organics removal. Acetone has been chosen because it is an excellent solvent mixable in water and is not a targeted analyte Priority pollutant Analysis. If acetone is known to be contaminant at a given site or Hazardous Substance List analysis is to be performed, another solvent may be substituted with written permission from IEPA. The solvent is allowed to evaporate; this is followed by a final distilled/deionized water rinse. This rinse removes any traces of the solvent. In general, when using field decontamination it is advisable to start sampling in the area of the site with the lowest contaminant probability and proceed through to the hottest areas. The drill rig and associated support equipment should be field decontaminated following completion of the final boring and prior to demobilization and departure from the vicinity of Building 64.

14.0 CONTAMINATED SOIL REMOVAL

As stated earlier in this document, the soils under and surrounding Building 64 are assumed "clean" unless sampling results indicate otherwise. This assumption will continue until the results of the site sampling are available. In the event that the soils are determined to be contaminated, there are a number of methods that could be adapted to the clean-up site. The chosen method or methods should be technically feasible, economical and appropriate for the RIA site. The goal of the cleanup would be to mitigate the risks to human health and the environment.

There are five essential steps to follow when selecting a method:

1) Define the objectives of the cleanup;

2) Identify the types of technologies that can achieve the objectives such as Encapsulate and Monitor or Remove and Dispose or Treat in place;

3) A) Pose alternatives; the alternatives are composed of one technology or, more often, a set of technologies, and each alternative is capable of correcting the contamination problem on the site;

   B) Evaluate the list of alternatives, and select only those that are superior based upon engineering, environmental, and economic criteria and that meet the expectations of RIA and IEPA;

4) Scrutinize each of the selected alternatives, and;

5) Record the chosen method and results of the evaluation.

When the final method has been chosen, the contractor should then describe how the method will address the following: a description of solidification/stabilization, storage or treatment of waste or reagents, equipment, removal pattern and depth increments, loading areas, and other steps which might be critical to removal.

This Closure Plan will be modified as appropriate based upon the findings of the sampling efforts and the subsequent remedial design activities.

15.0 DISPOSAL OF HAZARDOUS WASTES AND CLEANUP RESIDUES

In 1980, the Department of Defense (DOD) designated the Defense Logistics Agency as the responsible organization for the disposal of hazardous waste. The Defense Logistics Agency delegated this operation to the Defense Reutilization and Marketing Regions and 219 Defense Reutilization and Marketing Offices (DRMO). The Defense Reutilization Marketing Offices have the "field level" responsibility for accepting accountability of hazardous waste from DOD generators at their sites and for disposing of these items in an approved manner through contractors.

Waste generated during the decontamination of Building 64 may be disposed of in one or more of the three methods described below:

1. Liquid and solid hazardous wastes may be transported to the RIA RCRA permitted hazardous waste storage facility, Building 242. The waste may then be disposed of through the DRMO approved hazardous waste TSD contractor(s).

2. Liquid and solid hazardous waste may be disposed of through an approved, permitted hazardous waste TSD contractor directly from Building 64 within the allowed 90 days.

3. Liquid wastes only (such as pressure washing rinsate waste) may be treated in the permitted wastewater pretreatment facility in Building 212 or may be discharged from Building 64 to RIPOTW on a controlled batch basis after characterization sampling and prior notification of RIPOTW. No RCRA stored waste or sludge will be disposed of in this manner.

Appendix C contains PFN-174 and PFN-175 which are the Assistance to DOD Activities Disposing of Hazardous Property and the RIA Hazardous Waste Disposal Information Manual. These documents describe RIA hazardous waste disposal practices in greater detail. Appendix D contains a copy of the existing industrial pretreatment permit for Building 212 at RIA. Telephone correspondence between the RIPOTW and a representa-

tive of Rock Island Arsenal indicates either direct sewer discharge of non-hazardous rinse waters from Building 64 or the discharge of such waters following pretreatment at Building 212 is acceptable.

16.0 DISPOSAL UNIT CLOSURES

There will be no disposal units associated with this HWMU closure.

17.0 DESCRIPTION OF EQUIPMENT CLEANING

The field decontamination of heavy equipment, support materials and tools prior to leaving the exclusion zone of Building 64 is critical. Precautions must be taken to prevent cross-contamination between decontamination areas, and migration of contaminants leaving the building on equipment.

Equipment should be cleaned on-site by an approved method to remove soil and dust particles (wire brush, scraping, vacuuming, etc.) and then steam cleaned or wipe-washed with soap and water. Equipment cleaning should be done in a designated area which will not be in the vicinity of boreholes, sampling devices, or personnel.

The residues removed during equipment cleaning shall be stored in contractor-provided containers on site until an appropriate disposal method can be determined as described in Section 15.

18.0 SIGNATORY REQUIREMENTS

CLOSURE PLAN
CERTIFICATION STATEMENT

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

1618130001
USEPA ID Number

Rock Island Arsenal
Facility Name

Signature of Owner/Operator

Richard W. Bregard
Colonel, U.S. Army
Commanding
Name and Title

7 May 92
Date

19.0 CERTIFICATIONS AND REPORTS

In accordance with 35 IAC 702.126 and 725.215, the partial closure for Building 64 will be certified by both the Rock Island Arsenal (Owner/Operator) and an independent registered professional engineer. The certification will be submitted to the Agency within 60 days after completion of closure. The form presented on the following page will be utilized for closure certification.

A Closure Documentation Report will be submitted with the closure certification. The report shall include:

a. The volume of waste and waste residue removed.
b. A description of the method of waste handling and transport.
c. Waste manifest numbers or copies of manifests from removal of waste and waste residues.
d. A description of the sampling and analytical methods used.
e. A chronological summary of closure activities and the costs involved.
f. Photo documentation of closure.
g. Tests performed, methods, and results.

This statement is to be completed by both the responsible officer and by the registered professional engineer upon completion of closure. Submit four copies of this certification, including at least one copy with original signatures.

Closure Certification Statement

The hazardous waste management unit(s) at the facility described in this document has (have) been closed in accordance with the specifications in the approved closure plan. I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

If this is the closure of a unit which is subject to post-closure care requirements, the Owner/Operator hereby certifies that he has recorded the notation specified in 35 Ill. Adm. Code, Section 725.219(b)(1) as amended February 5, 1987.

USEPA ID Number	Facility Name
Signature of Owner/Operator	Name and Title
Signature of Registered P.E.	Name of Registered P.E. and Registration Number
Date	

20.0 STATUS OF FACILITY AFTER CLOSURE

The status of the RIA facility will remain unchanged after the partial closure of the Building 64 HWMU. The Facility Part A and Part B Application and Permit did not include Building 64 as an HWMU. Discussions with the Agency indicated that no Part A or Part B modifications would be required for the partial closure of Building 64. The status of the facility after this partial closure will remain as currently presented in the Facility Part B Permit.

21.0 PART A MODIFICATION AND WITHDRAWALS

No revisions will be made to the existing RIA Facility Part A Application when the partial closure of Building 64 is certified. The Facility Part A Application did not include Building 64 as an HWMU. Discussions with the Agency indicated that no Part A modification would be required for the partial closure of Building 64.

22.0 POST-CLOSURE PLAN

The Closure Plan for the HWMU at Building 64 does not require an interim status post-closure plan, in accordance with Part 725, Subpart G, because there will be no waste remaining at the HWMU. Additionally, the HWMU is not a surface impoundment landfill, land treatment unit, or waste pile.

23.0 LOCATION DOCUMENTATION FOR DISPOSAL UNITS

Section 23 is not applicable to the RIA Partial Closure Plan for the Building 64 HWMU because this was not a disposal unit.

24.0 SUBMITTAL OF CLOSURE PLAN AND CERTIFICATION

The RIA will submit four copies of the Building 64 HWMU partial Closure Plan, and any revisions, and three copies of closure certification (one with original signatures) to:

Illinois Environmental Protection Agency
Division of Land Pollution Control - #24
Permit Section
Post Office Box 19276
2200 Churchill Road
Springfield, Illinois 62794-9276

Closure certifications will not be submitted with the RIA Building 64 HWMU Closure Plan. The closure certifications will be submitted after the Closure Plans as been approved and implemented. Document certifications will be as described in Section 18, 19, and this Section.

25.0 AGENCY REVIEW OF THE RIA BUILDING 64 HWMU CLOSURE PLAN

The RIA will provide any and all additional data and supporting documentation to aid in the acceptance of the RIA partial Closure Plan for Building 64 HWMU.

26.0 CLOSURE REGULATIONS

The Illinois Administrative Code (IAC) regulations pertaining to the closure of the Building 64 HWMU is 35 IAC, Subtitle G, Part 725.

27.0 CLOSURE PLAN MODIFICATION AND TIME EXTENSIONS DURING THE CLOSURE PERIOD

Requests for modifications of the approved partial Closure Plan for Building 64 HWMU will be made in accordance with this section. The request for modification will be made at least 90 days prior to the certification due date. The time extension request will demonstrate:

a. Closure activities will, of necessity, take longer than the time period included in the approved partial Closure Plan.

b. The Owner/Operator has taken and will continue to take all steps to prevent threats to human health and the environment from the unclosed but inactive facility.

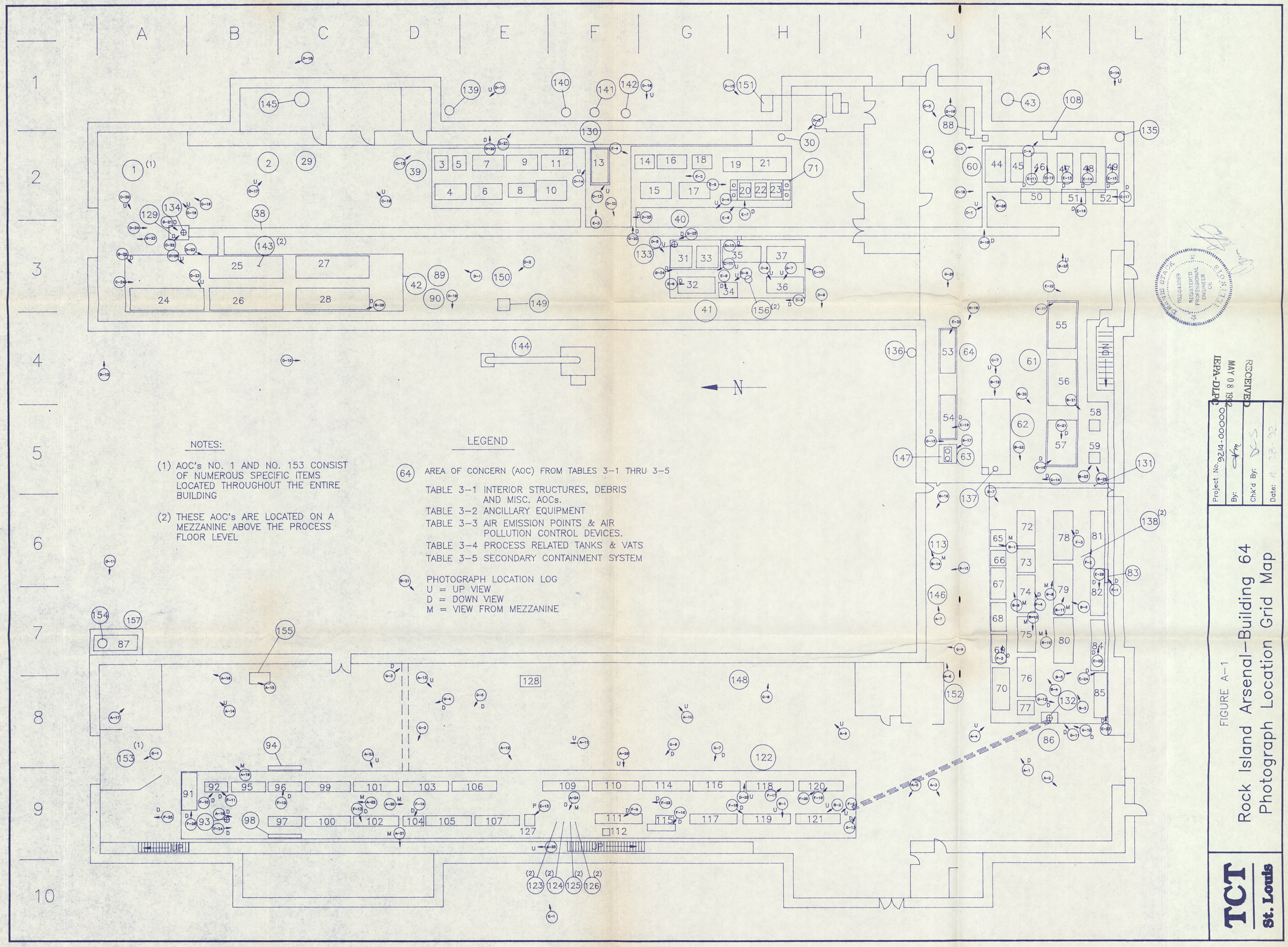
Justification of the time extension request will be provided.

28.0 AGENCY REVIEW OF CLOSURE CERTIFICATION

Following certification of closure, the Agency will conduct an inspection of the closed HWMU facility and review the certification documents to ensure that the certification meets regulatory requirements and to verify that the closure was conducted in accordance with the approved closure plan. Following Agency review of closure certification, RIA will correct any deficiencies so that the Agency can certify closure.

29.0 CERTIFICATION REGARDING POTENTIAL RELEASES FROM SOLID WASTE MANAGEMENT UNITS

The SWMU Certification for the RIA Facility has been provided to the Agency in Section L of the Part B Permit Package.



NOTES:

(1) AOC's NO. 1 AND NO. 153 CONSIST OF NUMEROUS SPECIFIC ITEMS LOCATED THROUGHOUT THE ENTIRE BUILDING

(2) THESE AOC's ARE LOCATED ON A MEZZANINE ABOVE THE PROCESS FLOOR LEVEL

LEGEND

(64) AREA OF CONCERN (AOC) FROM TABLES 3-1 THRU 3-5

TABLE 3-1 INTERIOR STRUCTURES, DEBRIS AND MISC. AOCs.
TABLE 3-2 ANCILLARY EQUIPMENT
TABLE 3-3 AIR EMISSION POINTS & AIR POLLUTION CONTROL DEVICES.
TABLE 3-4 PROCESS RELATED TANKS & VATS
TABLE 3-5 SECONDARY CONTAINMENT SYSTEM

PHOTOGRAPH LOCATION LOG
U = UP VIEW
D = DOWN VIEW
M = VIEW FROM MEZZANINE

RECEIVED
MAY 08 1992
IEPA-DLPC

Project No. 9214-00000
By:
Chk'd By:
Date: 4-28-92

FIGURE A-1
Rock Island Arsenal—Building 64
Photograph Location Grid Map

TCT
St. Louis

NOTES:

(1) AOC's NO. 1 AND NO. 153 CONSIST OF NUMEROUS SPECIFIC ITEMS LOCATED THROUGHOUT THE ENTIRE BUILDING

(2) THESE AOC's ARE LOCATED ON A MEZZANINE ABOVE THE PROCESS FLOOR LEVEL

LEGEND

(64) AREA OF CONCERN (AOC) FROM TABLES 3-1 THRU 3-5

TABLE 3-1 INTERIOR STRUCTURES, DEBRIS AND MISC. AOCs.
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TABLE 3-5 SECONDARY CONTAINMENT SYSTEM

0 15'
SCALE IN FEET
(1" = 15'-0")

DENNIS STACK 062-043589 REGISTERED PROFESSIONAL ENGINEER OF ILLINOIS

Project No. 9214-00000
By: JM
Chk'd By: DLS
Date: 4-28-92

FIGURE 3-1
Rock Island Arsenal-Building 64
AOC LOCATION MAP

TCT St. Louis

RECEIVED MAY 08 1992 IEPA-DLPC

P796496837

File

State of Illinois
ENVIRONMENTAL PROTECTION AGENCY

Mary A. Gade, Director

2200 Churchill Road, Springfield, IL 62794-9276

217/524-3300

VOLUME I OF III
File with Part B
Rec'd. 10/30/92

August 7, 1992

Commander
Rock Island Arsenal
Attn: SMCRI-CO (Dr. David Foss)
Rock Island, Illinois 61299-5000

Re: 1618130001 -- Rock Island County
Rock Island Arsenal
IL5210020 1833
Log No. C-600-M-1
Received: May 8, 1992
RCRA Closure - Building 64

Dear Dr. Foss:

The closure plan submitted by Rock Island Arsenal (RIA) and prepared by TCT-St. Louis has been reviewed by this Agency. Your partial closure plan to close the hazardous waste container (S01) storage, tank (S02) storage, and tank treatment (T01) units within Building 64 at the above referenced facility is hereby approved subject to the following conditions and modifications:

1. Closure activities must be completed by January 1, 1994. When closure is complete the owner or operator must submit to the Agency certification both by the owner or operator and by an independent registered professional engineer that the facility has been closed in accordance with the specifications in the approved closure plan. This certification must be received at this Agency within sixty (60) days after closure, or by March 1, 1994.

   The closure certification form (Attachment 1) must be used. Signatures must meet the requirements of 35 Ill. Adm. Code Section 702.126. The independent engineer should be present at all critical, major points (activities) during the closure. These might include soil sampling, soil removal, backfilling, final cover placement, etc. The frequency of inspections by the independent engineer must be sufficient to determine the adequacy of each critical activity. Financial assurance must be maintained for the units approved for closure herein until the Agency approves the facility's closure certification.

   The Illinois Professional Engineering Act (Ill. Rev. Stat., Ch. 111, par. 5101 et. seq.) requires that any person who practices professional engineering in the State of Illinois or

implies that he (she) is a professional engineer must be registered under the Illinois Professional Engineering Act (par. 5101, Sec. 1). Therefore, any certification or engineering services which are performed for a closure plan in the State of Illinois must be done by an Illinois professional engineer.

Plans and specifications, designs, drawings, reports, and other documents rendered as professional engineering services, and revisions of the above must be sealed and signed by a professional engineer in accordance with par. 5119, sec. 13.1 of the Illinois Professional Engineering Act.

As part of the closure certification, to document the closure activities at your facility, please submit a Closure Documentation Report which includes:

a. The volume of waste and waste residue removed. The term waste includes wastes resulting from decontamination activities.

b. The amount, classification (hazardous or non-hazardous), and location by AOC# of the waste which is generated.

c. A description of the method of waste handling and transport.

d. The waste manifest numbers.

e. Copies of the waste manifests.

f. A description of the sampling and analytical methods used including sample preservation methods and chain-of-custody information.

g. A chronological summary of closure activities and the cost involved.

h. Color photo documentation of closure. Document conditions before, during and after closure.

i. Tests performed, methods and results.

The original and two (2) copies of all certifications, logs, or reports which are required to be submitted to the Agency by the facility should be mailed to the following address:

Illinois Environmental Protection Agency
Division of Land Pollution Control -- #33
Permit Section
2200 Churchill Road
Post Office Box 19276
Springfield, Illinois 62794-9276

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Mary A. Gade, Director

2200 Churchill Road, Springfield, IL 62794-9276

2. If the Agency determines that implementation of this closure plan fails to satisfy the requirements of 35 I.A.C. 725.211, the Agency reserves the right to amend the closure plan. Revisions of the closure plan are subject to the provisions of Section 40 of the Illinois Environmental Protection Act.

3. The facility must continue to meet the applicable requirements of 35 IAC - Subtitle G for those units not approved for closure herein, i.e., the container storage areas (S01) of Buildings 33 and 242.

4. RIA shall submit quarterly reports to the Agency which detail the progress that has been made (towards completing closure of Building 64) since the submittal of the previous report. The first quarterly report shall be submitted to the Agency by November 15, 1992. In addition, RIA shall notify the Agency in writing 15 days prior to implementation of the initial decontamination activities at Building 64. The Agency shall be notified in writing within 5 days of completing the decontamination of Building 64.

5. All waste generated as a result of closure activities must be handled as hazardous waste until it is determined (in accordance with 35 IAC 722.111) to be otherwise. Page 11-2 indicates that certain waste will be pulverized to reduce its volume prior to off-site disposal. Pulverization of hazardous waste would be considered to be treatment of hazardous waste and could not be done with out appropriate treatment permits.

6. The sampling plan described in this closure plan must be re-evaluated prior to its implementation, due to the fact that (1) the sampling plan will not be implemented until late 1993 or early 1994 and (2) additional information related to the need for soil sampling will be obtained during closure activities carried out prior to this date. Therefore, a revised soil sampling plan which takes this additional information into account must be submitted to the Agency by December 1, 1993. This modification must include the following:

   a. identification of the soil sampling locations identified following decontamination of Building 64;

   b. An accurate scale drawing showing the location of the proposed sample locations, relative to the regulated unit;

   c. The depth and interval of the proposed samples;

   d. A description of the soil sampling procedures and sample preservation/chain of custody methods;

   e. The test methods to be used and detection limits to be achieved;

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f. A description of the field screening techniques which will be used, if any, and a discussion of the limitations of the proposed techniques.

7. The secondary containment pit (SCP) identified as AOC# 131 is connected via two (2) underground cast iron pipes to the SCP identified as AOC# 122. RIA must identify how these pipes will be/have been evaluated to determine if they have released contaminants to the surrounding soils. This information must be included in the soil sampling proposal identified in Condition 6 above.

8. RIA states on page 13-3 of the closure plan, " One soil/sediment sample from the cyanide destruct unit discharge sump will be collected by a stainless steel spoon. The soil samples will be placed into a clean stainless steel pan, mixed, and placed into appropriate sample containers. The samples for volatile organics will be collected first prior to mixing and will be taken in accordance with Attachment 7 of the IEPA Instructions for the Preparation of Closure Plans." This statement seem to suggest that samples will be composited for analysis and that the VOC sample will be collected from the mixing pan prior to mixing. Composited samples are <u>not</u> acceptable. In addition, samples which will analyzed for VOCs must be obtained from the media being sampled prior to removal of from that media, i.e., a shelby or similar device must be driven into the media and removed -- the sample cannot be removed from the sample tube in the field (see item B2 of the Soil Volatile Sampling Procedure). Clarification of this soil sampling procedure must be provided in the closure plan modification required in Condition 6 above.

9. If contamination is detected, the Agency must be notified in writing within 15 days. A revised plan addressing remediation of the contamination detected must be submitted within timeframes established by the Agency.

10. The tank surfaces, ancillary equipment and the concrete surfaces including the secondary containment systems, and sumps shall be visually inspected, photographed (if they have not been photographed to date) and any residue adhering to the surface must be removed by scraping, brushing, etc. Following this, the surfaces and the tanks' associated piping and equipment must be steam cleaned and triple rinsed. All wash and rinse water shall be collected. If analysis of the wash or rinse water samples detect the presence of F001 constituents above the constituent's PQL identified in SW-846 (Third Edition), then that material must be managed as a hazardous waste. If the wash or rinse water samples exhibit a characteristic of hazardous waste then that material must be managed as a hazardous waste. In any event the material must be managed as a special waste.

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11. After cleaning the concrete surfaces as identified in Condition 10 above, an independent registered professional engineer shall inspect the integrity of the concrete surfaces. These surfaces shall be inspected for cracks or deterioration which penetrate through the concrete. In addition, all construction joints must be inspected to ensure that they are water tight. The results of this inspection shall be (1) submitted in the form of a report, (2) submitted to the Agency along with the information identified in Condition 6 above, and (3) certified in accordance with 35 Ill. Adm. Code 702.126 by the engineer. The reports must include (1) the results of the inspection, (2) conclusions reached regarding any cracks or construction joints observed in the areas of concern, (3) justification of the conclusions reached (e.g. information must be provided which indicates that any construction joints in the areas of concern are indeed water tight), and (4) photographs to support the conclusions reached.

12. If clean closure cannot be achieved pursuant to 35 IAC 725.297(a), then a modified closure plan and a post-closure plan prepared pursuant to 35 IAC Section 725.297(b) must be submitted to the Agency for review and approval within 60 days of such a determination.

13. Under the provisions of 29 CFR 1910 (51 FR 15,654, December 19, 1986), cleanup operations must meet the applicable requirements of OSHA's Hazardous Waste Operations and Emergency Response standard. These requirements include hazard communication, medical surveillance, health and safety programs, air monitoring, decontamination and training. General site workers engaged in activities that expose or potentially expose them to hazardous substances must receive a minimum of 40 hours of safety and health training off site plus a minimum of three days of actual field experience under the direct supervision of a trained experienced supervisor. Managers and supervisors at the cleanup site must have at least an additional eight hours of specialized training on managing hazardous waste operations.

14. 35 IAC 721.31 F001 through F005 wastes must be disposed in accordance with 35 IAC Part 728.

15. To avoid creating another regulated storage unit during closure, it is recommended that you obtain any necessary permits for waste disposal prior to initiating excavation activities. If it is necessary to store excavated hazardous waste on-site prior to off-site disposal, do so only in containers or tanks for less than ninety (90) days. Do not create regulated waste pile units by storing the excavated hazardous waste in piles. The ninety (90) day accumulation time exemption (35 IAC 722.134) only applies to containers and tanks.

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State of Illinois
ENVIRONMENTAL PROTECTION AGENCY

Mary A. Gade, Director

2200 Churchill Road, Springfield, IL 62794-9276

16. Please be advised that the requirements of the Responsible Property Transfer Act (Public Act 85-1228) may apply to your facility due to the management of RCRA hazardous waste. In addition, please be advised that if you store or treat on-site generated hazardous waste in containers or tanks pursuant to 35 IAC 722.134, those units are subject to the closure requirements identified in 35 IAC 722.134(a)(1).

17. All hazardous wastes that result from this project are subject to annual reporting as required in 35 IAC 722.141 and shall be reported to the Agency by March 1 of the following year for wastes treated and left on-site or shipped off-site for storage, treatment and/or disposal during any calendar year. Additional information and appropriate report forms may be obtained from the Agency by contacting:

    Facility Reporting Unit
    Division of Land Pollution Control
    Illinois Environmental Protection Agency
    P.O. Box 19276
    Springfield, Illinois 62794-9276

Should you have any questions regarding this matter, please contact Kevin D. Lesko at 217/524-3300.

Very truly yours,

Lawrence W. Eastep, P.E., Manager
Permit Section
Division of Land Pollution Control

LWE:KDL
JKM

Attachments: 1. Closure Certification Statement

cc: USEPA Region V -- George Hamper

bcc: Division File
Peoria Region
RPMS
Jim Moore
Jerry Kuhn
Kevin Lesko

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State of Illinois
ENVIRONMENTAL PROTECTION AGENCY

Mary A. Gade, Director

2200 Churchill Road, Springfield, IL 62794-9276

ATTACHMENT 1

This statement is to be completed by both the responsible officer and by the registered professional engineer upon completion of closure. Submit one copy of the certification with original signatures and three additional copies.

Closure Certification Statement

Closure Log C-600

The hazardous waste management container storage unit (S01), tank storage units (S02), and tank treatment units (T01) at the facility described in this document have been closed in accordance with the specifications in the approved closure plan. I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

USEPA ID Number	Facility Name
Signature of Owner/Operator	Name and Title
Signature of Registered P.E.	Name of Registered P.E. and Illinois Registration Number

Date

C-600-M-1

1618130001-
ROCK IS. ARSENAL

STATE OF ILLINOIS
ENVIRONMENTAL PROTECTION AGENCY

IL 532-0357
ADM 39
054-002

ILS210022183:
RCRA CLOSURE

Subject ROCK IS. ARSENAL
Data C-600-M-1
Reviewed by KEVIN D. LESICO Date

INDEX TO
CLOSURE C-600-M-1

VOLUME

I. - CLOSURE APPROVAL LETTER
- REVIEW NOTES

Ia. - CLOSURE PLAN

II - CLOSURE PLAN-APPENDICES A-F

III - CLOSURE PLAN - ATTACHMENT A

ALSO SEE MAP/DRAWING SHEETS

CLOSURE LOG # : 600-Pr-1
FACILITY : ROCK ISLAND ARSENAL
STATE ID # : 1618130001
FED ID # : IL5210021833
STATUS : P
TYPE : P
NOTIFY RPMS : N

LOCATION : ROCK ISLAND
COUNTY : ROCK ISLAND
REVIEWER : RI
NOTIFY FOS : Y
NOTIFY CHS : Y
PN :
INSP :

1st-RECD : 92/05/08
90-DUE : 92/08/07
1-MAILED : 92/08/07
APP or REJ : APP

2nd-SCHED :
2nd-RECD :
60-DUE :
2-MAILED :

CERTIFICATION DUE : 94/03/01
CLOSED :
UNITS CLOSED : S01,S02,T01
UNITS REMAIN : S01
G OR T STATUS: T
COMMENTS :

CERTIFICATION RECD :
CLEAN CLOSURE :
CIL SENT :
PECL SENT :

CONTAM SOIL-Y/N/?: ? ABOVE PQL-Y/N/?: ABOVE CUO-Y/N/?:
CONTAM-VO/SVO/M/?:
CONTAM GW-Y/N/?: ? ABOVE PQL-Y/N/?: ABOVE CUO-Y/N/?:
CONTAM-VO/SVO/M/?:

REMEDIATION-PROP/IN PROG/COMPLETE/NA: NA VOLUME: UNIT-Y/CY:

SOIL VENT-Y/N: AERATE-Y/N/ON/OFF: STABILIZE-Y/N/ON/OFF:
CAP IN PLACE-Y/N: BIOREM-Y/N: INCIN-Y/N/ON/OFF:
LANDFILL-Y/N/ON/OFF: TREATMENT-Y/N/ON/OFF: PUMP & TREAT GW-Y/N:

PROCESS 1: S01	AMOUNT 1: 495	UNIT1: G	ADD/DEL: DEL
PROCESS 2: S02	AMOUNT 2: ?	UNIT2: ?	ADD/DEL: DEL
PROCESS 3: T01	AMOUNT 3: ?	UNIT3: ?	ADD/DEL: DEL
PROCESS 4: S01	AMOUNT 4: 27,000	UNIT4: G	ADD/DEL:
PROCESS 5:	AMOUNT 5:	UNIT5:	ADD/DEL:
PROCESS 6:	AMOUNT 6:	UNIT6:	ADD/DEL:

1) COMPLETE CLOSURE CHECKLIST
2) CALL FOS & MAKE SURE THESE ARE CORRECT AREAS TO CLOSE
3) STORAGE AREA INTEGRITY (CRACKS, GAPS, JOINTS, CURBS, ETC.)
4) STORAGE AREA RUNOFF/DRAINAGE
5) SAMPLING PARAMETERS W.R.T. WASTES MANAGED
6) SAMPLING METHODS AND LOCATIONS AND DEPTHS
7) ANALYTICAL METHODS (SW-846)
8) REVIEW NOTES
   a. Intro to Project -- Site name, location, brief description of submittal
   b. Pertinent Site History
   c. Summary/Review/Evaluation of Submittal
   d. Identification of Final Action to be taken
   e. Discussion of Final Action, Including Discussion of Final Letter
9) COMPUTER BLANKS

due 6/8/92 ~~B White~~

KL

CLOSURE LOG # : 600-M-1
FACILITY : ROCK ISLAND ARSENAL
STATE ID # : 1618130001
FED ID # : IL5210021833
STATUS : A
TYPE : P
NOTIFY RPMS : N

LOCATION : ROCK ISLAND
COUNTY : ROCK ISLAND
REVIEWER : KL
NOTIFY FOS : Y
NOTIFY CMS : Y
PN :
INSP :

1st-RECD : 92/05/08
90-DUE : 92/08/07
1-MAILED :
APP or REJ : App

2nd-SCHED :
2nd-RECD :
60-DUE :
2-MAILED :

CERTIFICATION DUE : MARCH 1, 1994
CLOSED : ~~[illegible]~~
UNITS CLOSED : S01, S02, T01
UNITS REMAIN : S01
G OR T STATUS: T
COMMENTS :

CERTIFICATION RECD :
CLEAN CLOSURE :
CIL SENT :
PECL SENT :

CONTAM SOIL-Y/N/? ABOVE PGL-Y/N/?: ABOVE CUO-Y/N/?:
CONTAM-VO/SVO/M/?:
CONTAM GW-Y/N/? ABOVE PGL-Y/N/?: ABOVE CUO-Y/N/?:
CONTAM-VO/SVO/M/?:

REMEDIATION-PROP/IN PROG/COMPLETE/NA: VOLUME: UNIT-T/CY:

SOIL VENT-Y/N: AERATE-Y/N/ON/OFF: STABILIZE-Y/N/ON/OFF:
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DFILL-Y/N/ON/OFF: TREATMENT-Y/N/ON/OFF: PUMP & TREAT GW-Y/N:

PROCESS 1: S01	AMOUNT 1: 495	UNIT1: G	ADD/DEL: DEL
PROCESS 2: S02	AMOUNT 2: ?	UNIT2: ?	ADD/DEL: DEL
PROCESS 3: T01	AMOUNT 3: ?	UNIT3: ?	ADD/DEL: DEL
PROCESS 4: S01	AMOUNT 4: 27,000	UNIT4: G	ADD/DEL:
PROCESS 5:	AMOUNT 5:	UNIT5:	ADD/DEL:
PROCESS 6:	AMOUNT 6:	UNIT6:	ADD/DEL:

1) COMPLETE CLOSURE CHECKLIST
2) CALL FOS & MAKE SURE THESE ARE CORRECT AREAS TO CLOSE
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   e. Discussion of Final Action, including Discussion of Final Letter
COMPUTER BLANKS

COMPLIANCE UNIT EVALUATION

THERE ARE NO OUTSTANDING RCRA VIOLATIONS. ✓

THERE ARE NO OUTSTANDING SOLID WASTE VIOLATIONS ON THE COMPLIANCE UNIT'S TRACKING SYSTEM.* ✓

OUTSTANDING RCRA VIOLATIONS. ____

OUTSTANDING SOLID WASTE VIOLATIONS.* ____

VIOLATION	EVALUATION DATE	REVIEWER	CIL DATE	PECL DATE	AWN DATE	EDG DATE

CURC'S INITIALS JDM

DATE 5-27

COMMENTS:

*THE COMPLIANCE UNIT HAS BEEN TRACKING SOLID WASTE VIOLATIONS SINCE MARCH 1, 1991. PLEASE CONTACT FOS FOR SOLID WASTE VIOLATIONS PRIOR TO THIS DATE.

C-354

VOLUME I OF II

STATE OF ILLINOIS
ENVIRONMENTAL PROTECTION AGENCY

IL 532-0357
ADM 39
054-002

Subject ROCK ISLAND ARSENAL - ~~PART B #122~~

Data CLOSURE PLAN REVIEW

Reviewed by KEVIN D. LESKO Date 5-17-90

FILE REVIEW

PART A:

11/17/80 → S01 - 200 Y
T01 - 43000 U

WASTE → F001 THRU F012
K061 AND K062
↳(S01) ↳(T01)

7/15/83 → REQUEST T04 AND T01 UNITS REMOVE FROM PART A BECAUSE THEY ARE W.W.T. UNITS.

D003 AND D007 WASTE ADDED

RCRA CLOSURE:

2/7/85 CLOSURE PLAN SUBMITTED FOR BLDG. 242 TO BE KEPT ON FILE. UNIT DIDNOT GO THRU CLOSURE

7/30/90 CLOSURE PLAN SUBMITTED FOR BLDG. 33. ~~[illegible]~~ PLAN APPROVED 10/26/91.. AREA WAS A SATALITE ACCUMULATION AREA THAT STORED WASTE FOR >90DAYS. SEE C-~~[illegible]~~55. CLOSURE IS STILL ONGOING.

C-554

STATE OF ILLINOIS
ENVIRONMENTAL PROTECTION AGENCY

IL 532-0357
ADM 39
054-002

Subject RIA - PART B
Data CLOSURE PLAN REVIEW
Reviewed by KDL Date

— FILE REVIEW (CONT.) —

F.O.S.:

9/24/82 → WASTE FROM DEGREASING SOLVENTS, LAQUER, AND CHROME PLATING WASTE. IN BLDG 424

8/4, 5 AND 6/87 → MULTI-MEDIA INSPECTION

~30 DRUMS OF UNKNOWN WASTE STORED ~~NEXT TO BLDG~~. FOR GREATER THAN 90 DAY AND APPEARED TO BE LEAKING IN CONTRACTORS STORAGE AREA. ADJACENT TO BLDG. 242

?

SATELLITE ACCUMULATION AREAS:

RCRA CLOSURE NEEDED ?

- BLDG. 208 - HAZ WASTE STORED FOR GREATER THAN 90 DAYS (3 BARRELS) NEED TO GO THRU RCRA CLOSURE
- BLDG 112 - 2 BARRELS OF HAZARDOUS WASTE STORED GREATER THAN 90 DAYS NEEDS TO GO THRU RCRA CLOSURE

MANIFEST DESCREPANCIES OBSERVED

STATE OF ILLINOIS
ENVIRONMENTAL PROTECTION AGENCY

IL 532-0357
ADM 39
054-002

Subject RIA - PART B

Data CLOSURE PLAN REVIEW

Reviewed by KDL Date

— FILE REVIEW (CONT.) —

F.O.S. (CONT)

2/20/90 AND 3/27/90 INSPECTION

SATALITE ACCUMULATION AREAS:

- BLDG 112 (MOP SHOP) → 1 DRUM (F001) TCE AND WASTE PAINT/SOLVENT (D001)?

BLDG. 208 (PRODUCTION PAINT SHOP) TCE (F001) NAPTHA (D001)

BLDG 212-P (INDUSTRIAL W.W.T. FACILITY) (F006)

BLDG 212-F (FOUNDRY) FURNACE DUST (D006), (D007) (D008)

BLDG 220-4 (MACHINE SHOP 4TH FLOOR) OFF-SPEC. SOLVENTS AND OIL CONTAMINATED SOLVENTS

BLDG. 220-3 (MACHINE SHOP 3RD FLOOR) SAME WASTE AS BLDG. 220-4

BLDG. 220-2 SAME AS 220-4

BLDG. 220-1 (MACHINE SHOP 1ST FLOOR) NAPTHA (D001)

BLDG. 220-OH (OIL HOUSE) MACHINE OIL (D001)

BLDG. 220-B (MACHINE SHOP BASEMENT) TCEA (F001)

BLDG 220-M (MACHINE SHOP MEZZANINE) NAPTH (D001) NAPTHA AND TCEA (F001)

C-337

STATE OF ILLINOIS
ENVIRONMENTAL PROTECTION AGENCY

IL 532-0357
ADM 39
054-002

Subject RIA - PART B
Data CLOSURE PLAN REVIEW
Reviewed by KDL Date

— FILE REVIEW — (CONT.)

FOS (CONT.)

SATELLITE ACCUMULATION AREA (CONT):

- BLDG 220-S (STEEL ROOM) FOR SPILLED MATLS. AND OFF-SPEC
- BLDG 220-XR (X-RAY ROOM) NAPTHA (D001)
- BLDG 222 (HEAT TREAT) OILS (D001)
- BLDG 212-W (WELDING) TCEA STILL BOTTOMS (F001)
- BLDG. 208-B(a) (RECOIL ROOM) (D001) OIL
- BLDG. 208 B(b) (RECOIL ROOM) (D001) OIL
- RCRA CLOSURE NEEDED → BLDG. 299 (CARE AND PRESERVATION) 1,1,1 TCE (F001)
  WASTE PAINT (D007, D008, F001)
  >90 DAY STORAGE
- BLDG. 89 (NON PRODUCTION PAINT SHOP) (SOLVENTS AND PAINT MAT.
- BLDG. 102 (SPECIALTY MACHINE SHOP) (D001) NAPTHA
- BLDG. 159 (GARAGE) TCE (F001)
- RCRA CLOSURE NEEDED → AREA 33 (FIRING RANGE) TCE (F001)
- BLDG. 25 (TEST RANGE) (D008) RANGE DUST
- BLDG. 108 (PRINT SHOP) (F001) BLANKROLA, (D003) ELECTROSTATIC
- BLDG 337 (QUALITY CONTROL) (F001) TCEA

STATE OF ILLINOIS
ENVIRONMENTAL PROTECTION AGENCY

IL 532-0357
ADM 39
054-002

Subject RIA -
Data CLOSURE PLAN REVIEW
Reviewed by KDL Date

— FILE REVIE (CONT.) —

THE FOLLOWING UNITS HAVE BEEN IDENTIFIED IN THE F.O.S. FILE AS NEEDING TO GO THUR RCRA CLOSURE OR BE INCLUDED IN THE PART A AND PART B APPLICATION:

1. OUTSIDE AREA ADJACENT TO BLDG. 242 THAT AT ONE TIME HELD APPROXIMATLY 30 DRUMS OF UNKNOWN WASTE. IF WASTE WAS HAZARDOUS AREA NEEDS TO BE CLOSED IN ACCORDANCE WITH 35 IAC PART 725.

2. BLDG 208 - SATALLITE ACCUMULATION AREA STORED WASTE FOR GREATER THAN 90 DAYS

3. BLDG. 112 - SATALLITE ACCUMULATION GREATER THAN 90 DAYS

4. BLDG. 299 - SATALLITE ACCUMULATION GREATER THAN 90 DAYS

5. AREA 33 - SATALLITE ACCUMULATION GREATER THAN 90 DAYS
   SEE C-554

2/21/91 FOS INSPECTION CONTAINS PICTURES OF BLDG. 64 ~~FAC~~ BLDG. 64 HAD 6 PLATING TANKS WITH PLATING SOLUTIONS IN THEM. TWO TANK WERE BEING USED TO TREAT THE PLATING SOLUTIONS BY "BOILING THE WASTE DOWN." THE DISTALLATE WAS BEING COLLECTED BY AIR POLLUTION CONTROLL DEVICES. THE LIQUID DISTALLATE WAS THEN TREATED IN THE BLDG. 65 WASTE WATER TREATMENT PLANT. THE SLUDGE FROM THIS UNPERMITTED TREATMENT WAS THEN STORED IN 4 OTHER TANKS. THEIR WERE 100 DRUMS OF CHROME PLATING SOLUTION (SPECULTIVE ACCUMULATION).

LPC REFERENCE SHEET (SAME FACILITY)

Facility Number: 1618130001 County: ROCK ISLAND

Facility Name: ROCK ISLAND ARSENAL

USEPA Number: IL5210021833

File Category: RCRA CLOSURE C-600-M-1

FOR ADDITIONAL INFORMATION SEE FILE CATEGORY: MAPS

Date	Brief Description of Documents
MAY 8, 1992	DRAWINGS OF BLDG. 64

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IL 532-0357
ADM 39
054-002

Subject ROCK ISLAND ARSENAL
Data CLOSURE PLAN BLDG. 64 C-600-M-1
Reviewed by KEVIN D. LESKO Date 7/27/92

ROCK ISLAND ARSENAL (RIA) SUBMITTED THIS REVISED CLOSURE PLAN IN RESPONSE TO THE AGENCY'S DISAPPROVAL LETTER DATED 12/27/91. THE INITIAL CLOSURE PLAN WAS SUBMITTED ON 9/30/91.

RIA IS ALSO IN THE PROCESS OF CLOSING A CONTAINER (SOD) STORAGE AREA AT BLDG. 33. THE CLOSURE OF BLDG. 33 IS BEING HANDLED SEPARATELY UNDER LOG # C-554.

SUMMARY OF REASONS FOR DENIAL OF INITIAL CLOSURE PLAN (SEE AGENCY'S 12/27/91 DISAPPROVAL LETTER FOR MORE SPECIFIC INFORMATION):

1. RIA FAILED TO IDENTIFY THE SPECIFIC HAZARDOUS WASTE MANAGEMENT UNITS (HWMU) WITHIN BLDG. 64. A DESCRIPTION OF HOW WASTE WAS MANAGED WAS NOT PROVIDED.

2. DETAILED DRAWINGS OF THE PRESENT CONFIGURATION OF THE HWMUs WERE NOT PROVIDED.

3. A DESCRIPTION OF THE SECONDARY CONTAINMENT AND PAVEMENT SURFACES (i.e., ADEQUACY, CRACKS PRESENT, JOINTS, DETERIORATION, ECT.) WAS NOT PROVIDED.

4. THE WASTES THAT WERE MANAGED IN THE HWMUs WERE NOT IDENTIFIED.

5. A DETAILED DESCRIPTION OF THE PROCEDURES TO BE USED TO DECONTAMINATE TANKS, PIPING, SECONDARY CONTAINMENT AREAS, STRUCTURES, ECT. WAS NOT PROVIDED.

Subject: _____

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Reviewed by KDC Date _____

6. THE PROPOSED SAMPLING PLAN FAILED TO:

- DESCRIBE HOW WASTE GENERATED DURING THE CLOSURE WILL BE CHARACTERIZED AS ~~HAZ~~ HAZARDOUS OR NON-HAZARDOUS

- ~~FAILED~~ PROVIDE SAMPLING PLANS 1, 2, AND 3 WHICH WERE REFERENCED IN THE PLAN,

7. A DESCRIPTION OF HOW EQUIPMENT USED DURING CLOSURE WILL BE DECONTAMINATED WAS NOT PROVIDED.

8. WASTE MUST BE HANDLED AS HAZARDOUS UNTIL SHOWN TO BE OTHERWISE

9. ADEQUACY OF GROUNDWATER MONITORING WILL NOT BE EVALUATED UNTIL IT HAS BEEN DETERMINED THAT GROUNDWATER HAS BEEN IMPACTED BY BLDG. 64.

10. SOIL REMOVAL PLAN WILL NOT BE EVALUATED UNTIL IT IS DETERMINED TO BE ~~NEC~~ NECESSARY.

11. THE INTENDED USE OF THE FACILITY FOLLOWING CLOSURE WAS NOT IDENTIFIED

12. THE PROPOSED ~~CLEAN~~ CLEANUP OBJECTIVES WILL NOT BE EVALUATED UNTIL THE INITIAL SOIL SAMPLING HAS BEEN COMPLETED.

13. RIA FAILED TO PROVIDE AN ADEQUATE SCHEDUAL FOR COMPLETION OF CLOSURE.

14. ADEQUATE CERTIFICATION OF THE CLOSURE PLAN WAS NOT PROVIDED.

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— CLOSURE PLAN REVIEW NOTES —

SECTION

1.0 NO COMMENT.

2.0 - 2.025 NO COMMENT.

2.3.2 BLDG. 64 WAS OPERATED AS A CADMIUM, COPPER, CHROMIUM, LEAD, NICKEL, AND ZINC PLATING, AS WELL AS PHOSPHATING, BLACK OXIDE PROCESSING, ANODIZING, AND ACID PICKLING. THE USE OF CYANIDE WAS ELIMINATED FROM THE OPERATIONS AT BLDG. 64 BY ABOUT 1980.

3.0 RIA DEFINES THE HWMU AS THE INTERNAL STRUCTURE AND CONTENTS OF BLDG. 64.

TABLES 3-1 THRU 3.5 AND FIGURE 3-1 IDENTIFY "AREAS OF CONCERN" (AOCs) WITHIN BLDG. 64

3.2.1 RIA HAS DIVIDED THE WASTE WITHIN BLDG. 64 INTO 4 CATEGORIES:

I - INTERIOR STRUCTURE/DEBRIS/MISC. AOCs.

II - ANCILLARY EQUIPMENT

III - AIR EMISSIONS POINTS AND AIR POLLUTION CONTROL DEVICES

IV - PROCESS RELATED TANKS AND VATS

V - SECONDARY CONTAINMENT

Subject: _____

Data C-600-M-1

Reviewed by KDL Date _____

3.2.1 (CONT.) RIA INDICATES THAT THE AOC # WILL BE USED TO TRACK ACTIVITIES CONDUCTED IN EACH AREA.

3.2.2 CATEGORY I WASTE INCLUDES NUMEROUS ARTICLE OF LOOSE DEBRIS, ~~AS~~ ASBESTOS-CONTAINING MATERIAL (ACM), AND NON-PROCESS EQUIPMENT THROUGH OUT BLDG. 64.

3.2.3 CATEGORY II WASTE INCLUDES ANCILARY EQUIPMENT AND APPURTENANCES, SUCH AS HEATING AND VENTILATION EQUIPMENT AND PLATING PROCESS SUPPORT EQUIPMENT AND PIPING

3.2.4 CATEGORYES III, IV, AND V WASTE. CATEGORY III INCLUDES AIR EXHAUST AND AIR POLLUTION CONTROLL SYST THROUGHOUT BLDG. 64. THESE CATEGORY III ITEMS ARE IDENTIFIED IN TABLE 3-3 AND FIGURE 3-1.

CATEGORY IV WASTE INCLUDE ALL PROCESS TANKS AND/OR VATS AS LISTED IN TABLE 3-4, FIGURE 3-1.

CATEGORY V WASTE INCLUDE [redacted] SECONDARY CONTAINMENT PITS AND THEIR APPURTENANCES (SEE TABLE 3-5, FIGURE 3-1).

90-95% OF THE ~~CHEMICAL~~ CHROMIUM SOLUTIONS IN AOCs 31-33, 36-37, 55, 57, 67 73, 74, 80, 95, 97, 101, 103, 106, 109-111, 114, 116, 118 AND 120 (COMBINED CAPACITY OF 34500 GALLONS) WERE TRANSFERED TO THE NEW PLATTING FACILITY (BLDG. 212). THE REMAINING 5 TO 10% OF SOLUTIONS FROM THE ABOVE AOCs WAS TRANSFERED TO AOCs 55 AND/OR 57 (CAPACITY 4,400 GALLONS) FOR TREATMENT. SEVERAL ~~THE~~ THOUSAND GALLONS OF CHROMIUM SOLUTION MAY HAVE BEEN TREATED THIS WAY.

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(APPROXIMATELY 1500 GALLONS)

3.2.4 (CONT.) THE CADMIUM PLATING SOLUTIONS IN AOC TANKS 17, 20, 21, AND 23 WERE TRANSFERED TO BLDG 212 FOR REUSE.

TREATMENT IN AOCs 55 AND 57 CONSISTED OF BOILING THE SOLUTIONS TO REDUCE THEIR VOLUME. SPILLAGE IN THIS AREA WOULD HAVE BEEN COLLECTED THE SECONDARY CONTAINMENT AREA AOC 67.

72 DRUMS OF USED BLACK CHROME SOLUTION (CONTAINING ACETIC ACID) AND 34 DRUMS OF CHROMIUM SOLUTION WERE FILLED BETWEEN 1/23/90 AND 5/21/90. SOME DRUMS WERE TREATED SOLUTION AND SOME TRANSFERED DIRECTLY FROM THE ORIGINAL TANKS.

THE DRUMS CONTAINING CHROMIUM SOLUTION WERE STORED JUST TO THE WEST OF AOC 128. 7 OF THE 106 DRUMS LEAKED DUE TO FREZZING DURING THE WINTER OF 1990 - 1991. SPILLED MATERIAL COLLECTED USING OIL DRY. CRACKS, DETERIORATION, AND FLOOR JOINTS WERE NOTED NEAR THE AREA OF THE SPILLAGE.

⟹ SOIL SAMPLE FROM BENEATH THIS AREA WILL BE REQUIRED.

CONTENTS OF THE COPPER, NICKEL, ACID AND ALKALINE SOLUTIONS, RINSE TANKS AND OTHER MISCELLANEOUS LIQUID WASTE WERE SELECTIVELY COMBINED IN AOCs 55 AND 57 FOR TREATMENT. AOC 56 WASE ALSO USED TO HOLD WASTE PRIOR TO TREATMENT. FOLLOWING TREATMENT THE LIQUID WAS STORED IN AOCs 24-28.

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4.0 RIA IS LOCATED IN SECTION 30, T18N, R1W ROCK ISLAND COUNTY, ROCK ISLAND.

5.0 THE EXISTING CONFIGURATION OF BLDG. 64 IS SHOWN ON FIGURE 3-1. THE LOCATION AND SIZE OF ALL VATS AND SECONDARY CONTAINMENT AREAS IS IDENTIFIED IN TABLES 3-4 AND 3-5

AOC#131, "IN-PROCESS WASTE STORAGE AREA SECONDARY CONTAINMENT" APPEARS TO BE CONECTECTED TO AOC # 122, "SECONDAY CONTAINMENT PIT" VIA UNDERGROUND PIPING. THE SUMP FOR AOC # 131 IS IDENTIFIED AS AOC # 132, TABLE 3-5, PAGE 3-25 INDICATES THAT IT IS CONSTRUCTED OF PVC CONNECTED TO CAST IRON PIPING. PHOTOS G-10 AND G-13 APPEAR TO SHOW THE UNDERGROUND SECTION OF PIPING AS CAST IRON. (SEE ATTACHMENT A)

⟹ RIA SHOULD CLEARLY IDENTIFY THE CONSTRUCTION OF THESE PIPES AND INDICATE HOW THE WILL BE ~~APPRAISE~~ ASSESSED TO DETERMINE IF THEIR HAVE BEEN RELEASES TO THE SURROUNDING SOILS THROUGH THEM.

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6.0 THE FLOOR AND SECONDARY CONTAINMENT PITS OF BLDG. 64 ARE CONSTRUCTED OF 8 INCH REINFORCED CONCRETE. RIA STATES THAT THE SECONDARY CONTAINMENT PITS (SCP) WERE USED FOR CONTAINMENT OF SPILLAGE, PROCESS DRAGOUT, PROCESS WASTEWATER DISCHARGE TO THE SANITARY SEWER.

→ FROM THIS DISCRIPTION IT IS CLEAR THAT THE "SECONDARY CONTAINMENT PITS WERE NOT OPERATED AS TRUE SECONDARY CONTAINMENT PITS, I.E., ONLY FOR THE COLLECTION OF ACCIDENTAL SPILLS. IN ADDITION, TABLE 3-5 INDICATES THE PRESENCE OF VARYING QUANTIES OF SLUDGE AND LIQUID WASTE BEING PRESENT IN THE SCP, I.E., STORAGE OF WASTE.

RIA STATES THAT THE STRUCTURAL INTEGRITY OF THE FLOOR AND THE SCP CANNOT BE DETERMINED AT THIS TIME DUE TO THE PRESENCE OF DIRT, DUST, DEBRIS, AND EQUIPMENT WHICH INHIBIT INSPECTION. AFTER THE EQUIPMENT HAS BEEN REMOVED AND THE STRUCTURE HAS BEEN DECONTAMINATED, A THOROUGH INSPECTION OF THE EXSISTING FLOOR STRUCTURE WILL BE COMPLETED.

→ THIS APPEARS TO BE ACCEPTABLE. RIA MUST SUBMIT A REPORT REGARDING THE INTEGRITY OF THE FLOOR AND SPA AND ADDRESSING SOIL SAMPLING, IF NECESSARY, AT APPROPRIATE LOCATIONS BASED UPON THE INSPECTION OF THE STRUCTURE.

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7.0 TABLE 7.1 IDENTIFYS THE HAZARDOUS WASTE GENERATED, TREATED, STORED, AND/OR DISPOSED OF AT BLDG. 64. TABLE 7.1 IDENTIFIES THE FOLLOWING WASTE:

- D002 CORROSIVE
- D006 CADMIUM
- D007 CHROMIUM
- D008 LEAD
- D003 REACTIVE
- D001 IGNITABLE
- F001 DEGREASING SOLVENT SPENT

→ WASTE ALSO INCLUDE THE FOLLOWING CONSTITUENTS:

- NICKEL
- SULFATE
- CHLORIDE SOLUTIONS
- MURIATIC ACID
- COPPER SOLUTIONS
- NITRIC ACID
- SULFURIC ACID
- MANGANESE PHOSPHATE
- ZINC PHOSPHATE
- ROCHELLE SALTS (POTASSIUM - SODIUM TARTRATE)

ALL OF THE AOCs WHICH PRESENTLY CONTAIN HAZARDOUS WASTE WOULD BE CONSIDERED TO BE RCRA STORAGE UNITS.

⟹ ~~WASTE WHICH IS REMOVED FROM AN AOC MUST~~ A DETERMINATION MUST BE MADE FOR EACH WASTE WHICH IS REMOVED FROM AN AOC AS TO WHETHER IT IS HAZARDOUS OR NON-HAZARDOUS SPECIAL WASTE. ~~THIS~~ THE AMOUNT OF WASTE REMOVED AND WHETHER IT IS HAZARDOUS MUST BE IDENTIFIED FOR EACH AOC.

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8.0 RIA PROPOSES TO COMPLETE CLOSURE BY JAN. 1994. CLOSURE IS TO BEGIN AFTER JUNE OF 1993. THE SCHEDULE INDICATES THAT IT WILL TAKE RIA FROM AUG. 92 TO JUNE 1993 TO OBTAIN A CONTRACTOR TO PERFORM CLOSURE. DECONTAMINATION OF THE AOCs IS SCHEDULED FOR DEC, 1993.

⇒ CONSIDERING THE ARMYS PROCUREMENT PROCEDURES THIS SCHEDULE DOES NOT APPEAR TO BE UNREASONABLE. IN ORDER TO ASSURE THAT PROGRESS IS BEING MADE RIA SHALL PROVIDE THE AGENCY WITH QUARTERLY REPORTS WHICH DETAILS THE PROGRESS WHICH HAS BEEN MADE SINCE THE PREVIOUS REPORT WAS SUBMITTED. IN ADDITION, RIA SHALL NOTIFY THE AGENCY IN WRITING 15 DAY PRIOR TO IMPLEMENTATION OF CLOSURE ACTIVITIES, AND WITHIN 5 DAYS OF COMPLETION OF THE DECONTAMINATION OF BLDG. 64. THIS WILL ALLOW THE AGENCY TIME TO ARRANGE FOR SITE INSPECTIONS PRIOR TO CLOSURE ACTIVITIES AND FOLLOWING DECON., IF NECESSARY.

9.0 AIR EMMISSIONS CONTROL - OSHA AIR CONTROLL REQUIREMENTS AND OTHER APPLICABLE REGULATIONS WILL BE MET, SO AS TO CONTROLL FUGITIVE EMMISSIONS.

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10.0 PERSONNEL SAFETY AND FIRE PROTECTION — OSHA AND OTHER APPLICABLE REGULATORY REQUIREMENTS WILL BE MET. CONTRACTORS WILL SUBMIT A SITE-SPECIFIC WORK AND SAFETY PLAN TO RIA FOR REVIEW PRIOR TO INITIATION OF ON-SITE WORK.

11.0 DECONTAMINATION OF BLDG. 64 — CONTAMINATED RESIDUES FROM THE INTERIOR CONCRETE PAVED AREAS, WALLS, CEILINGS, WINDOW SILLS, etc., AS WELL AS THE PROCESSING EQUIPMENT AND AIR POLLUTION EQUIPMENT. A PHASED APPROACH WILL BE USED INCLUDING.

I. DECONTAMINATION AND REMOVAL OF LOOSE DEBRIS AND SCRAP MATERIAL AND SITE ACCESS CONTROL.

II. ASBESTOS ABATEMENT PROGRAM.

III. DECON AND REMOVAL OF ANCILLARY EQUIPMENT.

IV. DECON AND REMOVAL OF THE DECON AND REMOVAL OF HAZARDOUS WASTE MANAGEMENT AREAS OF CONCERN.

V DECON OF STRUCTURE.

RIA'S GENERAL APPROACH TO THE DECON IS AS FOLLOWS

1. PHYSICAL REMOVAL BY SCRAPING, BLASTING, ETC. - THE RESIDUAL MATERIAL FROM VARIOUS TANKS, VATS EQUIPMENT, AND STRUCTURES.

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11.0 CONT.

2. CONTAINERIZE RESIDUAL MATERIAL FOR DISPOSAL;

3. STEAM CLEAN AND TRIPLE RINSE ALL SURFACES PRIOR TO SCRAP SALVAGE, DISPOSAL AS DEMOLITION WASTE, OR BUILDING REUSE;

4. SELECT ITEMS SUCH AS AIR POLLUTION CONTROL DUCTWORK MAY BE PULVERISED AND/OR SHREDDED AND DISPOSED OF AS HAZARDOUS WASTE, IF THE CLEANING PROCESS PROVES TO BE TOO CUMBERSOME.

5. SOME POTENTIALLY CONTAMINATED WASTE STREAMS (eg. BRICK TANK LINNINGS) MAY REQUIRE TESTING TO DETERMINE THEIR WASTE CLASSIFICATION. IF FOUND TO BE NON-HAZARDOUS MATERIAL WILL BE DECONTAMINATED PRIOR TO PROPER DISPOSAL. IF FOUND TO BE HAZARDOUS, WASTE WILL BE DISPOSED AS SUCH POSSIBLY AFTER ON-SITE PULVERIZATION TO REDUCE VOLUME.

⟹ FOR ANY WASTE RESIDUAL, RIA MUST DETERMINE IF IT IS A HAZARDOUS WASTE (722.111). PULVERIZATION OF A HAZARDOUS WASTE TO REDUCE ITS VOLUME WOULD BE CONSIDERED TO BE HAZARDOUS WASTE TREATMENT AND COULD ONLY BE CONDUCTED PURSUANT TO 722.134 UNLESS A RCRA PERMIT WAS OBTAINED FOR SUCH OPERATIONS.

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12.0 SOIL CLEANUP LEVELS - LEVELS WILL BE DETERMINED FOLLOWING COLLECTION AND ANALYSIS OF SOIL SAMPLES.

13.0 SAMPLING PLAN AND ANALYTICAL METHODS.- THE OBJECTIVE OF THE PLAN IS TO DEMONSTRATE CLEAN CLOSURE.

13.2 SOIL AND GROUNDWATER INFORMATION - NO COMMENT AT THIS TIME. THIS INFORMATION MAY NEED TO BE EVALUATED IF EXTENSIVE CONTAMINATION IS DISCOVERED.

13.3 RIA STATES THAT SAMPLING LOCATIONS CANNOT BE DETERMINE AT THIS TIME DUE TO THE PRESENCE OF DIRT, SLUDGE AND EQUIPMENT WITHIN BLDG. 64.

⇒ WITHIN 30 DAYS OF COMPLETION OF THE DECONTAMINATION OF BLDG. 64, RIA SHALL SUBMIT A CLOSURE PLAN MODIFICATION WHICH IDENTIFIES THE LOCATION OF SAMPLES TO BE OBTAINED TO DEMONSTRATE CLEAN CLOSURE. JUSTIFICATION OF THE SAMPLE LOCATIONS MUST ALSO BE PROVIDED.

13.4 SAMPLING METHODOLOGY - SOIL SAMPLES FROM BENEATH CONCRETE WILL BE OBTAINED FROM 6 INCHES BELOW SOIL/BACKFILL INTERFACE, USING A STAINLESS STEEL SPLIT SPOON.

RIA STATES, "ONE SOIL/SEDIMENT SAMPLE FROM THE CYANIDE DESTRUCT UNIT DISCHARGE SUMP WILL BE COLLECTED BY A STAINLESS STEEL SPOON. THE SAMPLE FOR VOCS WILL BE COLLECTED FIRST PRIOR TO MIXING AND WILL BE TAKEN IN ACCORDANCE WITH ATT. 7 OF THE IEPA INSTRUCTIONS FOR THE PREPARATION OF CLOSURE PLANS."

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13.4 CONT.

⟹ THIS STATEMENT SEEMS TO INDICATE THAT SOIL SAMPLES WILL BE COMPOSITED AND THAT A VOC SAMPLE WILL BE OBTAINED FROM THE MIXING PAN. COMPOSITE SAMPLES ARE NOT ACCEPTABLE TO DEMONSTRATE CLEAN CLOSURE. VOC SAMPLES MUST BE OBTAINED USING A SAMPLING TUBE AS IDENTIFIED IN ATT 7. THE SAMPLE TUBE MUST BE PUSHED INTO THE MATERIAL BEING SAMPLED AND THEN WITHDRAWN. THE SAMPLE CANNOT BE REMOVED FROM THE
⟹ SAMPLE TUBE. CLARIFICATION OF THE ABOVE DESCRIBED PROCEDURE MUST BE PROVIDED IN THE CLOSURE MOD. TO BE SUBMITTED IDENTIFYING THE SAMPLING LOCATIONS.

IF THE CONCRETE AT A SAMPLE LOCATION IS IN DIRECT CONTACT WITH THE BEDROCK A 6 INCH CORE OF BEDROCK WILL BE OBTAINED FOR A ANALYSIS.

13.5 SAMPLE HANDLING. — SAMPLES MUST BE HANDLED IN ACCORDANCE WITH SW-846.

13.6 DRILLING ACTIVITIES — NO COMMENTS.

13.7 BORING LOGS — BORING LOGS WILL CONTAIN ADEQUATE INFORMATION.

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13.8 DOCUMENTATION — NO COMMENT.

13.9 SAMPLE ANALYSES — SAMPLES WILL BE ANALYZED FOR THE FOLLOWING:

- IGNITABILITY
- CADMIUM *
- CHROMIUM *
- BARIUM *
- LEAD *
- ARSENIC *
- SELENIUM *
- MERCURY *
- SILVER *
- VOLATILE ORGANICS (METHOD 8240)
- SEMI-VOLATILE ORGANICS (METHOD 8270)
- REACTIVITY (CHAP 7.3, SW-846)
- CYANIDE.

* TCLP

QA/QC WILL BE PERFORMED IN ACCORDANCE W/ SW-846.

⟹ ANALYSIS FOR CYANIDE (TCLP NEUTRAL EXTRACT) MUST BE INCLUDED. REACTIVITY MAY BE DELETED, ~~BOTH~~ ALONG WITH IGNITABILITY AS THESE ONLY IDENTIFY WHETHER A WASTE IS CHARACTERISTICALLY HAZARDOUS.

13.10 AND 13.11 BOTH SECTIONS APPEAR TO BE ADEQUATE.

⟹ SINCE THE SAMPLING PLAN WILL NOT BE IMPLEMENTED UNTIL ~~&~~ LATE 1993 OR EARLY

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1994, RIA MUST RESUBMIT THE SOIL SAMPLING PLAN FOR RE-EVALUATION. THE AGENCY'S SAMPLING REQUIREMENTS ~~MAY~~ MAY CHANGE SIGNIFICANTLY IN 18 MONTHS. THE SAMPLING PLAN MUST BE RESUBMITTED ~~AS~~ ALONG WITH THE REPORT IDENTIFYING THE PROPOSED SOIL SAMPLING LOCATIONS.

14.0 CONTAMINATED SOIL REMOVAL - RIA WILL SUBMIT A CLOSURE PLAN MODIFICATION ADDRESSING REMOVAL OF CONTAMINATED SOIL ONCE THE EXTENT OF THE CONTAMINATION HAS BEEN IDENTIFIED.

15.0 DISPOSAL OF HAZARDOUS WASTE — WASTE WILL BE DISPOSED OF IN THE FOLLOWING MANOR:

1) WASTE MAY BE SHIPPED TO BLDG. 242 PRIOR TO OFF-SITE DISPOSAL.

2) WASTE MAY BE TRANSPORTED DIRECTLY OFF-SITE FROM BLDG 64.

3) LIQUID WASTE MAY BE TREATED IN RIA'S ON-SITE WASTE WATER TREATMENT PLANT, OR DISCHARGED DIRECTLY TO ROCK IS. POTW WITH PRIOR APPROVAL.

16.0 DISPOSAL UNIT CLOSURE — NOT APPLICABLE TO RIA.

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17.0 EQUIPMENT CLEANING - EQUIPMENT WILL BE CLEANED BY BRUSHING, SCRAPING, VACUUMING ect., FOLLOWED BY STEAM CLEANING OR WIPE WASHING WITH SOAP AND WATER. CLEANING WILL BE DONE IN A DESIGNATED AREA AWAY FROM BOREHOLES, AND SAMPLING EQUIPMENT. RESIDUE WILL BE COLLECTED UNTIL APPROPRIATE DISPOSAL METHODS CAN BE DETERMINED.

18.0 SIGNATORY REQUIREMENTS - THE CLOSURE PLAN CERT. IS SIGNED BY R.W. BREGARD COLONEL COMMANDER OF RIA.

19.0 RIA AND THE INDEPENT REGISTERED P.E. WILL CERTIFY CLOSURE WITHIN 60 DAYS OF COMPLETION OF CLOSURE. A CLOSURE DOCUMENTATION REPORT WILL BE SUBMITTED ALONG WITH THE CERT.

20.0 AND 21.0 STATUS OF FACILTY FOLLOWING CLOSURE - WITHDRAW OR REVISIONS TO THE FACILITYS PART A APP. WILL NOT BE REQUIRED AS THE UNITS CLOSING ARE UNPERMITED.

22.0 THRU 28.0 No COMMENT.

29.0 SWMU CERT. - RIA'S SWMU CERT. IS PROVIDED IN SECTION L OF THE FACILITY'S PART B APPLICATION.

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— GENERAL COMMENTS —

THE CLOSURE PLAN IS ADEQUATE EXCEPT WHERE NOTED ABOVE.

ONCE RIA HAS DECONTAMINATED ~~THE FACILITY~~ BLDG. 64 AND RE-SUBMITTED THE SOIL SAMPLING PLAN, THE PLAN SHOULD BE RE-EVALUATED AGAINST THE CURRENT STANDARDS. THIS SAMPLING PLAN WILL NOT BE SUBMITTED UNTIL LATE 1993.

[redacted]

Attachment 3
For IEPA Use Only
Revised 3/2/89

CLOSURE PLAN REVIEW NOTES AND CHECKLIST
SECTION A: REVIEW NOTES
(attach notes or references as necessary)

Facility Name: Rock Is. Arsenal Log No.: C-600-M-1

Location (County, Municipality, Township, Range, Section): Rock Is., Rock Is., T18N, R1W, Section 30

State ID: 1618130001 U.S. EPA ID: IL5210022 1833

1st Submittal: 9/30/91 Reviewer: KDL Mailed: 12/27/91

2nd Submittal: 5/8/92 Reviewer: K. Lesko Mailed: _____

Regulated Units at the Facility and Their Capacities

Unit	Approved Part A	HWDMS	Closure Plan	Units Closing	Units Remaining Open
S01	YES -		No	No, RIA is currently pursuing a Part B Permit for this unit	
T01	UNPERMITTED	8,800 GAL.	YES	YES	—
S01	"		YES	YES	—
S02	"		YES	YES	—

✓ Partial Closure or _____ Final (full) Closure

✓ Proposed "Clean" Closure or _____ "Dirty" Closure

Status of Facility after Closure: Large Quantity Generator

Are any new treatment processes proposed to minimize or render nonhazardous, hazardous waste? No Explain: _____

Will a change in the Part A be necessary if the closure is approved? No

Is the facility requesting additional time to start or complete closure than allowed? YES Explain: SECTION 8.0, pg. 8-1 INDICATES THAT CLOSURE WILL NOT BEGIN UNTILE JUNE 1993 AND WILL BE COMPLETED BY MARCH OF 1994. NO EXPLANATION IS GIVEN ON THE REASON

Size or area of each unit closing: _____

Identify wastes managed in each unit (include hazardous waste codes):

SEE TABLES 3-4, 3-5, 7-1, 7-2, AND 7-3.

Volume of wastes disposed of, or located in, units at the facility: _____

SEE ABOVE COMMENT.

* Sampling grid spacing N/A (NOT APPLICABLE) Satisfactory? —

Total number of samples from unit = N/A

Were background samples taken from proper soil horizon? N/A

Total number of background samples (minimum of 10 per strata) = N/A

Submitted to COT on N/A (date)

Recommendations from COT dated N/A

Reviewed by CROPA on N/A (date)

* SAMPLING LOCATIONS WILL BE IDENTIFIED FOLLOWING DECONTAMINATION OF THE STRUCTURE.

CROPA memo dated N/A

Identify soil and/or groundwater clean-up levels. (Give basis, i.e., closure plan, COT/CROPA recommendation, PQL, etc.)

N/A

Is the portion of the sample to be tested appropriate? N/A

Approximate volume of waste to be removed: _____ (yds. or gallons)

Approximate volume of underlying and surrounding soil and liner to be removed:

UNKNOWN AT THIS TIME, THE EXTENT OF CONTAMINATION, IF ANY, IS NOT KNOWN.

How is site to be capped or otherwise restored? N/A

Are there any non-RCRA Solid Waste Management Units? YES Explain: SEE RCRA FACILITY ASSESSMENT PREPARED BY THE AGENCY

Have there been any releases from the SWMUs? [redacted] UNKNOWN

Explain: SEE RFA

How is the groundwater to be addressed for the closing unit? NOT ADDRESSED AT THIS TIME.

Is groundwater monitored? NO

Is groundwater contaminated? UNKNOWN

What is the facility's Subpart F compliance status? N/A

If the facility is in assessment, will the assessment be completed prior to final closure? —

Is additional groundwater monitoring warranted in closure plan? UNKNOWN

Explain: THE EXTENT OF CONTAMINATION, IF ANY, IS NOT KNOWN AT THIS TIME

Is groundwater monitoring warranted after closure? UNKNOWN Explain: SEE ABOVE.

Is the facility being referred to USEPA for corrective action? NO

If so, indicate the type of enforcement: 3013 Order _____

3008(h) Order _____

3005(c) Action _____

Final Action: Approve ✓, Disapprove _____, Modify ✓

Schedule for closure: Date of Plan Approval: 8/7/92

Start closure: ASAP

Complete closure: 1/1/94

Certification due to IEPA: 3/1/94

SECTION B: CLOSURE PLAN CHECKLIST

LEGEND

PR: Provided

AD: Adequate

NA: Not Applicable

Note: Respond to questions with Y for yes and N for no

1. Description of hazardous waste operation and proposed closure (725.212(a) and (b))

PR	AD	NA		
Y			a.	description provided of hazardous waste operations
N	Y		b.	description provided for all hazardous waste units at the facility → FACILITY CLOSING SOL UNIT UNDER LOG #C-559 AND PURSUING PAF B PERMIT FOR ANOTHER SOI UNIT.
Y	Y		c.	identification of units closing
N	Y		d.	identification of units remaining open
Y			e.	maximum inventory of wastes at any time during life of facility (should correspond to Part A volumes)
Y			f.	description of steps to be taken for decontamination of facility equipment (725.212(b)(4))
		X	g.	expected year of closure for all units at the facility (725.212(b)(1))
		X	h.	schedule of closure for all units (725.212(b)(6) and (b)(7))
Y			i.	plan submitted 180 days prior to initiation of closure (725.212(d)(1))
Y			j.	all hazardous wastes and hazardous constituents properly identified
Y	Y		k.	groundwater/surface water use in the area identified

2. Public Involvement (725.212(d)(4))

Y			a.	newspaper notice posted
N			b.	public hearing requested?
		+	c.	public hearing granted?
		+	d.	notice of public hearing 30 days prior to hearing

3. Closure time limits (725.213)

N	?		a.	90-day limit for treatment, removal or disposal of hazardous wastes
N	?		b.	180-day limit for completion of closure activities
Y			c.	extension of time limits
N			d.	justification provided for extension of time limits?

4. Disposal or decontamination of equipment (725.214)

PR	AD	NA		
Y			a.	proper disposal of facility equipment and structures, or
Y			b.	decontamination - removal of all hazardous wastes and residues
Y			c.	decontamination of equipment used for cleanup
Y			d.	decontamination method
Y	Y		e.	RCRA wastes and residues to be handled and disposed as hazardous waste

5. Certification of closure (725.215, 725.216 and 725.219)

PR	AD	NA		
Y	Y		a.	provision for certification by owner or operator within 60 days following closure
Y	Y		b.	provision for certification by independent registered Professional Engineer that facility was closed in accordance with the approved closure plan
Y			c.	provision for Closure Documentation Report to document closure activities
		X	d.	survey plat and notification in deed to Agency and appropriate local government office
		X	e.	certification to Agency that notification in deed has been made (725.219(b)(2))

6. Post-Closure Care Plan required? (725.217)

PR	AD	NA	
		X	Disposal units closing after 1/26/83 are required to obtain a Post-Closure Permit. Advise facility that a PCC Plan will be called in at a later date.

7. Closure of <u>container storage area</u> (S01).

PR	AD	NA		
			a.	soil sampling plan ~~[illegible]~~
N				grid spacing → ~~[illegible]~~ SAMPLING LOCATION TO BE IDENTIFIED FOLLOWING DECONTAMINAT. OF THE AREA. → SEE REVIEW NOTES.
				adjacent areas to be sampled for spills and/or windblown particulates
			b.	soil analysis plan
				includes all hazardous constituents
				detection limits
				sampling increments and total depth of sampling
Y				sample handling and analysis (40 CFR 261, App. III; SW-846; Attachment 7 of this document)
Y			c.	removal of contaminated soil → TO BE ADDRESSED IN CLOSURE PLAN MOD. IF NECESSARY
N			d.	cleanup standard
			e.	post-closure care in lieu of clean closure
			f.	decontamination of facility
Y			g.	decontamination of equipment
Y			h.	disposal of cleaning waste and residue

PR	AD	NA		
Y	Y		i.	scale drawing of storage area
Y	Y		j.	surface description (asphalt, concrete, aggregate, soil) → ADDITIONAL
Y	Y		k.	structural integrity and containment devices (cracks, joints, deterioration, curbs, roof) INFO, TO BE PROVIDED FOLLOWING DECON. OF AREA.

8. Closure of tank storage or treatment units (S02, T01 -- 725.297)

PR	AD	NA		
Y	Y		a.	scale drawing of storage area, including secondary containment structures, sumps and drainage pathways
Y			b.	description of materials used to construct tanks, ancillary equipment and secondary containment structures
Y			c.	present condition of tanks, ancillary equipment and secondary containment structures (i.e., structural integrity and surface condition)
			d.	removal of all hazardous wastes and residues from:
Y				tanks
Y				pipes and discharge control equipment
Y				discharge confinement structures
Y			e.	decontamination of equipment
			f.	soil testing beneath and around tank, including secondary containment areas, to verify that no spills or leaks have occurred
Y				includes all hazardous constituents
				detection limits
Y				sampling increments and total depth of sampling
Y				sample handling and analysis (40 CFR 261, App. III; SW-846; Attachment 7 of this document)
		X	g.	cleanup standard } TO BE ADDRESS IF NECESSARY.
		X	h.	removal of contaminated soil
		X	i.	removal of tank (required by State Fire Marshall for underground tanks which contained flammable materials)

9. Closure and post-closure for surface impoundments (S04, D83, T02 - 725.328)

PR	AD	NA		
			a.	removal of standing liquids
			b.	removal of wastes and waste residues
			c.	removal of liner
			d.	removal of underlying and surrounding contaminated soil
			e.	cleanup standard
			f.	management of removed material as hazardous waste unless determined to be nonhazardous under 721.103(c)
			g.	post-closure care in lieu of material removal (725.328(c)) (40 CFR 265.228(a)(2), March 19, 1987)
			h.	dewatering, stabilization or other treatment of remaining wastes to provide cover support and/or render waste nonhazardous (40 CFR 265.228(a)(2), March 19, 1987)
			i.	request for modification of Part A to include T02 if stabilization or treatment is proposed

PR	AD	NA	
			j. modification of post-closure requirements due to mitigating factors (725.217(d))
			k. soil sampling plan
			grid spacing
			adjacent areas to be sampled for spills and/or windblown particulates
			l. soil analysis plan
			includes all hazardous constituents
			detection limits
			sample handling and analysis (40 CFR 261, App. III; SW-846; Attachment 7 of this document)
			m. groundwater monitoring provided to verify clean closure (724 or 725, Subpart F)

10. Closure and post-closure of <u>waste piles</u> (S03 725.358)

			a. removal or decontamination of all waste residues
			b. removal or decontamination of contaminated:
			liners
			subsoils
			structures and equipment (contaminated with leachate or waste)
			c. management of removed materials as hazardous waste unless determined to be nonhazardous according to 721.103(c) & (d)
			d. post-closure care provided in accordance with 725.410 if all contaminated subsoils can't be removed or decontaminated
			e. soil sampling plan
			grid spacing
			adjacent areas to be sampled for spills, tracking and/or windblown particulates
			f. soil analysis plan
			includes all hazardous constituents
			detection limits
			sampling increments and total depth of sampling
			sample handling and analysis (40 CFR 261, App. III; SW-846; Appendix 7 of this document)

11. Closure and post-closure care objectives for <u>land treatment</u> (D81 725.380(a))

			a. control mitigation of hazardous wastes and hazardous waste constituents into the groundwater
			b. control release of contaminated run-off into surface water
			c. control release of airborne particulate contaminants
			d. compliance with food chain crop requirements (725.376)

12. Considerations to be addressed in land treatment closure and post-closure plans (725.380(b))

PR	AD	NA		
—	—	X	a.	type and amount of hazardous wastes and Appendix H hazardous constituents which are contained in the waste
—	—	X	b.	mobility of hazardous wastes and constituents
—	—	X	c.	site location, topography and surrounding land use and the related potential effects of pollutant migration
—	—	X	d.	climate (net precipitation)
—	—	X	e.	soil profile and soil properties
—	—	X	f.	geologic profile
—	—	X	g.	surface and subsurface hydrology
—	—	X	h.	unsaturated zone monitoring information (725.378)
—	—	X	i.	type, concentration and depth of hazardous waste migration
—	—	X	j.	removal of contaminated soils
—	—	X	k.	cleanup standards
—	—	X	l.	function of final cover
—	—	X	m.	engineering characteristics of final cover
—	—	X	n.	groundwater monitoring

13. Requirements during land treatment closure period (725.380(d))

—	—	X	a.	unsaturated zone monitoring
—	—	X	b.	maintain run-on control system (725.372(b))
—	—	X	c.	maintain run-off control system (725.372(c))
—	—	X	d.	control wind dispersal of particulates

14. Certification by qualified soil scientist in lieu of a registered Professional Engineer for closure of land treatment units (725.380(e))

—	—	X

15. Closure of <u>incinerators</u> (T03)

—	—	X	a.	removal of all hazardous wastes and hazardous waste residues, including ash, scrubber waters and scrubber sludges
—	—	X	b.	management of residues as hazardous wastes unless determined to be nonhazardous according to 721.103(c) & (d)

16. Closure of <u>thermal treatment units</u> (725.481)

—	—	X	a.	removal of hazardous waste and hazardous waste residues, including ash
—	—	X	b.	management of residues as hazardous waste unless determined to be nonhazardous according to 725.103(c) & (d)

17. Closure of <u>chemical, physical and biological treatment units</u> (725.504)

—	—	X	a.	removal of all hazardous wastes and hazardous waste residues from treatment process or equipment, discharge control equipment and discharge confinement structures

PR AD NA

— — X b. management of residues as a hazardous waste unless determined to be nonhazardous according to 721.103(c) & (d)

ALL DISPOSAL UNITS

18. Objective of closure and post-closure plans (725.410(b))

— — — a. control of pollutant migration from facility via groundwater, surface water and air
— — — b. control of ponding and surface water infiltration
— — — c. erosion, run-on and run-off control

19. Considerations for achievement of closure objectives (725.410(c))

— — — a. type and amount of hazardous wastes and Appendix H hazardous constituents which are contained in the waste
— — — b. mobility and the expected rate of migration of pollutants
— — — c. site location, topography and surrounding land use and the related potential effects of pollutant migration (proximity to groundwater, surface water and drinking water)
— — — d. climate, including total amount, net amount, frequency and pH of rainfall
— — — e. engineering characteristics of cover, including material, final surface contours, thickness, porosity, slope and length of run of slope
— — — f. geological and soil profiles
— — — g. surface and subsurface hydrology
— — — h. soil balance analysis if on-site soils are to be used for cover and vegetative layer

20. Cover design (725.410(a))

— — — a. grain size analysis and grain size requirements
— — — b. soil classification -- USDA textural and Unified Soil Classification
— — — c. compaction requirements -- should be 90-95% of ASTM D698 (Standard Proctor) density, compacted at a moisture content 3-5% above optimum moisture content
— — — d. type of vegetation proposed
— — — e. hydraulic conductivity
— — — f. slope stability analysis
— — — g. synthetic membrane specifications
— — — h. depth of frost penetration and its effect on the cover system
— — — i. erosion control
— — — j. gas collection system
— — — k. water balance analysis to estimate infiltration
— — — l. settlement/subsidence effects considered

21. Construction procedures for cover (725.410(a))

PR	AD	NA		
—	—	—	a.	equipment requirements -- sheepsfoot roller, disk and water truck or other provisions for moisture control
—	—	—	b.	lift thickness -- should be 8 inches (loose thickness) or less
—	—	—	c.	construction QA/QC -- number of compaction tests, hydraulic conductivity tests, grain size tests, etc.
—	—	—	d.	hydraulic conductivity testing conducted in accordance with IEPA guidance

22. Notice to local land authority (725.216 and 725.219)

—	—	—	a.	survey plat submitted to the Agency and to County Recorder with closure certification
—	—	—	b.	note on plat which states owner's and operator's obligation to restrict disturbance of the site per 725.217(c)
—	—	—	c.	record provided of type, location and quantity of hazardous waste disposed of within each cell or area of the facility, including wastes disposed prior to January 12, 1981 (725.219(a))

23. Notice in deed to property (725.219)

—	—	—	a.	recorded on deed or other instrument which will be examined during a title search that the land has been used to manage hazardous waste
—	—	—	b.	copy of this instrument and a certification from the owner/operator that it has been properly recorded

24. Maintenance requirements -- activities and frequencies (725.217(a); 725.218(c); 725.410(d))

—	—	—	a.	integrity of final cover or containment structures
—	—	—	b.	leachate collection, removal and treatment systems
—	—	—	c.	groundwater monitoring system
—	—	—	d.	gas collection and control system (if provided)
—	—	—	e.	benchmarks
—	—	—	f.	name, address and phone number for post-closure care contact person (725.218(c)(3))

25. Security

—	—	—	a.	restricted access, if necessary
—	—	—	b.	security provided, if necessary (725.217(b))

26. Groundwater monitoring (725.217(a)(1); 725.218(a)(1); 725.191 to 725.193)

PR	AD	NA		
—	—	✓	a.	description of groundwater monitoring system, activities and frequencies for post-closure period (725.191; 725.218(a)(1))
—	—	✓	b.	sampling and analysis plan (725.192)
—	—	✓	c.	outline of groundwater quality assessment program (725.193)

ALL FACILITIES

27. Closure performance standard (725.211)

Y	Y	—	a.	minimizes further maintenance
Y	Y	—	b.	protects human health and environment
Y	Y	—	c.	addresses all hazardous constituents (Part 721, Appendix H)

28. Training requirements for cleanup activities

Y	Y	—	a.	provisions made to ensure that site workers will receive training in accordance with 29 CFR, Part 1910

29. Part A Status

—	—	✓	a.	Part A and HWDMS reviewed
—	—	✓	b.	discrepancies between units and design capacities in Part A, HWDMS and closure plan resolved
—	—	✓	c.	for complete closure -- all units closed or withdrawn
—	—	✓	d.	revised Part A or withdrawal request to be submitted with closure certification

30. SWMU status

—	—	✓	a.	initial screening completed → SEE PART B APPLICATION (SECTION L)
—	—	✓	b.	initial screening previously submitted _____
—	—	✓	c.	environmentally significant information found during file search
—	—	✓	d.	Certification of Continuing Releases received from facility
—	—	✓	e.	units identified by facility consistent with those found during file search
—	—	✓	f.	releases indicated on certification
—	—	✓	g.	releases to be cleaned up under closure
—	—	✓	h.	releases to be referred to US EPA for action
—	—	✓	i.	SWMU's not previously identified discovered during closure?

RECORD OF TELEPHONE CONVERSATIONS

Date	Person Contacted	Topic of Conversation

ADDITIONAL COMMENTS

APPENDICES A-F

CLOSURE PLAN
ROCK ISLAND ARSENAL
BUILDING #64

Prepared For:

Rock Island Arsenal
Rock Island, Illinois

RECEIVED
MAY 08 1992
IEPA-DLPC

Prepared By:

TCT-St. Louis
1908 Innerbelt Business Center Drive
St. Louis, Missouri 63114-5700

April 1992

9214

APPENDIX A

PFN-NUMBERS
A LIST OF REFERENCES

PFN NUMBER LIST / APPENDIX "A"

PFN:	TITLE	DATE:	SUBJECT	AUTHOR
001	ILLUSTRATED HISTORY OF RIA	12/31/90	HISTORICAL	THOMAS J. SLATTERY
002	MONITORING WELLS	11/22/89	DRAWING	B. HAVLIN
003	BLDG 64 SITE PLAN AND EQUIPMENT LOCATION	1/1/04	DRAWING	
004	CRANE RAIL MAINTENANCE - FLOOR PLAN 6 OF 16	2/13/86	DRAWING	HDG
005	HOLDING TANKS IND. WASTE TREATMENT EXISTING FLOOR REMOVAL PLAN	1/1/04	DRAWING	CSM-BELL GALYARDT&ASSO
006	BLDG 64 - PLANT LAYOUT WEST WING-NORTH END TANKS	8/2/67	DRAWING	R.AKBERY
007	ROCK ISLAND INDEX TO BUILDINGS & MISC. STRUCTURES	1/1/04	DRAWING	?
008	PLATING TANK PIT REPAIR PLAN - CONCRETE PIT FLOOR	5/26/66	DRAWING	REA
009	GENERAL SANITARY & STORM SEWER PLAN - ROCK ISLAND	1/1/04	DRAWING	BARTHOLOMEW
010	BUILDING 64 - MAKE-UP AIR	11/27/63	DRAWING	JRG
011	AIR POLLUTION CONTROL, MECHANICAL MISC. DETAIL SHEET & SCHEDULES	1/1/04	DRAWING	BELING ENG.
012	LEGEND & SITE PLAN	1/1/04	DRAWING	BELING ENG.
013	MECHANICAL -PLATING TANK HOOD DETAILS	1/1/04	DRAWING	BELING
014	ELECTRICAL- PARTIAL PLAN & SCHEMATICS PLATING BLDG 64	1/1/04	DRAWING	BELING
015	MECHANICAL PLAN-CLEAN, ADJUST&BALANCE OF EXH. SYSTEMS FOR TANKS 47-	1/1/04	DRAWING	BELING
016	MECHANICAL- SECTIONS & DETAILS	1/1/04	DRAWING	BELING
017	MECHANICAL -SECTIONS & DETAILS	1/1/04	DRAWING	BELING
018	MECH. PARTIAL PLAN & SECT.- EXH SYS FOR TANKS 1,1A,2,2B,3,3C,4,7,8,9,10,11	1/1/04	DRAWING	BELING
019	MECHANICAL PARTIAL PLAN & SECTIONS- EXH SYS FOR TANKS 102,104,106,10	1/1/04	DRAWING	BELING
020	MECHANICAL PARTIAL PLAN & SECTIONS- EXH SYS FOR TANKS 116-121	1/1/04	DRAWING	BELING
021	EXHAUST SYSTEM FOR TANKS 93-115	1/1/04	DRAWING	BELING
022	EXHAUST SYSTEM OF BLDG 64	1/1/04	DRAWING	BELING
023	MECHANICAL DEMOLITION PHOTOS	10/27/78	PHOTOS	BELING ENG.
024	BLDG 106 - MECHANICAL PARTAIL PLAN & DETAILS- FOUNDARY	1/1/04	DRAWING	BELING ENG.
025	MECHANICAL PLAN & SECTIONS-FOUNDARY BLDG 106	1/1/04	DRAWING	BELING ENG
026	MECHANICAL DEMOLITION PLAN PLATING BLDG 64	1/1/04	DRAWING	BELING ENG
027	MECHANICAL SECTIONS - FOUNDRY BLDG 106	1/1/04	DRAWING	BELING ENG
028	MECHANICAL SECTIONSBLDG 106 & JIB CRANE SUPPORTS BLDG 230	1/1/04	DRAWING	BELING ENG
029	HEAT TREAT SECTION	11/10/42	DRAWING	LEL
030	PIT & FLOOR SHOP "F"	6/12/44	DRAWING	NLH
031	PIT FOR SALT BATH FURNACE	8/3/44	DRAWING	CCB
032	FLOOR PLATES FO FURNACE PIT	9/16/44	DRAWING	NLH
033	SWITCHGEAR ROOM AND TRANSFORMER PLATFORM COURT	10/11/48	DRAWING	NLH
034	FLOOR PLATES FOR FURNACE PIT	9/27/44	DRAWING	NLH
035	RETAINING WALL -SULPHURIC ACID STORAGE	8/29/55	DRAWING	JWM
036	PLATING TANK-PLAN & DETAILS	6/1/62	DRAWING	JEC
037	CYANIDE WASTE TREATMENT PLANT - PLAN	5/23/57	DRAWING	CTL
038	CYANIDE WASTE TREATMENT PLANT - PIPING & ELECTRICAL	5/23/57	DRAWING	CTL
039	TRENCH REPAIR - PLAN & DETAILS	8/16/63	DRAWING	HFM
040	PLATING TANK PIT REPAIR- SECTIONS	5/26/66	DRAWING	REA
041	EXISTING GRATING PLAN - PLATING TANK PIT REPAIR	5/26/66	DRAWING	REA
042	REPAIR CRANE RAILS, W.WING/PARTofE.WING-PLAN, ELEV, SECT, DETAIL,PHOTO	1/1/04	DRAWING	WLM
043	AIR MAKE-UP	1/17/72	DRAWING	EWJ
044	UNIT HEATER PLATFORM - PLAN & DETAILS	2/15/66	DRAWING	WJM
045	PLATING TANK PIT REPAIR- PLAN CONCRETE PIT REPAIR	5/26/66	DRAWING	REA
046	ROCK ISLAND ARSENAL AIR POLLUTION CONTROL PLANS & DETAILS-BLDG 106	1/1/04	DRAWING	BELING ENG.
047	ROOF REPLACE BLDG 64-ELEV,DETAILS,CUPOLA,SITE PLAN,PROJ LOC,INDEX.	1/1/04	DRAWING	W. GRETTE

PFN NUMBER LIST / APPENDIX "A"

PFN:	TITLE	DATE:	SUBJECT	AUTHOR
048	ROOF AND SASH REPAIR BLDG 64-65	1/12/77		R. GOSSEN
049	MAKE-UP AIR REPLACEMENT BLDG 64	1/7/78	DRAWING	BRACKE-HAYES- MILLER
050	SANITARY FACILITIES BLDG 106 AND 64	5/6/80	DRAWING	BRACKE-HAYES MILLER
051	SANITARY FACILITIES - BLDG 64	6/5/80	DRAWING	BRACKE-HAYES-MILLER
052	SANITARY FACILITIES-ARCHITECTURAL,ELECTRICAL,MECHANICAL,KEY PLAN.	6/5/80	DRAWING	BRACKE-HAYES-MILLER
053	CHIMNEY FOR BOILER HSE "F"	1/1/04	DRAWING	LBW
054	HOLDING TANKS - INDUSTRIAL WASTE TREATMENT	1/1/04	DRAWING	BELL GALYARDT
055	HOLDING TANKS - INDUSTRIAL WASTE TREATMENT	1/1/04	DRAWING	BELL GALYARDT
056	REFUSE SLAB	7/26/45	DRAWING	GLB
057	FOUNDRY AND WELDING SHOPS APC	6/15/72	DRAWING	KIMMEL-JENSEN
058	NEW ELECTICA MANHOLE AND DUCT LINE	5/17/51	DRAWING	NLH
059	REVISED DETAILS - HOPPER & ELEVATOR PITS	8/9/56	DRAWING	JWM
060	CONCRETE FLOOR	5/11/72	DRAWING	DL
061	HEAT TREAT FURNACE PIT PLAN & DETAILS	1/7/64	DRAWING	REA
062	PLANT FACILITIES OFFICE	2/3/59	DRAWING	SWM
063	CONDENSATE CORROSION PROTECT PROG-REPLACE STEAM TRAPS IN MAIN LINE.	5/6/86	DRAWING	BH
064	EQUIPMENT LAYOUT, BRONZE & ALUMINUM FOUNDRY	4/10/73	DRAWING	RJN
065	FOUNDRY PATTERN STORAGE AREA, SECOND FLOOR, SPRINKLER SYSTEM	3/1/76	DRAWING	BECKSTROM & DAY
066	SANITARY FACILITIES	7/1/79	DRAWING	BRACKE HAYES MILLER
067	ELECTRICAL SERVICE FOR ARC. FURNACE, EXTERIOR ELECTRICAL PLAN	3/18/83	DRAWING	PS
068	SANITARY FACILITIES IN BLDG 106	7/1/79	DRAWING	BRACKE, HAYES, & MILLER
069	STORM SEWER OF BLD 106	1/1/04	DRAWING	NOT AVAILABLE
070	RIA FOUNDRY SAND SYSTEMS	1/1/04	DRAWING	NA
071	WASTE TREATMENT FOR ELECTROPLATING INDUSTRY & METAL FINISHING	1/1/04	REFERENCE	EPA
072	VALVE IDENTIFICATION CHART	1/1/04	EQUIPMENT SHI	NA
073	MEETING ROOSTER	7/22/91	MEETINGS	EVERYONE
074	SPILL PREVENT CTRL COUNTERMEASURE PLAN (SPCC) AND INST SPILL CONT PL/	2/25/88	REPORTS	SMCRI-SEM
075	LAND USE PLAN	1/1/04	REPORT	US ARMY/BLACK&VEATCH
076	FUTURE DEVELOPMENT PLAN	12/19/90	REPORT	BLACK AND VEATCH
077	INVENTORY OF INDUSTRIAL OPERATIONS	12/31/71	REPORT	RIA
078	WASTE WATER TREATMENT LAYOUT	1/1/04	DRAWING	NA
079	CLEANING AND WIPE TESTING OF BLDG 106	8/21/89	REPORT	ALTER
080	INDUSTRIAL HYGIENE SURVEY REPORT	1/27/86	REPORT	PACIFIC ENVIRO SERVICES
081	REMEDIATION OF BLDG 106	9/6/89	MEMO	ROBERT PLATT, CHCM,CSP
082	TRIP REPORT ON BLDG 64	7/1/91	MEMO	RICHTER/SHOWALTER/SHORE
083	ROCK ISLAND WASTEWATER DISCHARGE APPLICATION FOR BLDG 65, 212	12/31/88	PERMIT	RIA BY CAROL SCHROEDER
084	IEPA PART A , BLDG 212 PERMIT APPLICATION, WASTE WATER DISCHARGE	8/12/87	PERMIT	RIA CAROL SCHROEDER
085	WATER POLLUTION STUDY	3/23/79	REPORT	BARTHOLOMEW
086	INTERIM FINAL REPORT,GRD WATER CONT SRVY#38-26-0308-89(SWMU)	5/21/88	REPORT	USAEHA
087	GEOHYROLOGIC STUDY NO. 38-8814-90	9/28/89	REPORT	USAEHA
088	UPDATE OF THE INITIAL INSTALLATION ASSESSMENT OF RIA, #####	1/1/04	REPORT	USATHAMA
089	METAL FINISHING WASTEWATER TREATMENT FLOW DIAGRAM	1/1/04	DRAWING	NA
090	IEPA WATER POLLUTION CONTROL PERMIT FOR BLDG 212, 65	12/8/87	PERMIT	IEPA
091	IEPA OPERATING PERMIT FOR AIR EMMISIONS IN BLDG 106	11/2/88	PERMIT	IEPA
092	IEPA OPERATING PERMIT FOR AIR EMMISSIONS IN BLDG 64	1/12/88	PERMIT	IEPA
093	EQUIPMENT INVENTORY- RIA NUMBERS BY LOCATION	7/18/90	EQUIPMENT	RIA
094	WASTEWATER ANALYTICAL REPORTS - BLDG 65	10/18/89	REPORTS	SUBURBAN LABORATORIES

PFN NUMBER LIST / APPENDIX "A"

PFN:	TITLE	DATE:	SUBJECT	AUTHOR
095	RIA DISASTER CONTORL PLAN (RIA-DCP)	1/31/87	REPORTS	SMCRI-APP
096	IEPA PART B APPLICATION FOR BLDG 242	8/30/90	PERMITS	RIA/HMTC/ERM
097	IEPA/RIA PRE-ENFORCEMENT CONFERENCE LETTER	5/28/91	CORRESPONDEI	IEPA
098	HABS/HAER INVENTORY	1/1/04	HISTORY	US DEPT OF INTERIOR
099	BUILDING 64 CLOSURE PLAN FOR IEPA	6/27/91	MEMO	JOHN RUBLE
100	SCOPE OF WORK	6/3/91	SCOPE OF WOR	NASHVILLE CORPS
101	PLATING SHOP SCHEMATIC	9/15/77	DRAWING	NA
102	CALIPER LOG, GAMMA-RAY & NEUTRON, CALIPER	9/7/77	MONITORING W	FRIEND WELL SURVEYS
103	FIELD NOTES ON RIA	7/22/91	NOTES	KK, DS, JS
104	WELL LOGS AND THEIR LOCATION BY MAP AND PRINT OUT	1/1/04	DRAWING	CHUCK SWYNENBURG
105	PARKING LOT	5/19/89	DRAWING	RIA
106	ROCK ISLAND ARSENAL	1/1/04	DRAWING	RIA
107	LOCATION OF MONITORING WELLS	11/22/89	DRAWING	CHUCK SWYNENBERG
108	OLD MAPS ON BUILDINGS FROM 1918 TO 1935	1/1/04	HISTORY AND M	RIA
109	NARRATIVE FROM MITCH SMITH	2/21/91	CORRESPONDEI	MITCH SMITH
110	EXCESS PLATING EQUIPMENT	5/6/88	MEMO	NA
111	DR. SHORE TO IEPA	6/26/91	CORRESPONDEI	DR. SHORE
112	BLDG 106, ENVIRONMENTAL CLEAN-UP	6/16/89	DRAWING	B.H
113	RCRA INSPECTION REPORT	3/15/91	CORRESPONDEI	IEPA
114	WASTE DISPOSITION FORM	1/1/04	CORRESPONDEI	IEPA
115	TELEPHONE CONVERSATION REORD	1/1/04	MEMO	DR. SHORE
116	TWENTY DAY NOTICE	6/27/91	CORRESPONDEI	IEPA
117	IEPA AMMENDMENT APP-BLDG 64 (STORAGE)&65(TREATMENT), PART A	7/17/91	CORRESPONDEI	COLONEL RICHAED BREGARD
118	LOCATIONS OF SITES FOR SOIL SAMPLES ON RIA	6/17/91	MEMO	STEPHEN ROBINSON
119	RESULTS OF PRE-ENFORCEMENT CONFERENCE W/ IEPA	6/28/91	MEMO	ACHIEL DUPONT
120	AMDMT TO THE RCRA INTER STATUS HAZ. WASTE STORAGE PRMT, PT A	7/9/91	MEMO	ACHIEL DUPONT
121	OPERATION OF BLDG 65, WWTF	3/7/91	MEMO	DR. FOSS
122	OPERATION OF BLDG 65, WWTF	3/7/91	MEMO	DR. FOSS
123	REMEDIATION OF RESIDUE IN STORAGE TANK,BLDG 64,NE COURTYARD	3/28/91	MEMO	STEPHEN ROBINSON
124	REMEDIATION OF RESIDUE IN THE CYANIDE DESTRUCT FACILITY	4/1/91	MEMO	JIM THOMPSON
125	REMEDIATION IN THE CYANIDE DESTUCT UNIT, BLDG 64	4/1/91	MEMO	STEPHEN ROBINSON
126	REFERNCE MEMORANDOM, 4/1/91 - CYANIDE DETRUCT UNIT	5/14/91	MEMO	STEPHEN ROBINSON
127	ASBESTOS REMEDIATION IN BLDG 64	5/24/91	MEMO	ACHIEL DUPONT
128	REFERENCE TO THE 6/27/91 MEETING	7/11/91	CORRESPONDEI	RIA
129	CLOSURE SCHEMATIC FOR BLDG 64	1/1/04	MEMO	ACHIEL DUPONT
130	ENVIRONMENTAL REQUIREMENTS FOR BLDG 64	1/19/91	MEMO	FRED
131	ENVIR REGS REGARDING LAYAWAY AND EXCESSING FED FACILITIES	1/17/91	MEMO	DON LAPPIN
132	OPERATION BLDG 65, WWTF	2/8/91	MEMO	STEPHEN ROBINSON
133	OPERATION OF BLDG 65, WWTF	2/13/91	MEMO	DR. FOSS
134	MEETING OVER BLDG 65 DATED 2/11/91	2/14/91	MEMO	KERMIT HANSON
135	ENG. REQ. FOR CLOSURE OF BLDGS. 64 & 65	12/3/90	MEMO	ACHIEL DUPONT
136	MILESTONE SCHEDULE FOR EQUIPMENT TURN IN FOR BLDG 64	1/1/04	MEMO	STEPHEN ROBINSON
137	LAY AWAY BLDGS 64 & 65	1/1/04	MEMO	STEPHEN ROBINSON
138	CLEAN-UP OF PLATING SHOP	11/1/90	MEMO	NA
139	CLEAN-UP OF PLATING SHOP	1/1/04	MEMO	JOHN RUBLE
140	CLEAN UP OF BLDG 64	9/30/90	MEMO	THOMAS WOLFE
141	PROJECT UPDATE	2/8/91	MEMO	STEPHEN ROBINSON

PFN NUMBER LIST / APPENDIX "A"

PFN:	TITLE	DATE:	SUBJECT	AUTHOR
142	ENGINEERING REQUIREMENTS FOR CLOSURE OF BLDGS 64,65	1/1/04	MEMO	ACHIEL DUPONT
143	MEETING AGENDA NOTES	1/1/04	MEMO	NA
144	PHONE LIST	1/1/04	MEMO	
145	ENG REQ. FOR CLOSURE OF BLDGS 64,65	11/27/90	MEMO	ACHIEL DUPONT
146	PROJECT UPDATE	1/1/04	MEMO	NA
147	CLOSURE OF BLDGS 64,65	1/1/04	MEMO	ACHIEL DUPONT
148	BLDGS 64,65 CLOSURE	10/31/90	MEMO	STEPHEN ROBINSON
149	FINAL EVACUATION FROM BLDG64	3/4/91	MEMO	TJ SHOWALTER
150	SITE VISIT & MEETING AT RIA TO SCOPE BLDG DECON REQ.	4/24/91	CORRESPONDE	CORPS
151	RESPONSE TO 6/27/91 MEETING	7/11/91	CORRESPONDE	ACHIEL DUPONT
152	DISCUSSION W/ DR. SHORE	8/1/91	TCT-MEMO	JON STROBEL
153	INSTALLATION ASSESSMENT OF RIA-REC REVIEW OF HAZMAT ,164	12/31/79	REPORT	USATAHMA
154	TERRACON CONSULTANTS, INC.	7/26/86	REPORT	Terracon
155	SPECS ON ENVIRONMENTAL CLEAN-UP OF BLDG 106	8/2/91	TCT- MEMO	KEVIN KLIPSCH
156	3 PAGES OF NOTES FOR THE IEPA/RIA/TCT PEORIA MEETING	8/2/91	FAX TO RIA	TCT
157	DRMO RELEASE DOCUMENT TO THE CONTRACTOR FOR BLDG 64	4/16/91	CONTRACTOR	RIA
158	WATER QUALITY ENGINEERING CONSULTATION, 24-0048-78	5/21/88	REPORT	USAEHA
159	SALE BY REFERENCE	8/31/89	REPORT	DEF REUTILZ&MARKET SERV
160	SPECIFICATIONS FOR ENVIRONMENTAL CLEAN UP OF BLDG 106	6/16/89	REPORT	E & H
161	EQUIPMENT LIST FOR BLDG 64	4/30/85	MEMO	RLJ
162	SOIL SURVEY FOR ROCK ISLAND COUNTY	10/31/77	REPORT	USDA SCS
163	DAVENPORT EAST QUADRANGLE		DRAWING	USGS
164	RAND MCNALLY MAP OF ILLINOIS	1/1/04	DRAWING	RAND MCNALLY
165	CLOSURE PLAN	1/1/04	REGULATIONS	ENVIRONMENT REPORTER
166	STANDARDS APPLICABLE TO GENERATORS OF HAZARDOUS WASTE	1/1/04	REGULATIONS	ILLINOIS HAZARDOUS WASTE R
167	MINUTES OF THE 8/5/91 MEETING OF IEPA/RIA/TCT	8/5/91	MINUTES	JON STROBEL
168	SPECIFICATIONS FOR ENVIRONMENTAL CLEAN UP OF BLDG 106	2/19/91	MEMO	RIA
169	HAZARDOUS WASTE MANAGEMENT SURVEY	6/6/85	REPORT	USAEHA
170	HAZARDOUS WASTE MANAGEMENT SURVEY	1/15/81	REPORT	USAEHA
171	HAZARDOUS WASTE MANAGEMENT SURVEY	11/18/81	REPORT	USAEHA to CMDR@VIRGINIA
172	GROUND-WATER POTENTIAL CONTAMINATION SURVEY	10/11/85	REPORT	USAEHA
173	INVESTIGATION OF THE UST-34 NEAR BLDG 64	7/1/91	REPORT	DAILY & ASSO
174	ASSISTANCE TO DOD ACTIVITIES DISPOSING OF HAZARDOUS PROPERTY	8/24/90	REPORT	DEFENSE LOGISTICS AGENCY
175	HAZARDOUS WASTE DISPOSAL INFORMATION		MEMO	ENVIRO STAFF AT RIA
176	PRELIMINARY REPORT, HAZARDOUS WASTE MANAGEMNT SURVEY	3/31/81	REPORT	USAEHA
177	INSTALLATION ASSESSMENT RELOOK PROGRAM	8/31/86	REPORT	BIONECTICS &ENVIRO PHOTO IN
178	EXCESS PLATING EQUIPMENT LIST	5/6/88	MEMO	MAINTENANCE AT RIA
179	GEOLOGY FOR PLANNING IN ROCK ISLAND COUNTY, ILLINOIS	12/12/80	REPORT	ILLINOIS STATE GS
180	PLATE 1 SURFICIAL GEOLOGY OF RIC,I	12/12/80	DRAWING	ILLINOIS STATE GS
181	PLATE 2,X-SECTIONS SHOWING RELATIONSHIPS OF UNCONSOLIDATED DEP	12/12/80	DRAWING	ILLINOIS STATE GS
182	PLATE 3 GEOLOGIC CONDITIONS FOR SOLID-WASTE DISPOSAL IN RIC,I	12/12/80	DRAWING	ILLINOIS STATE GS
183	LOCAL CLIMATOLOGICAL DATA, ANNUAL SUMMARIES FOR 1982, MOLINE IL	12/12/82	REPORT	NOAA
184	ENGINEERING MANUAL FOR CTRL OF IN-PLANT ENVIRONMENT IN FOUNDRIES	12/12/56	BOOK	AMERICAN FOUNDRY SOCIETY
185	71-07-02 STORM DRAIN PLAN AND PROFILE (SHEET C-31)	3/1/75	DRAWING	RIA E+H
186	71-07-02 STORM DRAIN PLAN AND PROFILE (SHEET C-32)	3/1/75	DRAWING	RIA E+H

ATTACHMENT 7

Soil Volatile Sampling Procedures

Procedure:

A. PREPARATION AND DECONTAMINATION OF SOIL SAMPLER (i.e. STAINLESS STEEL, BRASS, BRONZE, COPPER, etc.). An example of these samplers would be a shelby tube, split-barrel sampler with metal tube inserts or california sampler. These are only examples there maybe more types available. Also, the sample tube must be at least six inches long.

*1. Wash tubing or sampler with hot water and a nonfoaming detergent.
2. Rinse with hot water.
*3. Rinse with a solvent, such as hexane or acetone.
4. Rinse with very hot water to drive off solvent.
5. Rinse with deionized distilled water.
6. Air Dry
7. Store the sampler in aluminum foil until ready for use.
*Consult the laboratory for specific recommendations.

B. SOIL SAMPLING FOR VOLATILE ORGANICS

1. Using a properly decontaminated sampler (refer to preparation and decontamination instructions), push or drive the sampler to obtain a representative soil sample.

2. DO NOT remove sample from sample tube in the field. The laboratory should remove the sample from the sampling tube.

3. Immediately add clay or other cohesive material (i.e. wetted bentonite) to the ends of the sample to eliminate head space, if necessary.

4. Cover both ends of the sampler with aluminum foil. If possible, cover the aluminum foil with a cap.

5. Put the sample in storage at 4 degrees centigrade immediately.

6. Transport the samples to the laboratory as soon as possible. Most laboratories require delivery within 24 hours of sampling.

NOTE:

Soil samples which will be tested for volatile organic constituents <u>cannot</u> be composited because of the volatilization which would result from any compositing method.

APPENDIX C-1

DRMO COLLECTION AND DISPOSAL OF SOLID INDUSTRIAL WASTE (PFN-174)

DEFENSE LOGISTICS AGENCY
DEFENSE REUTILIZATION AND MARKETING OFFICE ROCK ISLAND
ROCK ISLAND ARSENAL, BUILDING 154
ROCK ISLAND, ILLINOIS 61299-7030

IN REPLY REFER TO DRMO-RI

SUBJECT: Assistance to DoD Activities Disposing of Hazardous Property

TO: All DoD Activities within the DRMO Rock Island Service Area

I. References:

A. Defense Utilization and Disposal Manual, DoD 4160.21-M.

B. Defense Demilitarization Manual, DoD 4160.21-M-1.

C. Defense Scrap Yard Handbook, DLAH 4160.1, Army TM 755-200, KNAVSANDA PUB 5523, AFM 68-3, MCO P 4010.17-M.

D. Military Standard Requisitioning and Issue Procedures (MILSTRIP) Basic, DoD 4140.17-M.

E. Code of Federal Regulations, 40 CFR and 49 CFR.

II. Purpose: This package sets forth standardized procedures for the turn-in of hazardous excess personal property to DRMO Rock Island and DRMO Savanna. It applies to all Department of Defense activities. Information contained herein emanates from and implements the regulatory guidance contained in the above references. The package is furnished to assist commanding officers, accountable supply officers and other generating activities in the day-to-day issues of hazardous property.

III. Unacceptable Property: The DRMO has the responsibility of disposing of all excess personal property and scrap material generated by DoD activities except for the categories of property listed below. The DRMO cannot accept either physical custody or accountability for the following:

A. Records of the Federal Government
B. Classified material
C. Real Property
D. Radioactive waste
E. Thermal batteries
F. DoD inspection stamps and devices
G. Cryptological Equipment

Note: Non-hazardous excess property is screened by Federal + State for possible re-use. Unwanted items are offered for sale and unsold items w/ metal are placed in unprepared scrap pile and sold as scrap.

H. Consecrated religious items
I. One-time research and development wastes and residues
J. Lethal chemical warfare materials
K. Garbage, refuse, and trash
L. Leaking and/or unidentified containers

IV. Physically Unacceptable Property: The DRMO is prohibited from taking physical custody of the property listed below. However, the DRMO may take accountability for such property when the generating activity retains physical custody. If you need to dispose of any of the following property, call the Chief, DRMO Rock Island, or the Environmental Protection Specialist, AV 793-1617.

A. Live animals
B. Explosives and Ammunition
C. Incendiary, poisonous and irritant products
D. Drugs, biologicals, and controlled substances
E. Nitrate base film
F. Hazardous materials and wastes
G. PCB items greater than 50 PPM in concentration.

V. Turn-In Documentation: All property turn-ins must be made with a properly prepared disposal turn-in document, (DTID), DD Form 1348-1, in a minimum of four legible copies. If a delivery copy is required for the driver, the fifth copy will be annotated by the DRMO to indicate that receipt is acknowledged, subject to later verification of the turn-in. An official receipt document will be furnished to the generating activity when the verification has been accomplished. Generators of hazardous waste at RIA are required to furnish SIX (6) copies of each DTID due to local funding procedures. A separate DTID is required for each line item of property turned in. A line item is defined as any one quantity of property having the same stock number, description, condition code, and unit cost. The following is the minimum data required on the DTID to identify a line item. (See Enclosure 1). NOTE THE SPECIFIC INSTRUCTIONS IN SECTION VI FOR HAZARDOUS MATERIALS AND WASTES.

1. National Stock Number (NSN) or Local Stock Number (LSN) containing the Federal Supply Class (FSC) of the item. Enter in Card columns (cc) 8-20.

2. Unit of issue (each, pair, gallon, drum, etc.). Enter in cc 23-24.

3. Quantity. Enter in cc 25-29. (If the quantity is different than as entered in 25-29 at time of transfer to the DRMO, enter the actual quantity being transferred in Block Q.

4. Document number constructed as shown below. Enter in cc 30-43.

a. DoD Activity Address Code (DODAAC) of the turn-in activity. Enter in cc 30-35. For generating activities not assigned a DODAAC, the identification code used must use a MILSTRIP service assigned code (alpha) in the first position.

b. Julian Date DTID is prepared. Enter in cc 36-39.

c. Serial number assigned by the turn-in activity. Enter in cc 40-43.

5. Disposal Authority Code. M, N, or R as appropriate. Enter in cc 64. (See Enclosure 2).

6. Demilitarization code (See Enclosure 3). Enter in cc 65.

7. Supply condition code (See Enclosure 4). Enter in cc 71.

8. Acquisition price. Enter in cc 74-80. (Acquisition costs must be adjusted if the property being transferred to the DRMO is not complete or has major parts or components missing due to cannibalization. A list of the missing parts and costs must be furnished with the DTID.) If no price is on record, provide an estimate.

9. Turn-in activity and DODAAC. Enter in Block A.

10. DRMO and DODAAC. DRMO Rock Island, SX1345 or DRMO Savanna, SXS345.

11. Hazardous Code, if applicable. HM for Hazardous Material, HW for Hazardous Waste. Enter in Block C.

12. Category of Property, if requiring special handling as per DoD 4160.21-M, Chapter VI, i.e. foreign equity, non-appropriated fund, shelf-life, lost or abandoned personal property). If proceeds are to be deposited to other than DLA fund account, provide the reimbursement data for the amount to be credited. Enter in Block D.

13. Total Price. Enter in Block E.

14. Unit weight and cube, if available. Enter in Blocks I and J respectively.

15. Item name (nomenclature). Enter in block X.

VI. DRMO Acceptance of Accountability and Specific Instructions: The DRMO accepts accountability when an authorized DRMO employee signs and dates Block 8 of the DTID. Block 8 is signed upon verification of the property's identity, condition, and quantity. The DRMO will not accept DTIDs where the property's identity is questionable. If the supply condition code appears to be incorrect, receiving personnel will challenge its validity by contacting the generating activity. Quantity discrepancies will be annotated on the DTID by the DRMO receiver. The DRMO is accountable for only that quantity actually received.

VII. Completing the Disposal Turn In Document (DTID), DD Form 1348-1. (Attachment 1)

A. Hazardous Materials, (HM). Material that exhibits any one of the following four characteristics is defined as hazardous: 1) ignitable, 2) corrosive, 3) reactive, 4) toxic. Hazardous materials (HM) refers to UNUSED materials. All HM must be in containers that are non-leaking, safe to handle, and clearly marked to identify their contents. "HM" must be entered in Block C of the DTID. Hazardous materials must be properly identified on the DTID for the turn-in to be accepted. Most of the required information can be obtained from the Material Safety Data Sheet (MSDS) supplied by the manufacturer. **A copy of the MSDS is requested with the DTID for HM.** The requirements for identification are as follows:

1. NSN Identified Property

   a. Valid NSN

   b. Noun name as cataloged in the supply system.

2. LSN/MCN Identified Property

   a. Chemical name of hazardous components.

   b. Copy of the MSDS.

General names, such as "solvent, cleaning" will not be acceptable. Contact the DRMO prior to turn-in of HM. Since the DRMO does not have a conforming storage facility, it is usually necessary for the generator to retain physical custody of the HM, while the DRMO accepts the accountability for the material.

B. Hazardous Waste (HW). Rock Island Arsenal generators of Hazardous Wastes should refer to the Rock Island Arsenal Hazardous Waste Management Plan, July 1987, Appendix III, for

complete instructions regarding the turn-in of hazardous waste from RIA.

Hazardous Waste generally refers to used, contaminated, or unsalable hazardous material. In most cases, the DRMO will accept accountability, and the generator will retain custody until ultimate disposal. The same criteria as for HM DTID apply to Hazardous Waste, with the following additions:

1. Add HW to Block C in lieu of HM.

2. Chemical name of any hazardous and noun name of any non-hazardous contaminants.

3. Amounts of hazardous and non-hazardous contaminants, based on the user's knowledge or testing of the item, expressed in a range of content by percentage or parts per million as applicable.

Use the chemical name of the material. General names, such as "solvent, cleaning" or "Oakite solution" will not be acceptable. CONTACT THE DRMO PRIOR TO TURN-IN OF HW. Since the DRMO does not have a conforming storage facility it is usually necessary for the generator to retain physical custody of the HW while the DRMO accept the accountability for the material.

4. Waste Profile Sheet (Enclosure 5): This information is required before a hazardous waste item is accepted by the DRMO. The profile sheet should be filled out for each waste stream and a copy maintained on file. The generator should provide a copy at the initial turn-in and may reference this on the DTID with each subsequent turn in. Include a copy of any laboratory analysis done to substantiate the waste profile.

5. Labeling the Drum or Container: Each drum of hazardous waste must be tightly sealed in non-leaking, safe to handle condition. The drum must meet DOT and be marked with a hazardous waste label with all pertinent information included. (See Enclosure 6).

C. Batteries. Special handling or reporting requirements exist for four types of batteries normally turned in:

1. Secondary Storage (Lead-Acid). The most prevalent example of a secondary storage battery is a vehicle battery. These batteries use sulfuric acid as an electrolyte. Sulfuric acid is an acutely hazardous material. Accordingly, all the electrolyte must be drained from batteries, except for maintenance-free sealed batteries. The drained batteries must be stacked sideways or upside-down on pallets, and be banded to

the pallet. The maintenance-free sealed batteries should be kept separate from the drained batteries, and be banded right-side up on the pallets. The batteries must be turned in as a usable item, not scrap.

2. Nickel-Cadmium (Ni-Cad). Since most Ni-Cad batteries can be rebuilt into serviceable batteries, they are ultimately offered for sale as usable items. To assure item identity of Ni-Cads, the DTID should contain the manufacturer, type or part number of the Ni-Cad battery.

3. Silver Cell. Like Ni-Cads, silver cell batteries can be rebuilt into serviceable batteries. Therefore, they must be turned in as an item. Silver cell batteries which cannot be rebuilt remain valuable for the silver content. Accordingly, they must be treated as a precious metals bearing item.

4. Thermal. DRMO's cannot accept thermal batteries. Any thermal battery you need to dispose of must be reported to your military service's item manager.

D. Empty Containers. A container is considered empty if no more than one inch of residue remains on the bottom. The stock number placed on the DTID must apply to the container itself, not its previous contents. The last previous contents must be identified on each container. Fifty-five gallon drums must be sealed with bungs prior to turn-in, and they must be turned in on their sides, banded three to a pallet. Do not mix plastic and metal drums on the same pallet. There must be no more than one previous content per DTID.

1. If a container held a non-hazardous material, "NON-HZ" must be entered in Block C of the DTID.

2. If a container held a hazardous material and has been triple-rinsed appropriately, "NON-HZ/TRIPLE RINSED", must be entered in Block C of the DTID. Do not identify the previous contents on the DTID and obliterate identification of the previous contents on the containers themselves.

3. If a container held a hazardous material and has not been triple-rinsed, "HM" must be entered in Block C. In addition, the following must be identified as the nomenclature in Block X of the DTID:

a. Empty Containers

b. Common description of the container, i.e. 55 gal. drum, quart can, etc.

c. Common identification (generic name) of the previous contents, i.e. paint, lube oil, 1,1,1 trichloroethane.

4. If a container held an acutely hazardous material and has not been triple-rinsed appropriately, it is considered a hazardous waste. Contact the DRMO for a receipt in place of this type of container.

E. Transformers, Capacitors, and Transformer/Capacitor Fluids. Many transformers and capacitors use the Polychlorinated Biphenyls (PCB) as a cooling agent. PCB is a regulated hazardous waste. Materials with a PCB concentration of fifty parts per million (50 ppm) or greater is considered "PCB material". The DRMO does not have approved conforming storage for PCB materials, so they must be "received in place" as other hazardous materials. DRMO Rock Island can accept but turn-ins of all materials containing any PCBs must be accompanied by a laboratory analysis showing the PCB concentration, unless the concentration is known by the trade name of the fluid or if the capacitor is sealed. In addition, accountability will not be accepted if PCB material is not properly packaged or labeled (including PCB warning label). PCB concentration (in ppm) should be entered on the DTID in Block D.

VIII. DRMO Assistance. Personnel at DRMO Rock Island are ready to assist you in preparing DTIDs correctly and to train your personnel in thee segregation of scrap materials required for turn-in. If you need assistance in these or any other aspects of DRMO operations, you are invited to contact any of the below personnel:

Property Disposal Officer	Rebecca S. Leaf Chief, DRMO Rock Island & Savanna, AV 793-1617 Comm (309) 782-1617
Environmental/Hazardous Property	William L. LaFrenz Environmental Protection Specialist, AV 793-1617 Comm (309) 782-1617
Property Management Branch Arrangements for Turn-In ROCK ISLAND	Virginia Kimborough Property Mgmt Chief AV 793-1620 Comm (309) 782-1620
SAVANNA	William Lawson Mat'l Sorter & Classifier AV 585-8330 Comm (815) 273-8330
Reutilization & Sales Branch	Terri L. Moeller

	Chief, Reutilization & Marketing Branch AV 793-1619 Comm (309) 782-1619
Reutilization Screening/ Availability of Property Precious Metals	Kevin Buhlman Prop. Utilization Spec. AV 793-1619 Comm (309) 782-1619
Sales	Sally Maubach Prop. Marketing Spec. AV 793-1619 Comm (309) 782-1619

9150005294342 CN 140 W52H1B 0311 7821 NA A 4.66

W52H1B
ROCK ISLAND ARSENAL
ROCK ISLAND, IL 61299

SX1345
DRMO ROCK ISLAND
ROCK ISLAND, IL 61299

MARK FOR: HM

OIL, CUTTING

13 OZ
AEROSOL CN 130

RECEIVED BY AND DATE: DRMO Employee only
INSPECTED BY AND DATE: DRMO Employee only
WAREHOUSED BY AND DATE: DRMO Employee
WAREHOUSE LOCATION: DRMO USE

MSDS ATTACHED

SAMPLE

DD FORM 1348-1 1 MAR 74 EDITION OF 1 JAN 64 MAY BE USED UNTIL EXHAUSTED

SAMPLE HAZARDOUS MATERIAL DOCUMENT

6810 DR 1 W52H1B0320 0001 NA H 10

ROCK ISLAND ARSENAL
ROCK ISLAND, IL 61299
W52H1B

DRMO ROCK ISLAND
BLDG 154
SX1345

MARK FOR: HW

PROJECT: SMCRI-AOM-SC-8541
BLDG 220, BSMT 3 WING CT
POC: JOE SMITH X5555

TOTAL PRICE DOLLARS: 10

8500-007 515 LB

CLIN 4742
VS

55 GAL DRUM

CONTAMINATED OFF-SPEC WASTE OIL F005

55 GL DR 515 LB

RECEIVED BY AND DATE: DRMO Employee only
INSPECTED BY AND DATE: DRMO Employee only
WAREHOUSED BY AND DATE: DRMO Employee
WAREHOUSE LOCATION: DRMO USE

CONTAMINATED WITH 7.5% METHYL ETHYL KETONE (MEK)

DD FORM 1348-1 1 MAR 74 EDITION OF 1 JAN 64 MAY BE USED UNTIL EXHAUSTED

SAMPLE HAZARDOUS WASTE DOCUMENT

DISPOSAL AUTHORITY CODE (Enter in cc 64 on DTID)

M - Items on this transaction are IMM/ICP stocks and are being transferred to DRMO by authority of the responsible intentory manager.

N - Items on this transaction are not reportable by virtue of an exclusion to the Materiel Returns Program (MRP) of MILSTRIP or other specific criteria such as expended dollar value or condition limitations on excess reporting and are duly authorized to be transferred to the DRMO.

R - Items on this transaction have been reported to the IMM/ICP in accordance with MILSTRIP MRP procedures and have been directed to DRMO by the inventory manager.

DEMILITARIZATION CODES (Enter in CC 65 on DTID)

A	NON-MLI	Demilitarization not required.
B	MLI	Demilitarization not required.
C	MLI	Remove and/or demilitarize key points or lethal parts, components, and accessories.
D	MLI	Demilitarize by mutilation.
E	MLI	Demilitarize by burning, shredding, or pulping.
F	MLI	Demilitarization instructions to be furnished by Item Manager. Explicit demilitarization instructions must accompany the DTID for this code to be acceptable for turn-in.
G	MLI	Demilitarization required. DRMO cannot accept physical custody of the property with this demilitarization code.
H	MLI	Remove and/or demilitarize key points or lethal parts, components, and acccessories. Demilitarization not required in CONUS.
J	MLI	Demilitarization by mutilation. Demilitarization not required in CONUS.
K	MLI	Demilitarize by burning, shredding or pulping. Demilitarization not required in CONUS.
L	MLI	Demilitarize by mutilation, only for items identified as being a component of a key point on a major end item.
M	MLI	Demilitarize by mutilization, only for items identified as being a component of a key point of a major end item. Demilitarization not required in CONUS.
N	MLI or Non-MLI	Item with sensitive application/markings. Demilitarize by removing or destroying all name plates, label plates, meter faceplates, tags, stickers, documents, or markings which relate the item to a weapon system or sensitive end item application. Demilitarization will be performed by the generating activity prior to physical transfer to the DRMO. NOTE: Code N will not be used for Army and

Air Force managed items.

Q Strategic List Item - Mutilate to the extent necessary to preclude restoration to normal use and prevent recovery of essential component parts or assemblies. Mutilation requirements may6 be waived if purchaser elects to ship item to the U.S. under controls stipulated in the terms and conditions of sale.

X Requirements not determined by Item Manager. Not an acceptable code for turn-in to DRMO.

SUPPLY CONDITION CODES (Enter in CC 71 on DTID)

Code	Title	Definition
A	Serviceable (Issuable without Qualifications)	New, used, repaired, or reconditioned material which is serviceable and issuable to all customers without limitations or restrictions. Includes material with more than 6 months shelf-life remaining.
B	Serviceable (Issuable With Qualifications)	New, used, repaired or reconditioned material which is serviceable and issuable for its intended purpose but which is restricted from issue to specific units, activities or geographical areas by reason of its limited usefulness or short service-life expectancy. Includes materiel with 3-6 months shelf-life remaining.
C	Serviceable (Priority Issue)	Items which are serviceable and issuable to selected customers, but which must be issued before Cond. A & B materiel to avoid loss as a usable asset. Includes material with less than 3 months shelf-life remaining.
D	Serviceable (Test/ Modification)	Serviceable material which requires test, alteration modification, conversion or disassembly. (Does not include items which must be tested or inspected immediately prior to use).
E	Unserviceable (Limited Restoration)	Materiel which involves only limited expense or

		effort to restore to serviceable condition and which is accomplished in the storage activity where the stock is located.
F	Unserviceable (Repairable)	Economically reparable material which requires repair, overhaul, or reconditioning. (Includes repairable items which are radioactively contaminated.
G	Unserviceable (Incomplete)	Material requiring additional parts or components to complete the end item prior to issue.
H	Unserviceable (Condemned)	Material which has been determined to be unserviceable and does not meet repair criteria (includes condemned items which are radioactively contaminated.
S	Unserviceable (Scrap)	Materiel that has no value except for its basic material content. No stock will be recorded as on hand in Cond. Code S. This code is used only on transactions involving shipments to DRMO's. Materiel will not be transferred to Cond. Code S prior to turn-in if it Comm (309) 782-1617 was recorded in Cond A-H at the time it was determined excess. Material identified by NSN will not be identified by this code.

SAMPLE

WASTE PROFILE SHEETS

3944

General Directions: In order for us to determine whether we can lawfully and safely transport, treat, and dispose of your waste material, we must obtain certain information about the chemical and physical properties of the waste and its chemical composition. Please be complete in your answers; if your response is "none" or "not available", so indicate. Answers must be printed in ink or typewritten and the completed form must be signed. Please make a copy of this form for your records.

(1.) Generator Name: Rock Island Arsenal (RIA) EPA Generator No.: IL5210021833

(2.) Generating Facility Complete Address:
Commander, Rock Island Arsenal, ATTN: SMCRI-SEM (Dr. Shore) Rock Island, IL 61299-5000

(3.) Authorized Company Representative: Dr. William Shore Title: Environmental Coordinator

(4.) Phone Number: (309) 782- 7855

(5.) Emergency Contact RIA Fire Department Title: Shift Chief Phone: (309) 782-5148

(6.) General Description of The Waste: Oil (contains 1,1,1, Trichloroethane)

(7.) Process Generating Waste: Spent oil (cutting and Degreasing)

(8.) Anticipated volume 66 [X] Gallons [ ] Tons [ ] Cubic Yards [ ] Drums, or [ ] Other
Per: [ ] Day [ ] Week [ ] Month [X] Year, or [ ] Other

(9.) Waste Properties:

(a.) Vapor pressure (in mm of Hg @ 25 °C)

(b.) Flash Point 141-199 [X] °F [ ] °C [ ] Closed Cup [ ] Open Cup

(c.) Phases/layers: [X] Single [ ] Bilayered [ ] Multilayered

(d.) Physical State @ 20 °C: [ ] Solid [X] Liquid [ ] Semi-Solid [ ] Powder [ ] Other

(e.) pH 6-8 (f.) Solubility (g/100g H_2O) @ 20 °C:

(g.) Density: 0.7-0.8 [ ] lb./ft.^{3} [ ] lb./yd.^{3} [ ] lb./gal. [X] g/cc

(h.) Odor: [ ] Strong [X] Mild [ ] None

(i.) Reactivity: Water [ ] Yes [X] No Autopolymerizable [ ] Yes [X] No Shock Sensitive [ ] Yes [X] No
Pyrophoric [ ] Yes [X] No Thermally Sensitive [ ] Yes [X] No Explosive [ ] Yes [X] No

(10.) Complete waste composition (with ranges—indicate % or ppm.) Attach Additional Pages if Necessary

ORGANIC	INORGANIC
Oil 75-95%	
Water and Dirt 1-5%	
Trichloroethane 1-5%	

SAMPLE

(11.) Sample Included [ ] Yes [X] No

(12.) Is this waste a "Hazardous Waste" as defined by regulations of the U.S. Environmental Protection Agency pursuant to 40 CFR § 261 of the Resource Conservation and Recovery Act? Yes

(13.) Manifest Information

Proper USDOT Shipping Name	USDOT Hazard Class	UN or NA No.	USEPA Haz. Code	USEPA Haz. Waste No. (Type)
Hazardous Waste Liquid, NOS	Combustable Liquid	NA9189	T	F001

(14.) This waste contains: Biological Materials [ ] Yes [X] No Pathogens [ ] Yes [X] No Etiological Agents [ ] Yes [X] No
Radioactive Materials [ ] Yes [X] No PCB's [ ] Yes [X] No Dioxin [ ] Yes [X] No

If yes, specify type (if applicable) and concentration:

(15.) Have you obtained toxicity studies of this waste material? No If so, please attach a copy of the results.

(16.) Required personal protective equipment & procedures: 5

I hereby certify that the above and attached description is complete and accurate to the best of my knowledge and ability to determine, that no deliberate or willful omissions of composition or properties exists, and that all known or suspected hazards have been disclosed.

Generator's Authorized Signatory
William Shore Title Environmental Coordinator Date 8/24/90

HIN 4742 4.75/gal

HAZARDOUS WASTE

FEDERAL LAW PROHIBITS IMPROPER DISPOSAL

IF FOUND, CONTACT THE NEAREST POLICE, OR
PUBLIC SAFETY AUTHORITY, OR THE
U.S. ENVIRONMENTAL PROTECTION AGENCY

PROPER D.O.T.
SHIPPING NAME_____UN OR NA#_____

GENERATOR INFORMATION:

NAME_____

ADDRESS_____

CITY_____STATE_____ZIP_____

EPA
ID NO._____

EPA
WASTE NO._____

ACCUMULATION
START DATE_____

MANIFEST
DOCUMENT NO._____

HANDLE WITH CARE!

CONTAINS HAZARDOUS OR TOXIC WASTES

STYLE WM-6

© LABELMASTER, CHICAGO, IL 60646

HAZARDOUS WASTE LABEL

APPENDIX C-2

HAZARDOUS WASTE DISPOSAL INFORMATION (PFN-175)

HAZARDOUS WASTE MANAGEMENT

POINTS OF CONTACT

OFFICE NAME	OFFICE SYMBOL	TELEPHONE NUMBER
Environmental Management	SMCRI-SEM	27855/27856 27926/27907 Emergency*
Fire Prevention and Protection Division	SMCRI-EHF	Emergency 117; 25148
Engineer Resource Management Division	SMCRI-EHC	22801
Logistics Support Directorate	SMCRI-DLP SMCRI-DLM SMCRI-DLS-W SMCRI-DLM-C SMCRI-DLM-R	21591 21633 25083 21607 21608/21604
Defense Reutilization and Marketing Office	DRMO-RI	21618/21619
Industrial Hygiene Office	HSXP-RI	25722/26018
Safety Office	SMCRI-SF	21380/21381

*For a push button phone, call 25602, page number 674, or for a dial phone, call the RIA Operator, give her your name and phone number, and ask her to page number 674 to give Dr. William Shore, Dr. David Foss, Ms. Carol Schroeder, Mr. Don Rockwell, or Ms. Fran Wildman your message. Your call will be returned as soon as possible.

EMERGENCY SYSTEMS

1. PERSONAL PROTECTION:

a. Personal protective clothing and equipment (PPC&E): safety showers, eye wash fountains, breathing apparatus. Know the location of proper PPC&E and assure inspection of PPC&E is accomplished. Become familiar with the hazards of substances in your areas before an emergency occurs. Recommendations for specific types and manufacturers names of PPC&E can be obtained from the Industrial Hygiene Activity provided the chemical analyses for the wastes have been made available.

b. Fire extinguishers: Know the location and assure inspections are accomplished.

2. EVACUATION ROUTES: Be aware of the evacuation routes.

3. ALARMS AND COMMUNICATION SYSTEMS: Sound fire alarms, phone Fire Department, radios, pagers.

CLEANUP PROCEDURES

1. RIA has no centralized cleanup team. The cost center in which the spill occurred is responsible for the cleanup of spills. Only properly HW trained personnel are permitted to cleanup spills.

2. Cooperate with the Fire Department. The Fire Department is at the site of the spill to contain the spill only and not to clean up the spill.

3. Proper PPC&E must be used.

4. Use open top drums, DOT 17H or 17H-PL, for solid material. Use bung hole, DOT 17E, for liquids.

5. Label drums properly before hazardous waste is placed inside them.

6. Turn-in documentation must be submitted within 3 days of filling the drum.

7. Move the drums to proper HW satellite site or accumulation area.

Job Assignments Which Require Hazardous
Waste (HW) Training in accordance with the
Resource Conservation and Recovery Act (RCRA)

1. Personnel who directly handle HW in any quantity. This will include hazardous material (HM) users if the HM becomes a HW as a result of the operations they perform. Examples are as follows:

a. Employees who are responsible for cleaning out the HW sludge that builds up in the bottom of paint booths or plating baths.

b. Persons who use the HM 1,1,1-Trichloroethane (TCEA) in small quantities to clean parts, and subsequently must dispose of the TCEA that has become a HW because it is contaminated with oil, grease, or particulate matter.

2. Personnel responsible for labeling drums to be used in the collection of HW.

3. Personnel responsible for preparing disposal documentation.

4. Personnel responsible for cleanup of spills of HW or HM which, when spilled, become a HW. See Title 40 of the Code of Federal Regulations 265.1(c)(11). The HM user may immediately contain or treat a spill of HW or HM which, when spilled, becomes a HW. Only the HM users who are trained may be involved in the cleanup of the HW. Otherwise direct supervision by an individual having received HW training is required.

5. Personnel responsible for transporting HW by either forklift or truck.

6. Personnel responsible for sample collection and laboratory analysis of HW.

7. Personnel responsible for inspections related to the management of HW.

8. The supervisors or foremen of any personnel identified above.

9. The members of the Installation Response Team and the Hazardous Waste Management Board.

10. Personnel responsible for HW Satellite Site and Accumulation Areas.

11. Hazardous Material/Hazardous Waste Coordinators and Alternate.

HAZARDOUS WASTE DISPOSAL PROCEDURES

1. Responsibilities.

a. Generating organizations will:

(1) Obtain proper drums in which to place hazardous waste. Empty hazardous material (HM) drums may be used to dispose of the used HM as a hazardous waste (HW) or drums can be ordered by the RIA generating unit on a DD Form 1348-6. Instructions for the completion of the form to request drums are published in RIAR 725-9. Upon completion of the DD Form 1348-6 (see example page 11), the generator will mail or deliver the DD Form 1348-6 to SMCRI-DLM (building 131, first floor, east end), for processing. After the form is processed SMCRI-DLS-WV, extension 25083, will forward the drums. Contractor personnel must obtain empty drums through their own supply channels.

(2) The following drum types and stock numbers should be used for hazardous waste:

Drum Type	Gallons	Stock Number
17H-open head	55	8110-00-X86-3534
17E-tight head	55	8110-00-X86-2832
steel overpack	85	8110-01-101-4055
plastic liner	55	39428-4463T2

(3) Vendor owned containers must not be used for the disposal of HW. There should not be vendor owned drums in the system, however some vendor owned containers are still present. Vendor owned containers are identified with a purchase order number and a deposit designator such as "Deposit Drum $20", "Deposit Drum", "Deposit", or "$20" ($20 is used as an example, the dollar amount may vary).

(4) Proper drums to be used for hazardous waste must not have dents, or rust spots and should not be a 1,1,1 trichloroethane (TCEA) drum unless the HW is TCEA.

(5) Assure that markings on drums other than the DOT specification number of the drum are painted over to obliterate them in preparation for the RIA prescribed marking. HM markings may be left on drums only when the drums are reused to dispose of the same product after use.

(6) Assure that before HW is placed in drums a title of "HAZARDOUS WASTE", disposal or recycle, the EPA number, the waste name, the Personal Protection Code, the EPA Reportable Quantity, the eight-digit control number, and the start date is marked on the drum. The fill date will be annotated on the day the drum is filled. Both start and fill dates must be annotated even

if the filling of the drum is accomplished all in one day. The marking format will be as shown below, one under the other on two sides of the drum:

HAZARDOUS WASTE
DISPOSAL OR RECYCLE
EPA NUMBER
WASTE NAME
PERSONAL PROTECTION CODE
REPORTABLE QUANTITY
EIGHT-DIGIT CONTROL NUMBER
START DATE: month-day-year
FILL DATE: month-day-year

(a) SMCRI Form 444 is a pressure sensitive, self-adhesive label specifically designed to meet the marking requirements of HW (page 14). A permanent ink marker will be used to enter all information on the label. The drum surface will be cleaned and dried before the backing is peeled off and the label is placed on the drum. Two labels will be positioned on opposite sides of the drum in the top one-third region of the drum or the bottom one-third, if the label is too large for the top one-third. The specified positioning will allow more visibility of the contents of the drum and prevent damage to the labels by mechanical drum handlers. A diagram of the positioning of the form on a 55-gallon drum is shown on page 17.

(b) The EPA numbers are listed under "The Hazardous Waste Inventory" (pages 18-22). Additional numbers will be provided by the Environmental Coordinator as necessary.

(c) The waste names and the proper drum for that waste are listed under "Hazardous Waste Inventory and Disposal Drums" (pages 18-22). Additional names will be assigned by the Environmental Coordinator as necessary.

(d) Personal Protection Codes are listed under "Personal Protection Equipment (PPE) Required for Handling of Hazardous Waste" (pages 18-22). The codes are to be placed on the label for use when the material spills or leaks after the drums are filled. Additional information will be assigned by the Environmental Coordinator as necessary.

(e) The reportable quantity is listed by EPA number in "Reportable Quantities (RQ) for Hazardous Waste" (pages 18-22). The RQ is that quantity of the material which when spilled and released to the environment must be reported to EPA. All spills of this quantity or greater should be reported to the Fire Department, extension 117/25148, to initiate a spill response. The Environmental Coordinator will then call EPA when a reportable quantity has been spilled.

(f) The eight-digit control number to be assigned by the cost center foreman will consist of the four-digit cost center code, the last digit of the year, and a sequentially assigned number from 001 to 999. When 999 is

reached, revert back to 001. Each cost center code will have their own set of sequentially assigned numbers for the last three digits of the control number. If a cost center code contains more than four digits, enter only the first four digits. This eight-digit control number must also be annotated in block F of the DD Form 1348-1, DOD Single Line Item Release/Receipt Document. The instructions for completion of the DD Form 1348-1 are on page 15 and an example of a completed DD Form 1348-1 is on page 16.

(7) Assure that upon filling a drum of HW, the drum will be weighed immediately, quantity in gallons recorded, and the drum transported to the designated HW satellite accumulation area within the cost center. Prepare drums for technical inspection at sites by assuring that markings are visible, drums are placed in rows of only two drums side by side, when stored in a Hazardous Waste Satellite Site Area the drums should be placed three to a pallet, banded, and the pallet placed over containment pans, and a walkway is left between rows of drums or pallets. Assistance may be requested from SMCRI-QAM-S, extension 21568/21569, in locating a scale in which the drums can be weighed.

(8) Coordinate with the Environmental Coordinator on the potential for recycling waste products containing 1,1,1 trichloroethane, petroleum naphtha (mineral spirits), kerosene, or other petroleum distillates.

(a) If the waste can be recycled, the recycle block on SMCRI Form 444 will be marked. For example, a drum of recycle liquid 1,1,1 - trichloroethane will be labeled as:

HAZARDOUS WASTE - RECYCLE
EPA NUMBER - F001
TCEA LIQUID
PERSONAL PROTECTION CODE - 5
REPORTABLE QUANTITY - 1
EIGHT-DIGIT CONTROL NUMBER
START DATE: month-day-year
FILL DATE: month-day-year

(b) The word recycle will be annotated in the DD Form 1348-1 in block W.

(9) Assure that within three days after filling and annotating the fill date on a drum, or after identification of an unmarked drum, the disposal documentation is submitted to SMCRI-SEM (Bldg 210, Rm 207). A DD Form 1348-1 will be submitted for each drum of HW.

(a) The stock number to be entered on the DD Form 1348-1 will be the stock number of the HM that after use became the HW. If the HM stock number is unknown, SMCRI-DLM-C, extension 21607, will provide assistance in identifying the stock number. If HW cannot be traced directly back to a HM, leave blank.

(b) Blocks 36 - 43 will not be completed by the generator.

(c) The completed DD Form 1348-1 will be signed in Block Y by the cost center foreman.

(d) Abbreviations to be used in disposal documentation are as follows:

HW - hazardous waste
HM - hazardous material
TCEA - 1,1,1 - trichloroethane
IWTF - Industrial Wastewater Treatment Facility
BT - bottle
BX - box
CB - carboy
CY - cylinder
DR - drum
EPA - Environmental Protection Agency
EA - each
GL - gallon
JR - jar

(e) A log of all HW disposal actions will be maintained by the cost center foreman. The log will contain the eight-digit control number, the document number, a brief description of the contents, the start date, the fill date, and the date the drum was removed from the satellite site to Building 242 for final disposal. The document number will be annotated on the copy to be returned to the cost center foreman after the inspection by SMCRI-CR and the Defense Reutilization and Marketing Office (DRMO). The document number should be included in the log when the copies are returned from SMCRI-CR. The log will be instrumental in tracking the disposal history of HW. A copy of the log must be furnished to the Environmental Coordinator semi-annually upon request.

(10) The filled drums should be placed on pallets and moved to your designated Hazardous Waste Satellite or Accumulation Site. The pallets should be placed over the metal containment pans, with no more than three drums to a pallet. The drums must be strapped with metal banding or 3 wraps of nylon fiber reinforced tape, prior to transportation by LSG. Duct tape should not be used.

(11) Accompany SMCRI-CR and DRMO on technical inspections of HW. Correct deficiencies, if necessary.

(12) If an unmarked drum is discovered in your area, call the Environmental Coordinator immediately for assistance in identification and marking instructions.

(13) Assure that under no circumstances will outdoor storage of unprotected drums of HW be permitted. Each building supervisor will be assigned responsibility for the vicinity of his or her building. Plastic lids may be used to protect drums from the elements. The NSNs for the lids are 8010-01-226-9711 for DOT 17E or 5B and 8010-01-226-9713 for 17H drums.

b. The Environmental Coordinator of the Science and Engineering Directorate, SMCRI-SEM, will:

(1) Review all 1348-6 turn-in documents.

(2) Monitor the entire HW disposal operation.

(3) Update SMCRI Forms 444, as required.

(4) Inform the EPA of all reportable quantities spilled and released to the environment.

(5) Provide technical assistance in:

(a) The identification of HWs that can be recycled. Verification will be provided SMCRI-CR that drums marked "Recycle" were actually inspected.

(b) The identification of the material in unmarked drums.

(c) Sampling and identification of drums of waste oil for possible 1,1,1 trichloroethane contamination.

c. The Contract Administration Office, SMCRI-CR, will:

(1) Review DD Forms 1348-1 documents received from SMCRI-SEM.

(2) Obtain a document control number telephonically from SMCRI-DLM-R, extensions 21608/21604. This number will be annotated in blocks 36 - 43 of the DD Form 1348-1. A telephonic notice of cancellation of the document number will be made if the paperwork is cancelled.

(3) Conduct technical inspections with DRMO of HW ready for disposal, and notify the generator of required changes, if necessary. One copy of the DD Form 1348-1 will be given to the generator at the time of the inspection.

(4) Provide one copy of DD Form 1348-1 to SMCRI-SEM and four copies to DRMO.

(5) Arrange with Logistics Support Group (LSG) the transportation of the HW from the generating areas to the hazardous waste storage facility, building 242.

d. The Defense Reutilization and Marketing office will:

(1) Review DD Forms 1348-1 submitted for compliance with DRMO requirements.

(2) Conduct technical inspections of HW in generating areas prior to acceptance of accountability. Inform the SMCRI-CR representative of any deficiencies found.

(3) Make all arrangements necessary to procure disposal contractors to haul HW from building 242 to permitted HW disposal or recycle facilities.

(4) Provide SMCRI-SEM with detailed descriptions that will track DD Forms 1348-1 to the manifests. Copies of the manifests will also be provided.

(5) Maintain liaison with the Environmental Coordinator on all aspects of the reutilization and disposal process of RIA HM/HW.

e. The Directorate of Logistics will:

(1) Process requests for empty drums and make arrangements with LSG for the delivery of the drums to generators.

(2) Provide assistance in identifying stock numbers of HMs.

(3) Provide a document number to SMCRI-CR for the DD Forms 1348-1.

f. The Manufacturing Equipment Supply Branch of the Quality Assurance Directorate, SMCRI-QAM-S, will provide assistance in locating scales to weigh drums.

SAMPLE DD FORM 1348-6 FOR HAZARDOUS WASTE DRUMS

DOCUMENT IDENTIFIER	ROUTING IDENTIFIER	M&S	ITEM IDENTIFICATION* (NSN, FSCM/Part No., Other) FSCM	PART NUMBER	UNIT OF ISSUE	QUANTITY	DOCUMENT NUMBER REQUISITIONER
Z0	B09		81100	0X8635 3 4	DR	xxxx1	xxxxx

DOCUMENT NO. (Cont.) DATE	SERIAL	FORM	SUPPLEMENTARY ADDRESS	SIGNAL	FUND CODE	DISTRIBUTION CODE	PROJECT CODE	PRIORITY	REQUIRED DELIVERY DAY OF YEAR	ADVICE CODE	BLANK
xxxx	xxxx	xxR		A	VS	xxx		09	xxx		

REJECT CODE (FOR USE BY SUPPLY SOURCE ONLY) 65	66

IDENTIFICATION DATA

*1. MANUFACTURER'S CODE AND PART NO. (When they exceed card columns 8 thru 22)

2. MANUFACTURER'S NAME

3. MANUFACTURER'S CATALOG IDENTIFICATION

4. DATE (YYMMDD)

5. TECHNICAL ORDER NUMBER
XXXXXX XXXXXXX

6. TECHNICAL MANUAL NUMBER

7. NAME OF ITEM REQUESTED
DOT Disposal drums

8. DESCRIPTION OF ITEM REQUESTED
Empty DOT drums for disposal of hazardous waste solid
Type 17H open top

8a. COLOR

8b. SIZE

9. END ITEM APPLICATION

9a. SOURCE OF SUPPLY

9b. MAKE

9c. MODEL NUMBER

9d. SERIES

9e. SERIAL NUMBER

10. REQUISITIONER (Clear text name and address)

11. REMARKS

DD Form 1348-6, FEB 85 *Edition of Apr 77 may be used until exhausted.*

U.S. GPO: 1985-485-304

DOD SINGLE LINE ITEM REQUISITION SYSTEM DOCUMENT *(MANUAL - LONG FORM)*

HAZARDOUS WASTE

☐ DISPOSAL ☐ RECYCLE

EPA NUMBER: ___ ___ ___ ___

WASTE NAME:

PERSONAL PROTECTION CODE: ___

EPA REPORTABLE QUANTITY: ___ ___ ___ ___ lb(s)

Report any discharge in excess of the above marked Reportable Quantity or one gallon to the RIA Fire Department, (309) 782-5148, and to the Environmental Coordinator SMCRI-SEM, (309) 782-~~[illegible]~~ 7855/7854/7926, IMMEDIATELY.

CONTROL NO.: ___ ___ ___ ___ ___ ___ ___

START DATE: ___ - ___ FILL DATE: ___ - ___

Commander, Rock Island Arsenal
ATTN: SMCRI-SEM, Rock Island, IL 61299-5000
(309) 782-~~[illegible]~~ 7855/7854/7926, Pager: Dial 0, Page 674

SMCRI FORM 444, 1 NOV 88 REPLACES EDITION OF 1 OCT 87, WHICH WILL BE DESTROYED

INSTRUCTIONS FOR COMPLETION OF DD FORM 1348-1 FOR DISPOSAL OF HAZARDOUS WASTE

BLOCK	INSTRUCTIONS
8-11	Enter Federal Supply Class, FSC if known, 6810 if unknown
12-20	Enter remainder of stock number if known, if unknown leave blank
23-24	Enter unit of issue
25-29	Enter quantity
30-35	Enter "W52H1B"
36-43	SMCRI-DLM-R will furnish this
61	Enter "N"
64	Enter "A"
69	Enter "H"
74-80	Enter the original purchase price if known or $20.00 per drum if unknown
A	Enter "Rock Island Arsenal Rock Island W52H1B"
B	Enter "DRMO Rock Island Bldg 154 SX1345"
C	Enter "HW" for hazardous waste Enter "HM" for recycle waste
D	Enter office symbol and cost center code of unit turning in, item, exact location of material (bldg. no., floor, etc.), POC and extension number.

BLOCK	INSTRUCTIONS
F	Enter the eight-digit control number assigned by the foreman.
I	Enter the unit weight of the drum.
U	Enter waste code number and fill date.
W	Enter "Recycle" if applicable.
X	Enter the waste name, a colon, and a detailed description of the contents and contaminants. Enter the hazardous characteristics if known.
Y	The foreman must sign in this block. Type in the appropriate signature block.
(LOWER HALF)	
2	Enter size and type of container, e.g. "55 GL DR-Metal" for a metal 55 gallon drum.
3	Enter total weight in pounds.
6	Enter the total number of gallons.
7	Technical inspector will enter signature and date the DD1348-1 was received. (DRMO ONLY)
8	Technical inspector will enter signature and date the HW was inspected. (DRMO ONLY)
AA-GG	Used by EC for profile number.

Doc Ident	Stock Number (FSC)	Stock Number (NIIN)	Quantity	Document Number (Requisitioner)	Date	Serial	Mod	Supplementary Address	Distribution	Project	Priority	Req Del Date	Adv	Unit Price
A5AB09	6810	004765613	DR 00005	W52H1B		HW					N	A	H	20.00

Rock Island Arsenal ROCK ISLAND, IL. W52H1B	DRMO Rock Island Bldg. 154 SX1345	Mark For HW	Project SMCRI-XXX-XX, XXXX Bldg XXX, Xrd Floor John Doe, Ext XXXXX

Drum Number	Type of Cargo	Unit Pack	Unit Weight	Unit Cube	UFC	Rate	Freight Rate	Document Date	Mat Dmg	Quantity
8000-1002									H/X	

Substitute Data Item Originally Requested	Freight Classification Nomenclature	
Funded Qty	Fill Date: EPA Waste Code#	
HIN	Item Nomenclature TCEA LIQUID: CONTAMINATED WITH*	Signature Block, Foreman

Shipper	Type of Container(s)	Total Weight	Receiver		
Unit Cost Code	55 GL DR Metal	550 LB			
Packed by and Date	**No. of Containers**	**Total Cube**	**Warehoused by and Date**	**Warehouse Location**	
MILSBILS VS Profile# W52H1B		54 GL		HØ1Ø1-	

Remarks

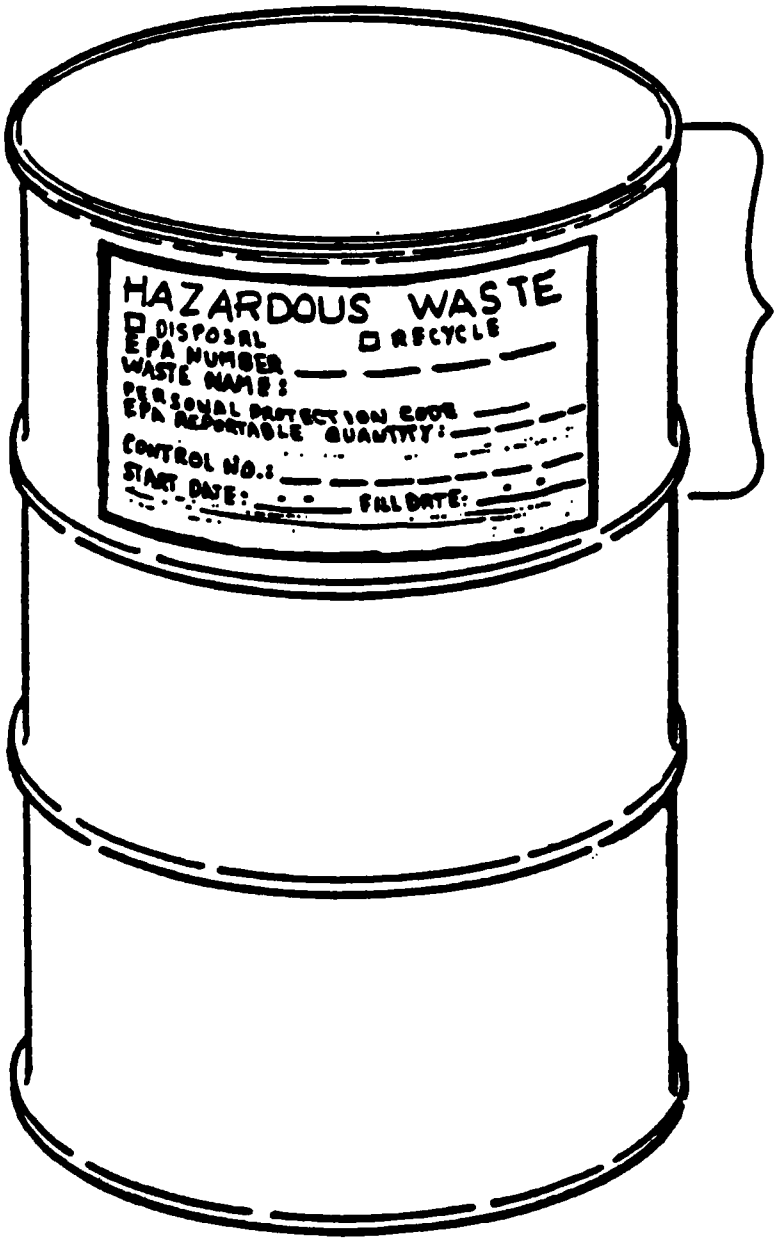
*75% OIL AND GREASE

First Destination Address	Date Shipped	

13 Transportation Chargeable To	14 Loading, Ang. or Receiver's Signature (and Date)	15 Receiver's Document Number

DD FORM 1348-1A, SEP 87 (BLUE) Jun 86 edition may be used. FORM APPROVED OMB NO 0704-0188 DOD SINGLE LINE ITEM RELEASE/RECEIPT DOCUMEN

XR1 D PQ ZØ CC60-W CC62-2 A HX P



TOP ONE THIRD REGION OF THE DRUM *

*IF THE LABEL IS TOO LARGE FOR THE TOP ONE THIRD, PUT THE LABEL ON THE BOTTOM ONE THIRD. <u>DO NOT</u> PLACE THE LABEL IN THE MIDDLE.

HAZARDOUS WASTE INVENTORY

ITEM NO	HAZARDOUS WASTE NAME	EPA NO(S)	RQ(lbs)	HAZARDOUS COMPONENTS	TYPE OF DOT DISPOSAL DRUM	PPE CODE
1	Alkaline Cleaner	D002	100	Corrosive	17H-PL*	1
2	Alkaline Derust	D002 & D008	1	Corrosive and Lead	17H-PL	1
3	Black Oxide	D002	100	Corrosive	17H-PL	1
4	Blankrola	F001	1	Petroleum Naphtha, 75% & Perchloroethylene, 25%	17E	5
5	Chlorinated Solvent	F001	1	Methylene Chloride or Perchloroethylene	17E	5
6	Chrome Bricks	D002 & D007	1	Corrosive and Chromium	17H-PL	1
7	Chrome Strip Sludge	D002 & D007	1	Alkaline Chromium	17H-PL	1
8	Chromic Acid	D002 & D007	1	Corrosive Chromium	17H-PL	1
9	Corrosive Liquid	D002	100	Corrosive	17H-PL	1
10	Corrosive Solid	D002	100	Corrosive	17H-PL	2

*Plastic Liner

ITEM NO	HAZARDOUS WASTE NAME	EPA NO(S)	RQ(lbs)	HAZARDOUS COMPONENTS	TYPE OF DOT DISPOSAL DRUM	PPE CODE
11	Cyanide Quench Cleanup	D003	100	Cyanide Salts	17H	1
12	Cyanide Quench, Oil	F010	10	Cyanide	17E	1
13	Cyanide Quench Sludge, Oil	F010	10	Cyanide	17H	1
14	Cyanide Quench, Water	F012	10	Cyanide	17E	1
15	Cyanide Quench Sludge, Water	F012	10	Cyanide	17H	1
16	Cyanide Salts	D003	100	Cyanide salts	17H	2
17	Cyanide Bricks	D003	100	Cyanide salts	17H	2
18	Flammable Liquid	D001	100	Flammable, flash point less than 100 F	17E	9
19	Flammable Liquid, Corrosive	D001	100	Flammable	17H-PL	9
20	Flammable Solid	D001	100	Flammable	17H	9
21	Furnace Dust	D006, D007 & D008	1	Furnace Dust, Cadmium, Chromium, and Lead	17H	8

ITEM NO	HAZARDOUS WASTE NAME	EPA NO(S)	RQ(lbs)	HAZARDOUS COMPONENTS	TYPE OF DOT DISPOSAL DRUM	PPE CODE
22	HW Liquid	Varied		Varied	17E	1
23	HW Solid	Varied		Varied	17H	2
24	Marteemp/ Heat Treat Salt	D001	100	Oxidizer	17H	6
25	Oakite Chriscoat	D002	100	Corrosive	17H-PL	1
26	Oakite LNC	D002	100	Corrosive	17H-PL	1
27	Oxidizing Material	D001	100	Oxidizer	17H - Solid 17E - Liquid	6
28	Paint Booth Filters	D007, D008	1	Chromium, Lead	17H	8
29	Painting Sludge	D007 & D008, or Varied	1	Chromium, Lead	17H	8
30	Paint Stripper, Corrosive	F004, D007 & D008	1	Cresols or Chloroacetic Acid, Chromium, and Lead	17H-PL	1
31	Paint Thinner	F003	100	Acetone, Ethyl Acetate, Methyl isobutyl ketone, Xylene	17E	3

ITEM NO	HAZARDOUS WASTE NAME	EPA NO(S)	RQ(lbs)	HAZARDOUS COMPONENTS	TYPE OF DOT DISPOSAL DRUM	PPE CODE
32	Paint Thinner	F005	100	Methyl Ethyl Ketone, Toluene	17E	3
33	Paint Waste	D007, D008	1	Pigments	17E	8
34	Paint Waste w/Solvents	D001, F005,D008	1	Solvents and Pigments	17E	1
35	Petroleum Naphtha	D001	100	Petroleum Naphtha	17E	9
36	Petroleum Naphtha, Recycle	D001	100	Petroleum Naphtha	17E	9
37	Phosphate Sludge	D002 & D006	1	Corrosive and Cadmium	17H-PL	1
38	Pickel Liquor	K062	1	Hydrochloric Acid, Toxic Waste	17H-PL	10
39	Plating Cleanup	D002 & D006 or D007	1	Corrosive and Cadmium, Chromium Copper, Nickel, or Tin	17H-PL	7
40	Plating Liquid	D002 & D006 or D007	1	Corrosive and Cadmium, Chromium, Copper, Nickel, or Tin	17H-PL	1

ITEM NO	HAZARDOUS WASTE NAME	EPA NO(S)	RQ(lbs)	HAZARDOUS COMPONENTS	TYPE OF DOT DISPOSAL DRUM	PPE CODE
41	Plating Sludge	D002 & D006 or D007	1	Corrosive and Cadmium, Chromium, Copper or Nickel	17H-PL	1
42	Plating Wastewater Treatment Sludge	F006	1	Corrosive, Cadmium, Chromium, Copper Nickel	17H	1
43	Poisonous solid, Corrosive	Varied & D002	1	Poison and Corrosive	17H-PL	1
44	Range Dust	D008	1	Lead	17H	8
45	Range Sand	D008	1	Lead	17H	8
46	Stop-off Wax	D007 & D008	1	Chromium and Lead	17H	8
47	TCEA Liquid	F001	1	1,1,1 Trichloroethane	17E	5
48	TCEA Liquid, Recycle	F001	1	1,1,1 Trichloroethane	17E	5
49	TCEA Sludge	F001	1	1,1,1 Trichloroethane	17H	5
50	Thinners/Solvents	F005	100	Flammable liquids	17E	3
51	Toxic Liquid	Varied	1	Poison B	17E	7
52	Toxic Solid	Varied	1	Poison B	17H	8

PERSONAL PROTECTION EQUIPMENT (PPE) REQUIRED FOR ROUTINE HANDLING OF HAZARDOUS WASTE *,**

PERSONAL PROTECTION CODE	USEPA HAZARDOUS WASTE CHARACTERIZATION	USEPA HAZARDOUS WASTE NUMBER	PERSONAL PROTECTION EQUIPMENT (PPE)
1	Corrosive Liquids, (acids and bases)	D002	Nonpermeable Gloves (Long) Nonpermeable Foot Protection Nonpermeable Apron
	Reactive Liquids	D003	Chemical Goggles Face Shield Respirator Disposable, Full Body, Protective Clothing
2	Corrosive Solids	D002	Nonpermeable Gloves (Long) Chemical Goggles
	Reactive Solids	D003	Face Shield Respirator Disposable, Full Body, Protective Clothing
3	Ignitable Liquids	D001, F003, F005	Nonpermeable Gloves Nonpermeable Foot Protection Respirator
4	Ignitable Solids	D001	Nonpermeable Gloves Respirator
5	Chlorinated Hydro-carbons	F001, F002	Nonpermeable Gloves Nonpermeable Foot Protection Full Face Piece Cartridge Respirator
6	Oxidizers	D001	Nonpermeable Gloves Nonpermeable Foot Protection Chemical Goggles Face Shield Respirator Disposable, Full Body, Protective Clothing

PERSONAL PROTECTION EQUIPMENT (PPE) REQUIRED FOR ROUTINE HANDLING OF HAZARDOUS WASTE (CONT) *,**

PERSONAL PROTECTION CODE	USEPA HAZARDOUS WASTE CHARACTERIZATION	USEPA HAZARDOUS WASTE NUMBER	PERSONAL PROTECTION EQUIPMENT (PPE)
7	Toxic Liquids	D004-D100	Nonpermeable Gloves Nonpermeable Foot Protection Chemical Goggles Face Shield Respirator Disposable, Full Body, Protective Clothing
8	Toxic Solids	D004-D100	Same as for Toxic Liquids
9	Flammable Liquids***	D001	Nonpermeable Gloves Nonpermeable Foot Protection Full Face Piece Respirator
	Flammable Solids***	D001	
10	Hazardous Waste Liquids	K062, F006	Nonpermeable Gloves Nonpermeable Foot Protection Respirator Disposable, Full Body, Protective Clothing
11	Hazardous Waste Solids	F006	Same as for Hazardous Waste Liquids

*NOTE: Any spill in a confined space will require an on-site determination by SMCRI-SE, SMCRI-SF, SMCRI-EHF, and HSXP-FS-RIA of PPE requirements.

**NOTE: Actual "fire" conditions require the use of self contained breathing apparatus.

***Flammable (flash point <100 F) substances are also classified as ignitable (flash point <140 F)

APPENDIX D

PRETREATMENT PERMIT - BUILDING 212

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
WATER POLLUTION CONTROL PERMIT

PERMIT NO.: 1987-EE-4103 DATE ISSUED: December 8, 1987

FINAL PLANS, SPECIFICATIONS, APPLICATION AND SUPPORTING DOCUMENTS LOG NUMBERS: 4103-87
PREPARED BY: John S. Cowings

SUBJECT: ROCK ISLAND ARSENAL -- Pretreatment System and Sewer Connection for Metal Finishing Wastewater -- Rock Island Treatment Plant

SPECIAL CONDITION 3: There shall be no arrangement or cross connection by which an unsafe substance may enter the potable portion of a public water supply. The permittee shall comply with Illinois Pollution Control Board regulations 35 Ill. Adm. Code, Subtitle F: Public Water Supplies, Section 607.104 and Illinois Environmental Protection Agency Technical Policy Statements 35 Ill. Adm. Code, Subtitle F, Chapter II, Sections 653.801 through 653.805.

SPECIAL CONDITION 4: All sludges generated on-site shall be transported for disposal at an Illinois Environmental Protection Agency permitted facility using the Agency's Supplemental Permit and manifest system in accordance with the Environmental Protection Act.

SPECIAL CONDITION 5: Within 90 days of the effective date of this permit, permittee shall submit to the Control Authority a toxic organic pollutant management plan as described in 40 CFR 433.12(b). The plan shall specify the toxic organic compounds used, the method of disposal used, and procedures for ensuring that toxic organics do not spill or leak into the wastewater.

The permittee shall make the following certification statement when submitting the toxic organic pollutant plan to the Control Authority.

> Based on my inquiry of the person or persons directly responsible for managing compliance with the permit limitation for total toxic organic (TTO), I certify that, to the best of my knowledge and belief, no dumping of concentrated toxic organics into the wastewaters has occurred. I further certify that this facility is implementing the toxic organic pollutant management plan as submitted.

SPECIAL CONDITION 6: The issuance of this permit does not relieve the permittee of the responsibility of complying with 35 Ill. Adm. Code, Part 307 and/or the General Pretreatment Regulations (40 CFR 403) and any guidelines developed pursuant to Section 301, 306, or 307 of the Federal Clean Water Act of 1977.

The guidelines developed for the Metal Finishing Point Source Category (40 CFR 413, 40 CFR 413 Subpart A & 433.15) limits the Pollutants in facility discharges as follows:

Continued on Page 3

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
WATER POLLUTION CONTROL PERMIT

PERMIT NO.: 1987-EE-4103 DATE ISSUED: December 8, 1987

FINAL PLANS, SPECIFICATIONS, APPLICATION AND SUPPORTING DOCUMENTS LOG NUMBERS: 4103-87
PREPARED BY: John S. Cowings

SUBJECT: ROCK ISLAND ARSENAL -- Pretreatment System and Sewer Connection for Metal Finishing Wastewater -- Rock Island Treatment Plant

	1-Day Max (mg/l)(2)	Monthly Avg (mg/l)(2)
Cyanide (total)(1)	1.2	0.65
Copper	3.38	2.07
Nickel	3.98	2.38
Chromium (total)	2.77	1.71
Zinc	2.61	1.48
Lead	0.69	0.43
Cadmium	0.69	0.26
Silver	0.43	0.24
TTO(3)	2.13	-

(1)Cyanide monitoring must take place after cyanide treatment and before dilution with other wastestreams unless an adjustment is made to account for the dilution ratio of the cyanide wastestream flow to the effluent flow.

(2)These numbers do not reflect a reduction in the numerical limitations due to the contributing flow of sanitary wastes, non-contact cooling water, and other dilutional wastewaters not regulated by the limitations. If removal credits are given as per 40 CFR 403.7, the parameters may be modified accordingly.

(3)TTO is the total toxic organics, which is the summation of all quantifiable values greater than 0.01 mg/l for the specified toxic organics in the regulation.

READ ALL CONDITIONS CAREFULLY
STANDARD CONDITIONS

The Illinois Environmental Protection Act (Illinois Revised Statutes, Chapter 111-1 2. Section 1039) grants the Environmental Protection Agency authority to impose conditions on permits which it issues.

1. Unless the construction for which this permit is issued has been completed, this permit will expire (1) two years after the date of issuance for permits to construct sewers or wastewater sources or (2) three years after the date of issuance for permits to construct treatment works or pretreatment works.

2. The construction or development of facilities covered by this permit shall be done in compliance with applicable provisions of Federal laws and regulations, the Illinois Environmental Protection Act, and Rules and Regulations adopted by the Illinois Pollution Control Board.

3. There shall be no deviations from the approved plans and specifications unless a written request for modification of the project, along with plans and specifications as required, shall have been submitted to the Agency and a supplemental written permit issued.

4. The permittee shall allow any agent duly authorized by the Agency upon the presentation of credentials:

   a. to enter at reasonable times, the permittee's premises where actual or potential effluent, emission or noise sources are located or where any activity is to be conducted pursuant to this permit.

   b. to have access to and copy at reasonable times any records required to be kept under the terms and conditions of this permit.

   c. to inspect at reasonable times, including during any hours of operation of equipment constructed or operated under this permit, such equipment or monitoring methodology or equipment required to be kept, used, operated, calibrated and maintained under this permit.

   d. to obtain and remove at reasonable times samples of any discharge or emission of pollutants.

   e. to enter at reasonable times and utilize any photographic, recording, testing, monitoring or other equipment for the purpose of preserving, testing, monitoring, or recording any activity, discharge, or emission authorized by this permit.

5. The issuance of this permit:

   a. shall not be considered as in any manner affecting the title of the premises upon which the permitted facilities are to be located;

   b. does not release the permittee from any liability for damage to person or property caused by or resulting from the construction, maintenance, or operation of the proposed facilities;

   c. does not release the permittee from compliance with other applicable statutes and regulations of the United States, of the State of Illinois, or with applicable local laws, ordinances and regulations;

   d. does not take into consideration or attest to the structural stability of any units or parts of the project;

   e. in no manner implies or suggests that the Agency (or its officers, agents or employees) assumes any liability, directly or indirectly, for any loss due to damage, installation, maintenance, or operation of the proposed equipment or facility.

6. Unless a joint construction/operation permit has been issued, a permit for operating shall be obtained from the Agency before the facility or equipment covered by this permit is placed into operation.

7. These standard conditions shall prevail unless modified by special conditions.

8. The Agency may file a complaint with the Board for suspension or revocation of a permit:

   a. upon discovery that the permit application contained misrepresentations, misinformation or false statements or that all relevant facts were not disclosed; or

   b. upon finding that any standard or special conditions have been violated; or

   c. upon any violation of the Environmental Protection Act or any Rule or Regulation effective thereunder as a result of the construction or development authorized by this permit.

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
WATER POLLUTION CONTROL PERMIT

PERMIT NO.: 1987-EE-4103 DATE ISSUED: December 8, 1987

FINAL PLANS, SPECIFICATIONS, APPLICATION AND SUPPORTING DOCUMENTS PREPARED BY: John S. Cowings LOG NUMBERS: 4103-87

SUBJECT: ROCK ISLAND ARSENAL -- Pretreatment System and Sewer Connection for Metal Finishing Wastewater -- Rock Island Treatment Plant

PERMITTEE TO CONSTRUCT, OWN AND OPERATE
Rock Island Arsenal
Rock Island, Illinois 61299-5000

Permit is hereby granted to the above designated permittee(s) to construct and/or operate water pollution control facilities described as follows:

55' of 3" and 196' of 8" PVC sewer pipe; 2 concrete manholes; Class C Bedding; all fittings and appurtenances necessary for a sewer connection. 3-2600 gallon and 3-6400 gallon batch treatment tanks; 2 (1500 gallon and 4300 gallon) sludge thickening tanks; 2 (840 gallon and 1700 gallon) plate settling tanks; 4-250 gallon and 4-100 gallon chemical storage tanks; 2-9400 gallon pH adj. tanks; all pumps, piping and appurtenances necessary to treat a maximum flow of 50,000 gpd of metal finishing wastewater for discharge to the City of Rock Island.

This Operating Permit expires on December 1, 1992.

This Permit is issued subject to the following Special Condition(s). If such Special Condition(s) require(s) additional or revised facilities, satisfactory engineering plan documents must be submitted to this Agency for review and approval for issuance of a Supplemental Permit.

SPECIAL CONDITION 1: The operation of the pretreatment facilities must be under the direct and active field supervision of a certified industrial treatment plant operator in accordance with the State of Illinois Rules and Regulations, Title 35, Subtitle C, Chapter 1, Part 312.

SPECIAL CONDITION 2: The issuance of this permit does not relieve the permittee of the responsibility of complying with any limitations and provisions imposed by Rock Island.

Continued on Page 2

THE STANDARD CONDITIONS OF ISSUANCE INDICATED ON THE REVERSE SIDE MUST BE COMPLIED WITH IN FULL. READ ALL CONDITIONS CAREFULLY.

TGM:EK:jk/4377g,31-33
cc: EPA - Region
John S. Cowings
Records
Permits

DIVISION OF WATER POLLUTION CONTROL

Thomas G. McSwiggin

Thomas G. McSwiggin, P.E.
Manager, Permit Section

4. Wastewater Treatment

4.1. Waste Collection

4.1.1. Spills, drippings, washdowns etc. are collected in four (4) basement sumps equipped with manually actuated pumps.

4.1.1.1. Pumps in the basement area beneath chrome plating operations discharge to the chrome waste treatment system.

4.1.1.2. Two additional basement sumps divert wastes to the metals waste treatment system.

4.1.2. Rinse waters generated during processing operations are first directed to the appropriate scrubbers for re-use as make-up water instead of going directly to waste treatment. By using this water at the scrubber the amount of make-up water needed for scrubbing operations is greatly reduced.

4.1.3. Blowdown of the recirculating scrubber water is routed to waste treatment.

4.1.4. Two sumps in the scrubber area receive make-up overflow, spillage or leakage and divert it to the appropriate chrome or metals waste treatment system.

4.1.5. The waste stream from the de-ionized water system, produced during the regeneration and backwash of the ion exchange resin is sent directly to the equalization tanks. Cooling tower water blowdown is also sent directly to the equalization tanks.

4.1.6. Condensate purged from heat exchangers and pipe coils on start-up is directed to the basement sumps which is then pumped to waste treatment. This purge is a precautionary step in case the condensate is contaminated.

4.2. Treatment System

4.2.1. Two parallel treatment systems are provided so that chromium bearing wastewaters can be isolated for reduction.

4.2.2. Chromium waste treatment.

4.2.2.1. Three chrome batch tanks, approximately 2,600 gallons working capacity each, are provided so that one tank may be filling, while the second undergoes treatment and the third is draining.

4.2.2.2. These are sized to accept roughly four hours of waste at a design flow rate of approximately 8 gpm, so that two batches may be treated on each shift.

4.2.2.3. Sulfuric acid and sodium metabisulfite are added to the agitated batch tanks to reduce the chrome, followed by sodium hydroxide and ferric chloride addition for $Cr(OH)_3$ floc formation at optimum pH. There are two procedures which can be followed to transfer the treated wastes from the batch tanks. The normal procedure is as follows.

4.2.2.4. The contents of chrome batch tanks are transferred to the chrome parallel plate gravity settler for separation of solids from liquids.

4.2.2.5. The gravity settler is capable of running at 50 gpm at a design flow rate of 0.3 gpm/sq.ft.

4.2.2.6. A polymer is added to facilitate coagulation and sedimentation.

4.2.2.7. Clarified water from the settler flows to either of the 9,400 gallon, working capacity, agitated equalization tanks.

4,2.2.8. Sludge from the bottom of the settler is pumped to a 1,500 gallon, working capacity, agitated holding tank and then to a 2-cubic foot filter press for dewatering.

4.2.2.9. The sludge holding tank permits additional thickening through gravity dewatering and allows for controlled feed to the filter press.

4.2.2.10. Dewatered filter cake from the filter press is disposed of at an authorized facility.

4.2.2.11. The permeate is recycled back to the batch tank for treatment.

4.2.2.12. The alternate method of transferring from the batch tanks is used if the solids content in the batch tanks is relatively high. It is as follows.

4.2.2.13. Treated waste is transferred directly from the batch tanks to the sludge tank for dewatering as before. As the solids content is high, the gravity settler would have very little effect so it is bypassed.

4.2.2.14. Because of this option, the ability to add polymer to the batch tanks is being provided.

4.2.2.15. After going through the filter press, the permeate is directed back to an empty batch tank and <u>not</u> combined with another fresh batch which again would have a high solid content.

4.2.2.16. This batch that has been through the filter press is then sent to the parallel plate gravity settler and the normal procedure is then followed.

4.2.2.17. No matter which method is used, the only water that is discharged to the sewer is via the equalization tank.

4.2.2.18. The piping system is cross connected to allow the operator the flexibility to run the system as experience dictates by just changing several valves.

4.2.3. Metals Waste Treatment.

4.2.3.1. The metals treatment system operates in the same manner, as the chrome system, except equipment sizes reflect the larger design flow of 21 gpm.

4.2.3.2. The three agitated metals batch tanks have a working capacity of 6,400 gallons.

4.2.3.3. The metals gravity settler operates at 120 gpm at a design flow rate of 0.3 gpm/sq.ft.

4.2.3.4. The agitated metals sludge tank has a working capacity of approximately 4,300 gallons.

4.2.3.5. The metals filter press is a 7.5 cubic foot unit.

4.2.4. Sulfuric acid, ferric chloride and sodium hydroxide are fed into the system from 250 gallon storage tanks.

4.2.4.1. Four, 100 gallon agitated mix tanks are used for polymer and anti-foam.

4.2.4.2. A 250 gallon agitated mix tank is used for sodium metabisulfite.

4.2.5. Tank and equipment sizes reflect the low rinse rates expected to be employed in the plating process.

4.2.6. 8 gpm and 21 gpm design flow rates for chrome and metals treatment systems, respectively, reflect normal, full production, with all lines operating on one shift.

4.3. Waste Treatment Operation

4.3.1. Sampling valves for checking influent and effluent quality are provided on batch tanks, gravity settlers and equalization tanks.

4.3.2. Sulfuric acid and sodium hydroxide are provided to the equalization tanks for final pH adjustment if required prior to discharge to the sanitary sewer.

4.3.3. A valve to divert inadequately treated wastes from the equalization tank back to the batch tanks is provided.

4.3.4. Flows to the gravity settlers are metered and the final effluent discharge flow to the City sewer system will be sampled, measured and recorded.

4.3.5. A full time attendant must be present in the waste treatment area as most operations are, by design, manually controlled. Operator involvement results in a more consistent, high quality effluent.

4.3.6. Batch treatment allows adjustments to be made for the varying characteristics of raw waste over time. Slug discharges can be accommodated and treated.

4.3.7. Control panels are installed locally at each group of related equipment.

4.3.8. Graphic display in the waste treatment control room indicates the operating status of each pump and the position of major valves, as well as tanks and sump levels.

4.4. Waste Treatment Facility Construction

4.4.1. Treatment facility is located in a 48' x 80' subterranean area in the southwest corner of the plating shop building.

4.4.2. Floor level is 20 feet below the plating shop operating floor of 100'-0", which provides adequate space for the tanks with sufficient clearance above for access and structural members.

4.4.3. Work/observation platforms are provided at appropriate locations and elevations.

4.4.4. A control room, which includes laboratory bench space, motor control center, desk and file cabinets for record keeping and graphic panel, is centrally located.

4.4.5. Filter presses have been located on the plating shop operating floor, directly above the waste treatment area to allow easy removal of the sludge containers with forklift trucks and gravity draining of the permeate back to the batch tanks for reprocessing.

4.5. Metal Recovery

4.5.1. Recovery and reuse of plating bath chemicals to reduce replacement costs and waste treatment costs was investigated.

4.5.2. Metal recovery is not being implemented because it cannot be economically justified at current costs. The plating shop design can accommodate recovery attempts if future circumstances should warrant.

APPENDIX E

HAZARDOUS WASTE LOG, WASTE PROFILE SHEETS, MANIFESTS, AND WASTE CHARACTERIZATION DATA, BUILDING 64

HAZARDOUS WASTE LOG, BLDG ~~2120~~ 64, CC ~~7860~~ 7910

CONTROL NO.	EPA NO.	EPA NAME	START DATE	FILLED DATE	WT.	1348-1 DATE	MOVED DATE
[illegible]	—	[illegible]	[illegible]	XXX			
9064001	—	USED BLACK CHROMIUM Solution	1/23				
9064002	—	" " " "	1/23				
9064003	—	" " " "	1/23				
9064004	—	" " " "	1-23				
9064005	—	" " " "	1-23	BLACK CHROMES			
9064006	—	" " " "	1-23				
9064007	—	" " " "	1-23				
9064008	—	USED BLACK CHRO	1-26				
9064009	—	USED CHROME Solution	1-26				
9064010	—	" " " "	1-26				
9064011	—	" " " "	1-26				
9064012	—	" " " "	1-26	XXXX			
9064013	—	" " " "	1-26				
9064014	—	" " " "	1-26				
9064015	—	" " " "	1-26				
9064016	—	" " " "	1-26				
9064017	—	" " " "	1-26	DEEP Tank of			
9064018	—	" " " "	1-26	CHROME CORD			
9064019	—	" " " "	1-26				
9064020	—	" " " "	1-26				
9064021	—	" " " "	1-26				
9064022	—	" " " "	1-26				
9064023	—	" " " "	1-26				
9064024	—	" " " "	1-26				
9064025	—	" " " "	1-29				
9064026	—	" " " "	1-29				
9064027	—	" " " "	1-29				
9064028	—	" " " "	1-29				
9064029	—	" " " "	1-29				
9064030	—	" " " "	1-29				
9064031	—	" " " "	1-29				
9064032	—	" " " "	1-29				
9064033	—	" " " "	1-29				
9064034	—	" " " "	1-30				
9064035	—	" " " "	1-30				
9064036	—	" " " "	1-30				
9064037	—	" " " "	1-30				
9064038	—	" " " "	1-30				
9064039	—	" " " "	1-30				
9064040	—	"	2-1	2-1			
9064041	—	"	2-1	2-1			
9064042	—	"	2-1	2-1			
9064043	—	"	2-1	2-1			

KEUFFEL & ESSER CO.
K 11-22-99

HAZARDOUS WASTE LOG, ~~BLDG 212W~~, CC 7860

CONTROL NO.	EPA NO.	EPA NAME	START DATE	FILLED DATE 1990	WT.	1348-1 DATE	MOVED DATE
9064044	—	USED BLACK CHROMIUM	2-1	2-1	Big	Tank	
9064045	—	"	"	"			
9064046	—	"	"	"			
9064047	—	"	"	"			
9064048	—	"	"	"			
9064049	—	"	"	"			
9064050	—	"	"	"			
9064051	—	"	"	"			
9064052	—	"	"	"			
9064053	—	"	"	"			
9064054	—	"	"	"			
9064055	—	"	"	"			
9064056	—	"	"	"			
9064057	—	"	"	"			
9064058	—	"	"	"			
9064059	—	"	"	"			
9064060	—	"	"	"			
9064061	—	"	"	"			
9064062		"	"	"			
9064063	—	"	"	"			
9064064	—	"	"	"			
9064065	—	"	"	"			
9064066	—	"	"	"			
9064067	—	"	"	"			
9064068	—	"	"	"			
9064069	—	"	"	"			
9064070	—	"	"	"			
9064071	—	"	"	"			
9064072	—	"	"	"			
FIRST X 9064073	—	USE CHROMIUM	5-21-90	5-21-90			
9064074		" "	"	"			
9064075		" "	"	"			
9064076		" "	"	"			
9064077		" "	"	"			
9064078		" "	"	"			
9064079		" "	"	"			
9064080		" "	"	"			
9064081		" "	"	"			
9064082		" "	"	"			
9064083		" "	"	"			
9064084		" "	"	"			
9064085		" "	"	"			
9064086		" "	"	"			
9064087		" "	"	"			

Rev 11-23-88

HAZARDOUS WASTE LOG, ~~BLDG 212W~~, CC 7860

	CONTROL NO.	EPA NO.	EPA NAME	START DATE	FILLED DATE	WT.	1348-1 DATE	MOVED DATE
MIDDLE X	9064088		USE CHROMIUM	5-21-90	5-21-90			2-91
	9064089		" "	" " "	"			
	9064090		" "	"	"			
	9064091		" "	"	"			
	9064092		" "	"	"			
	9064093		" "	"	"			
	9064094		" "	"	"			
	9064095		" "	"	"			
	9064096		" "	"	"			
	9064097		" "	"	"			
	9064098		" "	"	"			
	9064099		" "	"	"			
	9064100		" "	"	"			
	9064101		" "	"	"			
	9064102		" "	"	"			
	9064103		" "	"	"			
	9064104		" "	"	"			
	9064105		" "	"	"			
LAST X	9064106		" "	"	"			

K 11-27-90

HAZARDOUS WASTE LOG, BLDG ~~212W~~ 64, CC 7860

	CONTROL NO.	EPA NO.	EPA NAME PLATING SHOP –	START DATE 1990	FILLED DATE 1990	WT.	1348-1 DATE	MOVED DATE
D007,8,6	9064107	I+G+H	ALKALI TANK SOLIDS + TK 1 LIQ	9-17	9-18	680		
D007,8,6	9064108	I+G+H	ALKALI TK SOLIDS	9-17	9-18	730		
D007,8,6	9064109	I+G+H	ALKALI + NE STRIP + MURATIC	9-17	9-18	680		
NON-HAZ	9064110	OIL	WAXY OIL	9-17	9-21	420		
	9064111	OIL	WAXY OIL	9-17	9-21	450		
	9064112	OIL	WAXY OIL WASTE	9-17	9-21	120		
D007,6,8	9064113	A	ACID TK 1 SLUDGE	9-21	9-21	760		
D007,6,8	9064114	A	ACID TK 1 SLUDGE			710		
D007,6,8	9064115	A	ACID TK 1 SLUDGE			710	Cleaned from	
D007,6,8	9064116	A	ACID TK 1 SLUDGE			540	366,	368
D002	9064117	-	NICKEL CHLORIDE	9-21	9-21	500		
D002	9064118	-	AMMONIUM BIFLUORIDE	9-21	9-21	180		
D001	9064119	-	MISC. PAINTS & LACQUERS	9-17	9-24	250		
D001	9064120	-	MISC. PAINTS & LACQUERS	9-17	9-24	170		
D002	9064121	-	~~ALUMON 1 OIL~~ CAUSTIC SOLN	–	9-24	280		
sample	9064122		SAE10 OIL + WATER	–	9-24	110		
sample	9064123		TITAN 150 OIL	–	9-24	420		
D007,8	9064124	-	HYDROFLUORIC ACID	9-21	9-21	300		
F001	9064125	-	MISC OIL	9-17	9-24	100		
NON-HAZ	9064126	-	MISC GREASE	9-17	9-24	120		
D007,6,8	9064127	C	ACID TK 2 SLUDGE	9-27	9-27	500		
	128	C						
	129	C						
	130	C						
	131	C						
	132	C						
	133	C						
	134	C						
	135	C						
	136	C						
	137	C						
	9064138	C	ACID TK 2 SLUDGE			500		
D002,7,6	9064139	B	ACID TK 2 LIQUID	9-26	9-26	550		
	140	B						
	141	B						
	142	B						
	143	B						
	144	B						
	145	B						
	146	B						
	147	B						
	148	B						
	149	B						
	9064150	B	ACID TK 2 LIQUID			550		

KL 11-22-99

HAZARDOUS WASTE LOG, BLDG ~~212W~~ 67, CC 7860

	CONTROL NO.	EPA NO.	EPA NAME	START DATE 1990	FILLED DATE 1990	WT.	1348-1 DATE	MOVED DATE
D002,7,6	9064 151	B	ACID TK 2 LIQUID	9-24	9-24	550		
	152	B						
	153	B						
	154	B						
	155	B						
	156	B						
	157	B						
	158	B						
	159	B						
	160	B						
	161	B						
	162	B						
	163	B						
	164	B						
	165	B	ACID TK 2 LIQUID			550		
—	9064 166		~~DEOXIDIZER~~ CRYSCOAT OC			NOT HAZ. WASTE		
—	167		~~DEOXIDIZER~~ CRYSCOAT OC			NOT HAZ. WASTE		
—	9064 168		~~DEOXIDIZER~~ CRYSCOAT OC			NOT HAZ. WASTE		
D002	9064 169		~~RIA Mixture #5~~		9-28	520		
?	9064 170		~~Sniffing C~~ AMMONIUM PERSULFATE		9-28	200		
07,8,6	9064 171	E	ALKALINE TK 2 LIQUID	9-28	9-28	650		
	172	E						
	173	E						
	174	E						
	175	E						
	176	E						
	177	E						
	178	E						
	179	E						
	180	E						
	181	E						
	182	E						
	183	E						
	184	E						
	185	E						
	186	E						
	187	E						
	188	E						
	189	E						
	190	E						
	191	E						
	192	E						
	193	E						
	194	E				650		

K: 11-22-99

HAZARDOUS WASTE LOG, BLDG ~~212W~~ 07, CC 7860

	CONTROL NO.	EPA NO.	EPA NAME	START DATE 1990	FILLED DATE 1990	WT.	1348-1 DATE	MOVED DATE
D007,8,6	9064 195	E	ALKALINE TK 2 LIQUID	9-28	9-28	650		
	196	E						
	197	E						
	198	E						
	199	E						
	200	E						
	201	E		10-1	10-1	650		
D007,8,6	202	H+G+H	ALK TK SOLIDS + MURATIC SLUDGE	9-28	9-28	540		
D007,8,6	203	E	ALKALINE TK 2 LIQ	10-1	10-1	650		
	204	E						
	205	E						
	206	E						
	207	E						
	208	E						
	209	E						
	210	E						
	211	E						
	212	E						
	213	E						
	214	E				650		
7,8,6	9064 215	D	ALK. TK 1 LIQ			710		
	216	D						
	217	D						
	218	D						
	219	D						
	220	D						
	221	D						
	222	D						
	223	D						
	224	D						
	225	D						
	226	D						
	227	D						
	228	D						
	229	D		10-1	10-1			
	230	D		10-2	10-2			
	231	D						
	232	D						
	233	D						
	234	D						
	235	D						
	236	D						
	237	D						
	238	D				710		

K 11-27-90

HAZARDOUS WASTE LOG, BLDG ~~212W~~, CC 7910

	CONTROL NO.	EPA NO.	EPA NAME	START DATE 1990	FILLED DATE 1990	WT.	1348-1 DATE	MOVED DATE
D007,8,6	9064239	D	ALKALINE TK1 LIQUID	10-2	10-2	710		
	240	D						
	241	D						
	242	D						
	243	D						
	244	D						
	245	D						
	246	D						
	247	D				710		
D007,8	248	—	HYDROCHLORIC ACID	10-2		385		
D007,8,6	9064249	F	ALKALINE TK3 LIQUID	10-3	10-3	620		
	250	F						
	251	F						
	252	F						
	253	F						
	254	F						
	255	F						
	256	F						
	257	F						
	258	F						
	259	F						
	260	F						
	261	F						
	262	F						
	263	F						
	264	F						
	265	F						
	266	F						
	267	F						
	268	F						
	269	F						
	270	F						
	271	F						
	272	F						
	273	F						
	274	F						
	275	F						
	276	F						
	277	F						
	278	F						
	279	F						
	280	F						
	281	F						
	282	F				620		

HAZARDOUS WASTE LOG, BLDG 212W, CC 7910

	CONTROL NO.	EPA NO.	EPA NAME	START DATE	FILLED DATE	WT.	1348-1 DATE	MOVED DATE
D007,8,6	9064283	F	ALKALINE TK 3 LIQUID	10-3	10-3	620		2-15
	284	F						
	285	F						
	286	F						
	287	F						
	288	F						
	289	F						
	290	F				620		
D007,8,6	291	D	ALKALINE TK L LIQUID	10-2	10-2	620		
D007,8,6	292	D+F	ALK TK 1 + TK 3 LIQUID	10-2	10-3	680		
D007,8,6	293	F	ALKALINE TK 3 LIQUID	10-3	10-3	620		
	294	F						
	295	F						
	296	F						
	297	F						
	298	F						
	299	F						
	300	F						
	301	F						
	302	F		10-4	10-4			
	303	F						
	304	F						
	305	F						
	306	F						
	307	F						
	308	F				620		
D007,8	309	—	HYDROFLORIC ACID	10-2	10-4	480		
D007,8	310	—	HYDROFLORIC ACID	10-2	10-4	520		
nonhaz	311	—	Pentpenetrating oil	—	11-5	400		
D007,8	312	J	HF Sludge	10-5	10-5	540		
	313	J				620		
	314	J	24301			600		
	315	J		10-9	10-9	520		
	316	J				560		
	317	J				560		
	318	J				740		
D008,7	319	K	Wall			500		
	320	K	Wall			640		
	321	K	WALL			620		
D007,8,6	322	L	LAST DRUM MISC. TK CLEAN-UP	10-10	10-10	400		
D007,8,6	323	F	ALK TK 3 LIQ	10-3	10-3	620		
	324	F	ALK TK 3 LIQ	10-3	10-3	620		
NON-HAZ	325	D007	STOP DOG WAY	10-11	10-11	340		
	326	D007		10-11	10-11	110		

Tank 28795

K 7-16-90

HAZARDOUS WASTE LOG, BLDG ~~212W~~, CC 7910

	CONTROL NO.	EPA NO.	EPA NAME	START DATE	FILLED DATE	WT.	1348-1 DATE	MOVED DATE
NON-HAZ	9064327	D007	STOP OFF WAY	10-11	10-11	100		2-15
	328					200		
	329					225		
	330					225		
	331		28795			235		
	332					245		
	333					225		
	334					220		
	335					250		
	336	U	DEGREASER 29010	10-12	10-12	265		
D001	337	—	MISC PAINTS & LACQUERS	10-16	10-16	210		
	338	—	HD Rust Stop #10116	—	10-22	450		
	339	—		—		450		
	340	—		—		450		
NON HAZ	341		liquid from sump tote tank	—	—	—		
	9064-342	D003,8	LEAD FLUOBORATE	1-17	1-17	200		
✓	343	D003,8	"			200		
✓	344	D003,8	LEAD FLUOBORATE			200		
✓	345	D002,7	IRIDITE 4P4			250		
	346	D002	OAKITE BLACK GUARD			450		
✓	347	D002	OAKITE 100			550		
✓	348	D002,7	SODIUM BICHROMATE			650		
✓	349	D002,7	"			650		
✓	~~350~~	~~D002,7~~	~~SODIUM BICHROMATE~~			—		
✓	351	—	ZINC CARBONATE	—		200		
✓	352	—	NICKEL SULFATE	1-17	1-17	350		
✓	353	—	SILICA FLOUR	1-17	1-17	350		
	9064354	D002	OAKITE STRIPPER A-1	1-17	1-17	500		
✓	55	D002	"			500		
✓	56	D002	"			500		
✓	57	D002	"			500		
✓	58	D002	OAKITE STRIPPER A-1			500		
✓	59	D002	OAKITE 90			450		
✓	60	D002	" "			450		
✓	61	D002	" "			450		
✓	62	D002	OAKITE 90			450		
✓	63	D002	OAKITE LAS			450		
✓	64	D002	OAKITE BLACK GUARD			450		
✓	65	D002	"			450		
✓	66	D002	"			450		
✓	67	D002	"			450		
✓	68	D002	[illegible]			500		
✓	69	D002,7	[illegible]			[illegible]		
✓	70	D001	[illegible]			[illegible]		

Chemicals found in sumps

Stamps on 2

HAZARDOUS WASTE LOG, BLDG ~~212W~~ 04, CC 7910

CONTROL NO.	EPA NO.	EPA NAME	START DATE	FILLED DATE	WT.	1348-1 DATE (CT-1)	MOVED DATE
✓9064 371	D002	FLUOBORIC ACID	1-17	1-17	200		2-15
✓ 372	D002	"			200		
✓ 373	D002	"			200		
✓ 374	D002	FLUOBORIC ACID			200		
✓ 375	D002	RODINE 50			200		
✓ 376	D003	SODIUM FLUORIDE			40		
✓ 377	D002	ENSTRIP NP-2			450		
✓ 378	D002,7	ALUM "OLIVE GREEN			200		
	~~378~~	~~POTASSIUM THIOCYANATE~~					
✓ 380	—	NICKEL ACETATE	1-17	1-17	100		
379	D002,7	IRIDITE 4P-1	1-17	1-17	250		
381	D002,7	IRIDITE 4P-1	1-17	1-17	250		
382	D002	FLUOBORIC ACID			50		
383	D002	HYDROFLUORIC ACID	2-6	2-6	500		
384	D002	"	"		500		
385	—	ACTANE-32	2-6	2-6	550		
386	—	"	2-6	2-6	550		
387	—	COPPER SULFATE	2-7	2-7	100		2-15
	~~388~~	~~D007 FLOOR DRY WITH CHROME~~					
	~~389~~	~~D007 FLOOR DRY WITH CHROME~~					
390	D007	WOOD WITH CHROME	2-13	2-13	160	3-5	4-12
391	D007	"	"	"	150	3-5	
392	D007	"	"	"	160	3-5	
393	D007	OIL DRY #2	2-16	2-19	460	3-5	
394	D007	OIL DRY #2	2-16	2-19	360	3-5	
395	D006,7	OIL DRY #3	2-16	2-19	370	3-5	
396	D006,7	OIL DRY #3	2-16	2-19	370	3-5	
397	D006,7	OIL DRY #3	2-16	2-19	360	3-5	
398	D002,7,8	OIL DRY 1 + 3	2-16	2-19	415	3-5	
399	D007	OIL DRY #2	2-16	2-19	350	3-5	
400	D007	OIL DRY #2	2-16	2-19	350	3-5	
401	D007	SWEEPING MAT. #2	2-16	2-19	450	3-5	
402	D007	WOOD w/ CHROME	2-16	2-19	85	3-5	
403	D007	WOOD w/ CHROME	2-16	2-19	160	3-5	
404	D007	SWEEPING MAT. #2	2-16	2-19	275	3-5	
405	D007	SWEEPING MAT #1	2-16	2-19	300	3-5	
406	D007	WOOD w/ER + SWEEPING	2-16	2-19	100	3-5	

KL 7-16-90

Bldg 64

HAZARDOUS WASTE LOG, BLDG ~~212W~~, CC 7860

CONTROL NO.	~~EPA~~ pH	EPA NAME	START DATE	FILLED DATE	WT.	1348-1 DATE	MOVED DATE
7911001	3.5	D002, D007, D006	[illegible]	[illegible]	830	4-9	Source
7911002	3.7	" " "	"	"	800	4-9	
7911003	4.7	" " "	"		715	4-9	
7911004	3.7	" " "	"	4/19/90	773	4-9	Unknown
7911005	3.7	" " "	"	4/19/90	711	4-9	
7911006	3.7	" " "	"	4/19/90	[illegible]	4-9	
7911007	7.1	" " "	"	"	640	4-9	
7911008	2.9	" " "	"	"	750	4-9	
7911009	6.7	" " "	"	"	[illegible]	4-9	
7911010	2.9	" " "	"	"	860	4-9	
7911011	3.9	" " "	"	"	1090	4-9	
7911012	—	USED OIL	"	"	450	4-9	
7911013	—	USED OIL FILTERS	"	"	100	4-9	
7911014	8.0	" " "	"	"	390	4-9	
7911015	1.9	" " "	"	"	280	4-9	
7911016	3.7	" " "	"	"	400	4-9	
7911017	5.2	" " "	"	"	360	4-9	
7911018	6.9	" " "	"	"	480	4-9	
7911019	2.1	" " "	"	"	840	4-9	
7911020	[illegible]	[illegible]	"	"	620	4-9	
7911021	8.2	" " "	"	"	620	4-9	

K 11-27-99

WASTE PROFILE SHEETS AND MANIFESTS FOR 105 DRUMS WASTE CHROMIC ACID SOLUTION, CORROSIVE MATERIAL

WASTE PROFILE SHEETS

General Directions: In order for us to determine whether we can lawfully and safely transport, treat, and dispose of your waste material, we must obtain certain information about the chemical and physical properties of the waste and its chemical composition. Please be complete in your answers; if your response is "none" or "not available", so indicate. Answers must be printed in ink or typewritten and the completed form must be signed. Please make a copy of this form for your records.

(1.) Generator Name: Rock Island Arsenal (RIA) EPA Generator No.: IL5210021833

(2.) Generating Facility Complete Address:
Commander, Rock Island Arsenal, ATTN: SMCRI-SEM (Dr. Shore) Rock Island, IL 61299-5000

(3.) Authorized Company Representative: Dr. William Shore Title: Environmental Coordinator

(4.) Phone Number: (309) 782- 7855

(5.) Emergency Contact RIA Fire Department Title: Shift Chief Phone: (309) 782-5148

(6.) General Description of The Waste: Chromium Plating Sludge
CC. 7910

(7.) Process Generating Waste: Plating Shop

(8.) Anticipated volume 400 [ ] Gallons [ ] Tons [ ] Cubic Yards [X] Drums, or [ ] Other
Per: [ ] Day [ ] Week [ ] Month [X] Year, or [ ] Other

(9.) Waste Properties:

(a.) Vapor pressure (in mm of Hg @ 25 °C)

(b.) Flash Point >200° [X] °F [ ] °C [ ] Closed Cup [ ] Open Cup

(c.) Phases/layers: [X] Single [ ] Bilayered [ ] Multilayered

(d.) Physical State @ 20 °C: [ ] Solid [ ] Liquid [X] Semi-Solid [ ] Powder [ ] Other

(e.) pH <2 (f.) Solubility (g/100g H_2O) @ 20 °C:

(g.) Density: 11 [ ] lb./ft.^{3} [ ] lb./yd.^{3} [X] lb./gal. [ ] g/cc

(h.) Odor: [ ] Strong [X] Mild [ ] None

(i.) Reactivity: Water [ ] Yes [X] No Autopolymerizable [ ] Yes [X] No Shock Sensitive [ ] Yes [X] No
Pyrophoric [ ] Yes [X] No Thermally Sensitive [ ] Yes [X] No Explosive [ ] Yes [X] No

(10.) Complete waste composition (with ranges—indicate % or ppm.) Attach Additional Pages if Necessary

ORGANIC	INORGANIC		
	Cd = 120 ppm	Zn = 27 ppm	Co = 14 ppm
	Cr = 324 Kppm	Sn = 1.88 Kppm	Mg = 426 ppm
	Cu = 442 ppm	Fe = 3.79 Kppm	Mn = 59 ppm
	Ni = 24 ppm	Al = 364 ppm	

(11.) Sample Included [ ] Yes [X] No

(12.) Is this waste a "Hazardous Waste" as defined by regulations of the U.S. Environmental Protection Agency pursuant to 40 CFR § 261 of the Resource Conservation and Recovery Act? Yes

(13.) Manifest Information

Proper USDOT Shipping Name	USDOT Hazard Class	UN or NA No.	USEPA Haz.Code	USEPA Haz. Waste No. (Type)
Waste Chromic Acid Liquid	Corrosive Material	UN1755	C,T	D002 D006 D007

(14.) This waste contains: Biological Materials [ ] Yes [X] No Pathogens [ ] Yes [X] No Etiological Agents [ ] Yes [X] No
Radioactive Materials [ ] Yes [X] No PCB's [ ] Yes [X] No Dioxin [ ] Yes [X] No

If yes, specify type (if applicable) and concentration:

(15.) Have you obtained toxicity studies of this waste material? No If so, please attach a copy of the results.

(16.) Required personal protective equipment & procedures: 1

I hereby certify that the above and attached description is complete and accurate to the best of my knowledge and ability to determine, that no deliberate or willful omissions of composition or properties exists, and that all known or suspected hazards have been disclosed.

Generator's Authorized Signatory
William Shore Title Environmental Coordinator Date 8/24/90

DOC. IDENT. | RI FROM | M | FSC | STOCK NUMBER | NIIN | ADD | UNIT OF ISSUE | QUANTITY | SERV | REQUISITIONER | DATE | SERIAL | SUFFIX | SERV | SUPPLEMENTARY ADDRESS | SIGNAL | FUND | DISTRIBUTION | PROJECT | PRIORITY | REQ'D DELIVERY | ADVICE | UNIT PRICE DOLLARS | CTS.

A5AB09 6810-00 R13CHR [illegible] 106 [illegible] 2000

SHIPPED FROM: Rock Island Arsenal, Rock Island, W52H1B

DRMO Rock Island
Bldg. 154
Rock Island, IL 61265

MARK FOR: HW

PROJECT: SMCRI-AOF-FMP/7910
Bldg. 66
Loewenstein, 2-7649

TOTAL PRICE DOLLARS | CTS.

WAREHOUSE LOCATION: 9064-001 [illegible] 7910 106

TYPE OF CARGO | UNIT PRICE | UNIT WEIGHT | UNIT CUBE | U F C | NMFC | FREIGHT RATE | SHIPMENT DATE | MAT. CODE | QUANTITY

SUBSTITUTE DATA (ITEM ORIGINALLY REQUESTED) | FREIGHT CLASSIFICATION NOMENCLATURE

Funded Qty 62,650

HIN 2928

ITEM NOMENCLATURE: USED CHROME SOLUTION D002, D007

10466033

SELECTED BY AND DATE: Unit Cost 0.50 Code R/HA XCT

TYPE OF CONTAINER(S) | TOTAL WEIGHT: 62,650 LB

RECEIVED BY AND DATE | INSPECTED BY AND DATE: 1050

PACKED BY AND DATE | NO. OF CONTAINERS: 106 | TOTAL CUBE: 55 GL

WAREHOUSED BY AND DATE: 1050

WAREHOUSE LOCATION: H0101-0100

REMARKS: MILSBILLS VS (XP) W52H1B 2928 9064

TEST DESTINATION ADDRESS | DATE SHIPPED

TRANSPORTATION CHARGEABLE TO | 14 B/LADING, AWB, OR RECEIVER'S SIGNATURE (AND DATE) | 15 RECEIVER'S DOCUMENT NUMBER

FORM 1348-1 (6 PT) 1 MAR 74 | EDITION OF 1 JAN 64 MAY BE USED UNTIL EXHAUSTED | DOD SINGLE LINE ITEM RELEASE/RECEIPT DOCUMENT

XR1 D PQ Z0 CC60-W CC62-2 A HX P

3

See Lab Analysis

Cr = 324 Kppm | Sn = [illegible]
Cn = 442 ppm | Fe = 3.79 Kppm | Mn = 59 ppm
Ni = 24 ppm | Al = 364 ppm

(11.) Sample Included [ ] Yes [X] No

(12.) Is this waste a "Hazardous Waste" as defined by regulations of the U.S. Environmental Protection Agency pursuant to 40 CFR § 261 of the Resource Conservation and Recovery Act? Yes

(13.) Manifest Information

Proper USDOT Shipping Name	USDOT Hazard Class	UN or NA No.	USEPA Haz. Code	USEPA Haz. Waste No. (Type)
Waste Chromic Acid ~~Liquid~~ Solution	Corrosive material	UN1755	T	D002 D006 D007

(14.) This waste contains: [illegible] Materials [ ] Yes [X] No | Pathogens [ ] Yes [X] No | Etiological Agents [ ] Yes [X] No
[illegible] Materials [ ] Yes [X] No | PCBs [ ] Yes [X] No | Dioxin [ ] Yes [X] No

If yes, specify type (if applicable) and concentration:

(15.) Have you obtained toxicity studies of this waste material? No If so, please attach a copy of the results.

(16.) Required personal protective equipment & procedures: 1

I hereby certify that the above and attached description is complete and accurate to the best of my knowledge and ability to determine, that no deliberate or willful omissions of composition or properties exists, and that all known or suspected hazards have been disclosed.

Generator's Authorized Signatory

William Shore Title Environmental Coordinator Date 8/24/90

HIN 2928 @.50/LB

DNR
MICHIGAN DEPARTMENT OF NATURAL RESOURCES

DO NOT WRITE IN THIS SPACE
ATT. ☐ DIS. ☐ REJ. ☐ PR. ☐

1969. Failure to file is punishable under section 299.548 MCL or Section 10 Act 136, P.A. 1969.

Form Approved. OMB No. 2050-0039 Expires 9-30

Please print or type.

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. I L 5 2 1 0 0 2 1 8 3 3 Manifest Document No. 9 1 0 3 7

2. Page 1 of 1

Information in the shaded area is not required by Federal law.

3. Generator's Name and Mailing Address
Rock Island Arsenal
Building [illegible]
Rock Island, IL 61299-5000

4. Generator's Phone (309) 788-6534

A. State Manifest Document Number MI 2387701

B. State Generator's ID

5. Transporter 1 Company Name: Metropolitan Environmental

6. US EPA ID Number: I N T 1 9 0 0 1 0 3 9 7

C. State Transporter's ID

D. Transporter's Phone 800-334-91[illegible]

7. Transporter 2 Company Name

8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address
Michigan Disposal, Inc.
49350 North I-94 Service Drive
Belleville, MI 48111

10. US EPA ID Number: M I D 0 0 0 7 2 4 8 3 1

G. State Facility's ID

H. Facility's Phone 313-699-7120

	11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID NUMBER)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	15. Waste No.
a. X	RQ, Waste Hydrochloric Acid Corrosive Material UN1789 (D002,D006,D007,D008)	046	DM	25480	P	D002
b. X	RQ, Waste Chromic Acid Solution Corrosive Material UN1755 (D002, D006, D007, D008)	031	DM	17680	P	D002
c.						
d.						

GENERATOR

J. Additional Descriptions for Materials Listed Above
[redacted] Also, D006, D007, D008
[redacted] Also, D006, D007, D008
[redacted] 788-6534

K. Handling Codes for Wastes Listed Above
a/
b/
c/
d/

15. Special Handling Instructions and Additional Information
[redacted] 1.

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: Wil[illegible] Hulbert L. LaFlamme
Signature: [illegible]
Date: Month Day 04 09

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Virgil Kramer
Signature: Virgil Kramer
Date: Month Day 04 09

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name: Dick Hesselbart
Signature: Dick Hesselbart
Date: Month Day 04 15

FACILITY

19. Discrepancy Indication Space
(A) 50246 (3) 90-47

20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: Thomas Brun
Signature: [illegible]
Date: Month Day 04 15

ALL SPILLS MUST BE REPORTED TO THE MICHIGAN POLLUTION EMERGENCY ALERTING SYSTEM IN MI AT 1-800-292-4706 OR OUT OF STATE AT 517-373-7660 AND THE NATIONAL RESPONSE CENTER AT 1-800-424-8802 24 HOURS PER DAY.

EPA Form 8700-22 (Rev. 9/88)

GENERATOR 2nd COPY

D011 - TOXICITY CHARACTERSTIC HAZARDOUS WASTE

WASTES WHICH DO NOT MEET TREATMENT STANDARDS NOTICE FROM GENERATOR TO DISPOSAL FACILITY (40 CFR 268.7 (a) (1) (i))

wastes identified on manifest number MI 238790 and bearing the EPA Hazardous Waste Number(s) D006, D007, D008 are subject to the land disposal restrictions of 40 CFR Part 268. This waste does not meet the applicable treatment standards specified in Part 268 Subpart D or exceeds the prohibitions specified in 268.32 or RCRA section 3004(d). Analytical data, where available, has been previously supplied or is attached. All treatment standards or prohibition levels exceeded by the waste are circled and initialled below.

I. Applicable treatment standards from 40 CFR 268.41 (Table CCWE) or 268.42 (Tables 1 and 2) or 268.43 (Table CCW)

Hazardous Waste Description	Constituents of concern	NONWASTEWATER Total Composition mg/kg	NONWASTEWATER TCLP mg/L	WASTEWATER Total Composition mg/L
D004-Arsenic	Arsenic		5 **	5
D005-Barium	Barium		100	100
D006-Cadmium	Cadmium		1	1
D007-Chromium	Chromium(total)		5	5
D008-Lead			5	5
D009-Low-mercury sub-category (< 260 mg/kg total Hg)	Mercury		0.2 **	0.2
D009-High-mercury sub-category (> 260 mg/kg total Hg)		IMERC,RMERC **		0.2
D010-Selenium	Selenium		5.7	1
D011-Silver	Silver		5	5

** This waste is exempt from treatment standards until May 8, 1992

II. California List Prohibition Levels (40 CFR 268.32)

this waste contain any of the following constituents at levels greater than or equal to the California List Prohibition levels given below?

Yes	No	Constituents
__	X	1,000 mg/kg Halogenated Organic Compounds (HOC's listed in 268 Appendix III)
__	X	50 ppm. PCB's (liquid wastes)
__	X	134 mg/L Nickel (liquid wastes)
X	__	130 mg/L Thallium (liquid wastes)

III. Additional Hazardous Characteristics

__ No additional Hazardous Characteristics are exhibited by this waste which would require treatment beyond the standards described above.

X Treatment standards for the additional Hazardous Characteristics requiring treatment are indicated on the attached page.

IV. Certification

"All treatment standards and prohibition levels applicable to this waste are indicated above."

Company Name: X Rock Island Arsenal

Authorized Signature: X William S. Shore Date: x 4/9/91

8/90 R2

Form I

Michigan Disposal, Inc.

ENVIRONMENTAL PROTECTION FACILITY
49350 N. I-94 Service Drive
Belleville, Michigan 48111
(313) 697-7830 • FAX: (313) 699-3499

D002 - CORROSIVE CHARACTERISTIC HAZARDOUS WASTE

WASTES MEETING ALL APPLICABLE TREATMENT STANDARDS NOTICE AND CERTIFICATION FROM GENERATOR TO DISPOSAL FACILITY (40 CFR 268.7 (a) (2) (i))

The wastes identified on manifest number MI238701 and bearing the EPA Hazardous Waste Number(s) D002 subject to the land disposal restrictions of 40 CFR Part 268. This waste complies with the applicable treatment standards specified in Part 268 Subpart I prohibitions specified in 268.32 or RCRA section 3004(d). Analytical data, where available, has been previously supplied or is attached.

I. Applicable treatment standards from 40 CFR 268.41 (Table CCWE) or 268.42 (Tables 1 and 2) or 268.43 (Table CCW)

Hazardous Waste	Constituents of concern	NONWASTEWATER Total Composition mg/kg	NONWASTEWATER TCLP mg/L	WASTEWATER Total Composition mg/L
Acid corrosives		DEACT		DEACT
Alkaline corrosives		DEACT		DEACT
Other corrosives		DEACT		DEACT

II. California List Prohibition Levels (40 CFR 268.32)
Does this waste contain any of the following constituents at levels greater than or equal to the California List Prohibition levels given below?

Yes	No	Constituents
	X	1,000 mg/kg Halogenated Organic Compounds (HOC's listed in 268 Appendix III)
	X	50 ppm. PCB's (liquid wastes)
	X	134 mg/L Nickel (liquid wastes)
X		130 mg/L Thallium (liquid wastes)

III. Additional Hazardous Characteristics (select one)
__ No additional Hazardous Characteristics are exhibited by this waste which would require treatment beyond the standards described above.
X Treatment standards for the additional Hazardous Characteristics requiring treatment are indicated on the attached page.

IV. Certification
As required by 40 CFR 268.7 (a) (2), the following certification is made for these restricted wastes:

"I certify under penalty of law that I personally have examined and am familiar with the waste through analysis and testing or through knowledge of waste to support this certification that the waste complies with the treatment standards specified in 40 CFR Part 268 Subpart D and all applicable prohil set forth in 40 CFR 268.32 or RCRA section 3004 (d). I believe that the information I submitted is true, accurate and complete. I am aware that there a significant penalties for submitting a false certification, including the possibility of a fine and imprisonment."

Company Name: Rock Island Arsenal

Authorized Signature: William L. Shore Date: 4/9/91

8/90 R2
Form 2

Michigan Disposal, Inc.
ENVIRONMENTAL PROTECTION FACILITY
49350 N. I-94 Service Drive
Belleville, Michigan 48111
(313) 697-7830 • FAX: [illegible]

DNR
MICHIGAN DEPARTMENT OF NATURAL RESOURCES

DO NOT WRITE IN THIS SPACE
ATT. ☐ DIS. ☐ REJ. ☐ PR. ☐

1969

Failure to file is punishable under section 299.548 MCL or Section 10 of Act 136, P.A. 1969.

Please print or type.

Form Approved. OMB No. 2050-0039 Expires 9-30-91

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: IL521002183 3 — Manifest Document No.: 91036
2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Rock Island Arsenal
Building 1541
Rock Island, IL 61299-5000.

4. Generator's Phone (309) 788-6534

A. State Manifest Document Number: MI 2387702

B. State Generator's ID

5. Transporter 1 Company Name: Metropolitan Environmental
6. US EPA ID Number: IMNT190010397

C. State Transporter's ID

D. Transporter's Phone: 800-334-9139

7. Transporter 2 Company Name
8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address
Michigan Disposal, Inc.
49350 North I-94 Service Drive
Belleville, MI 48111

10. US EPA ID Number: MID000724831

G. State Facility's ID

H. Facility's Phone: 313-699-7120

	11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID NUMBER). HM		12. Containers No.	Type	13. Total Quantity	14. Unit Wt./Vol.	I. Waste No.	N/H
a.	X	RQ, Waste Chromic Acid Solution Corrosive Material UN1755 (D002,D006,D007,D008)	068	DF	40803	P	D002	H
b.								
c.								
d.								

J. Additional Descriptions for Materials Listed Above
a. MDI # 041091MG, Also, D006, D007, D008, 001D
EGB # 60
Emergency # 309-788-6534

K. Handling Codes for Wastes Listed Above
a/ /
b/ /
c/ /
d/ /

15. Special Handling Instructions and Additional Information
DLA200-91-D-0007, Delivery Or[illegible]

16. GENERATOR'S CERTIFICATION: I hereby declare that the co[illegible] of this consig[illegible] are fully and accurately described above by proper shipping name and are classified, packed, marked, and [illegible] respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR; if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: David Foss / William L. LaFrenz — Signature: David Foss / William L LaFrenz — Date (Month Day Year): 04 04 91

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Kenneth R. Kruse — Signature: Kenneth R Kruse — Date (Month Day Year): 04 04 91

18. Transporter 2 Acknowledgement or Receipt of Materials
Printed/Typed Name: James R Bradley — Signature: James R Bradley — Date (Month Day Year): 04 15 91

19. Discrepancy Indication Space
LWH TK12
Add slowly
90756

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: [illegible] — Signature: [illegible] — Date (Month Day Year): 04 15 91

GENERATOR

TRANSPORTER

FACILITY

ALL SPILLS MUST BE REPORTED TO THE MICHIGAN POLLUTION EMERGENCY ALERTING SYSTEM [illegible] MICHIGAN AT 1-800-292-4706 OR OUT OF STATE AT 517-373-7660 AND THE NATIONAL RESPONSE CENTER AT 1-800-424-8802 24 HOURS PER DAY.

EPA Form 8700-22 (Rev. 9/88)

PR 5110 Rev. 9/90

TSDF COPY

Profile # W52HIB

WASTE PROFILE SHEETS

W52HIB 2928 9064
91-001

General Directions: In order for us to determine whether we can lawfully and safely transport, treat, and dispose of your waste material, we must obtain certain information about the chemical and physical properties of the waste and its chemical composition. Please be complete in your answers; if your response is "none" or "not available" indicate. Answers must be printed in ink or typewritten and the completed form must be signed. Please make a copy of this form for your records.

(1.) Generator Name: Rock Island Arsenal (RIA) EPA Generator No.: IL5210021833

(2.) Generating Facility Complete Address:
Commander, Rock Island Arsenal, ATTN: SMCRI-SEM (Dr. Shore) Rock Island, IL 61299-5000

(3.) Authorized Company Representative: Dr. William Shore Title: Environmental Coordinator

(4.) Phone Number: (309) 782- 7855

(5.) Emergency Contact RIA Fire Department Title: Shift Chief Phone: (309) 782-5148

(6.) General Description of The Waste: Chromium Plating Sludge

(7.) Process Generating Waste: Plating Shop Tanks cc 9064

(8.) Anticipated volume 6,000 [X] Gallons [ ] Tons [ ] Cubic Yards [ ] Drums, or [ ] Other
Per: [ ] Day [ ] Week [ ] Month [X] Year, or [ ] Other

(9.) Waste Properties:
(a.) Vapor pressure (in mm of Hg @ 25°C) Lab analysis attached.
(b.) Flash Point >200° [X] °F [ ] °C [ ] Closed Cup [ ] Open Cup
(c.) Phases/layers: [X] Single [ ] Bilayered [ ] Multilayered
(d.) Physical State @ 20 °C: [ ] Solid [ ] Liquid [X] Semi-Solid [ ] Powder [ ] Other
(e.) pH <2 (f.) Solubility (g/100g H_2O) @ 20°C:
(g.) Density: 11 [ ] lb./ft.^{3} [ ] lb./yd.^{3} [X] lb./gal. [ ] g/cc
(h.) Odor: [ ] Strong [X] Mild [ ] None
(i.) Reactivity: Water [ ] Yes [X] No Autopolymerizable [ ] Yes [X] No Shock Sensitive [ ] Yes [X] No
Pyrophoric [ ] Yes [X] No Thermally Sensitive [ ] Yes [X] No Explosive [ ] Yes [X] No

(10.) Complete waste composition (with ranges—indicate % or ppm.) Attach Additional Pages if Necessary

ORGANIC	INORGANIC		
See Lab Analysis	Cd = 120 ppm	Zn = 27 ppm	Co = 14 ppm
	Cr = 384 Kppm	Sn = 1.88 Kppm	Mg = 426 ppm
	Cu = 442 ppm	Fe = 3.79 Kppm	Mn = 59 ppm
	Ni = 24 ppm	Al = 364 ppm	

(11.) Sample Included [ ] Yes [X] No

(12.) Is this waste a "Hazardous Waste" as defined by regulations of the U.S. Environmental Protection Agency pursuant to 40 CFR § 261 of the Resource Conservation and Recovery Act? Yes

(13.) Manifest Information

Proper USDOT Shipping Name	USDOT Hazard Class	UN or NA No.	USEPA Haz. Code	USEPA Haz. Waste No. (Type)
Waste Chromic Acid ~~Liquid~~ Solution	Corrosive material	UN1755	T	D002 D006 D007

(14.) This waste contains: Biological Materials [ ] Yes [X] No Pathogens [ ] Yes [X] No Etiological Agents [ ] Yes [X] No
Radioactive Materials [ ] Yes [X] No PCB's [ ] Yes [X] No Dioxin [ ] Yes [X] No
If yes, specify type (if applicable) and concentration:

(15.) Have you obtained toxicity studies of this waste material? No If so, please attach a copy of the results.

(16.) Required personal protective equipment & procedures: 1

I hereby certify that the above and attached description is complete and accurate to the best of my knowledge and ability to determine, that no deliberate or willful omissions of composition or properties exists, and that all known or suspected hazards have been disclosed.

Generator's Authorized Signatory
William Shore Title Environmental Coordinator Date 8/24/90

HIN 2928 @.50/LB

DNR
MICHIGAN DEPARTMENT OF NATURAL RESOURCES

21 Y 1991

DO NOT WRITE IN THIS SPACE
ATT. ☐ DIS. ☐ REJ. ☐ PR. ☐

Required under authority of Act 64, P.A. 1979, as amended and Act 136, P.A. 1969

Failure to file is punishable under section 299.548 MCL or Section 10 of Act 136, PA 1969.

Please print or type.

Form Approved. OMB No. 2050-0039 Expires 9-30-91

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: I L 5 2 1 0 0 2 1 8 3 3 — Manifest Document No.: 9 1 0 4 3
2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Rock Island Arsenal
Building 154
Rock Island, IL 61299-5000

4. Generator's Phone (309) 788-6534

A. State Manifest Document Number: MI 2387727

B. State Generator's ID: 1618130001

5. Transporter 1 Company Name: Easton Corporation
6. US EPA ID Number: O H D 0 7 2 8 6 4 3 9 0

C. State Transporter's ID: 2288

D. Transporter's Phone: 513-222-1109

7. Transporter 2 Company Name:
8. US EPA ID Number:

E. State Transporter's ID:

F. Transporter's Phone:

9. Designated Facility Name and Site Address
Michigan Disposal, Inc.
49350 North I-94 Service Drive
Belleville, MI 48111

10. US EPA ID Number: M I D 0 0 0 7 2 4 8 3 1

G. State Facility's ID:

H. Facility's Phone: 313-699-7120

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID NUMBER).	HM	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.	N/H
a. RQ, Hazardous Waste Solid, n.o.s. GRM-Z NA9189 (D007) (Furnace Dust)	X	010	DM	02114	P	D007	H
b. RQ, Waste Hydrochloric Acid Corrosive Material UN1789 (D002) D006, D007, D008)	X	017	DM	09312	P	D002	H
c. RQ, Hazardous Waste Solid, n.o.s. GRM-Z NA9189 (D006) (Zinc, Phosphate Sludge)	X	008	DM	04890	P	D006	H
d. RQ, Waste Chromic Acid Corrosive Material UN1755 (D002, D006, D007, D008)	X	006	DM	03605	P	D002	

J. Additional Descriptions for Materials Listed Above
a) [illegible] EGB # 31
b) [illegible] EGB # 60; Also D006, D007, D008
c) [illegible] EGB # 31
d) [illegible] EGB # 60; Also D006, D007, D008
Emergency #: (309) 788-6534

K. Handling Codes for Wastes Listed Above: a/ b/ c/ d/

15. Special Handling Instructions and Additional Information: DLA200-91-D-0007/D. O. # 1, Item 1/ D. O. # 4, Items 1-3, 7-11, 23, 28, 29, 31, 40, 53-55, 58, 75-77/ D. O. # 5, Items 10-14/[illegible] D.O. # 11, Items 6-8, 57-57

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR; if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: William L. LaFrenz — Signature: [signature] — Date: Month 05 Day 02 Year 91

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: [signature] — Signature: [signature] — Date: Month 05 Day 02 Year 91

18. Transporter 2 Acknowledgement or Receipt of Materials
Printed/Typed Name: — Signature: — Date: Month Day Year

19. Discrepancy Indication Space
(A) 91403 (C) 91405
(B) 91404 (D) 91406

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: Thomas Brunt — Signature: [signature] — Date: Month Day Year 05 09 91

ALL SPILLS MUST BE REPORTED TO THE MICHIGAN POLLUTION EMERGENCY ALERTING SYSTEM, IN MICHIGAN AT 1-800-292-4706 OR OUT OF STATE AT 517-373-7660 AND THE NATIONAL RESPONSE CENTER AT 1-800-424-8802 24 HOURS PER DAY.

EPA Form 8700-22 (Rev. 9/88)

WASTE PROFILE SHEETS AND MANIFESTS FOR WASTES REFERRED TO IN TABLE 3-7

State Form IPC 6/8/81 IL 532-0610 AND SPECIAL WASTE

NOTE: FORM DESIGNED TO PRINT 8 LINES PER INCH **EPA Form 8700-22 (Rev. 6-89)** Form Approved OMB No. 2050-0039 Expires 9-9-

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. IL 5 2 1 0 0 2 1 8 3 3 | Manifest Document No. 90136

2. Page 1 of 1

Information in the shaded areas is not required by Federal law but is required by Illinois law.

3. Generator's Name and Mailing Address / Location If Different
Rock Island Arsenal, Bldg 154, Arsenal Island
Rock Island IL 61299 Discrep

A. Illinois Manifest Document Number IL4290892 MANIFEST FEE PAID

4. Generator's Phone (309) 782-1619

B. Illinois Generator's ID 1 6 1 8 1 3 0 0 0 1

5. Transporter 1 Company Name: GSX Services Incorporated
6. US EPA ID Number: M D D 9 8 0 5 5 4 6 5 3

C. Illinois Transporter's ID 1 8 8 7
D. (803) 798-2993 Transporter's Phone

7. Transporter 2 Company Name
8. US EPA ID Number

E. Illinois Transporter's ID
F. ( ) Transporter's Phone

9. Designated Facility Name and Site Address
Special Waste Incorporated
1713 Legion Road
Athens, TN 37303
10. US EPA ID Number: T N D 0 3 4 5 4 7 1 4 1

G. Illinois Facility's ID 9 4 7 1 0 7 0 0 0 1
H. Facility's Phone ( ) (615) 745-9222

GENERATOR

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	Waste No.
a. 'RQ' Waste Corrosive Liquid N.O.S. Corrosive Material UN1760 (D002,D006,D007) (Plating Acid,Chromium,Cadmium)	0.2.7	D.F	0.1.4.8.5	1	EPA HW Number XXD002 Authorization Number
b. 'RQ' Waste Corrosive Liquid N.O.S. Corrosive Material UN1760 (D002,D006,D007,D008) (Plating Acid Sludge, Heavy Metals)	0.1.2	D.F	0.0.6.6.0	1	EPA HW Number XXD002 Authorization Number
c. 'RQ' Hazardous Waste Liquid N.O.S. ORM-E NA9189 (D006,D007,D008) (Tank Sludges, Heavy Metals)	0.0.3	D.F	0.0.1.6.5	1	EPA HW Number XXD006 Authorization Number
d. 'RQ' Hazardous Waste Liquid N.O.S. ORM-E NA9189 (D006,D007,D008) (Tank Liquid and metals)	US 24 0.2.5	DM	1320 0.1.2.6.5	1	EPA HW Number XXD006 Authorization Number

J. Additional Descriptions for Materials Listed Above
a. 833420 also D006,D007
3DM=3DF b. 833421 also D006,D007,D008
c. 833422 also D007,D008 1DM=1DF
d. 833423 also D007,D008
Truck# Y07
P.O.# JF
DLA-200-89-D-034/[redacted]

K. Handling Codes for Wastes Listed Above In Item # 14
1 = Gallons 2 = Cubic Yards

15. Special Handling Instructions and Additional Information 24HR. Emergency Phone# (309) 782-6534
GSX IS THE HAZARDOUS WASTE CONTRACTOR FOR THIS FACILITY. Guide DOT-P-5800.4
PLEASE ROUTE ALL BILLING AND CORRESPONDENCE TO:
GSX; P.O. BOX 140, SAUKVILLE,WI 53080 a.60 b.60 c.31 d.31

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name	Signature	Month Day Year
William LaFreaz/DAVID A. FOSS	William LaFreaz/David A. Foss	1 2 1990

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month Day Year
JEFFREY FERGUSON	Jeffrey Ferguson	1 2 1990

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month Day Year

FACILITY

19. Discrepancy Indication Space
LINE D - Item count and quanity changed per generator (Rebecca Leaf) via phone conversation with Jim Ward (Landlord) 1/2/90 WGM

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in item 19.

Printed/Typed Name	Signature	Month Day Year
William G Melton	[signature]	0 1 0 2 9 0

To Accident notification: Pursuant to Illinois Revised Statutes Chapter 111½, Section 1, that this information be submitted to the Agency. Failure to provide the information may result in a civil penalty of not less than $1,000 for each day of violation. Falsification of this information may result in a fine of up to $50,000 per day of violation and imprisonment up to 5 years. This form has been approved by the Illinois Manifest Center.

COPY 1. TSD MAIL TO GENERATOR

State Form LPC 62 8/81 IL532-0610 AND SPECIAL WASTE

DESIGNED TO PRINT 8 LINES PER INCH **EPA Form 8700-22 (Rev. 6-89)** Form Approved OMB No. 2050-0039 Expires 9-30-91

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. I L 5 2 1 0 0 2 1 8 3 3 | Manifest Document No. 90136

2. Page 1 of 1

Information in the shaded areas is not required by Federal law, but is required by Illinois law

Generator's Name and Mailing Address: Rock Island Arsenal, Bldg 154, Arsenal Island, Rock Island IL 61299

Location If Different:

A. Illinois Manifest Document Number: IL4290892 MANIFEST FEE PAID

B. Illinois Generator's ID: 1 6 1 8 1 3 0 0 0 1

4. Generator's Phone: (309) 782-1619

5. Transporter 1 Company Name: GSX Services Incorporated

6. US EPA ID Number: M D D 9 8 0 5 5 4 6 5 3

C. Illinois Transporter's ID: 1 8 8 7

D. (803) 798-2993 Transporter's Phone

7. Transporter 2 Company Name

8. US EPA ID Number

E. Illinois Transporter's ID

F. ( ) Transporter's Phone

9. Designated Facility Name and Site Address: Special Waste Incorporated, 1713 Legion Road, Athens, TN 37303

10. US EPA ID Number: T N D 0 3 4 5 4 7 1 4 1

G. Illinois Facility's ID: 9 4 7 1 0 7 0 0 0 1

H. Facility's Phone: ( ) (615) 745-9222

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. 'RQ' Waste Corrosive Liquid N.O.S. Corrosive Material UN1760 (D002,D006,D007) (Plating Acid,Chromium,Cadmium)	0.2.7	D.F	0 1 4 8 5	1	EPA HW Number X X D 0 0 2 Authorization Number
b. 'RQ' Waste Corrosive Liquid N.O.S. Corrosive Material UN1760 (D002,D006,D007,D008) (Plating Acid Sludge, Heavy Metals)	0.1.2	D.F	0 0 6 6 0	1	EPA HW Number X X D 0 0 2 Authorization Number
c. 'RQ' Hazardous Waste Liquid N.O.S. ORM-E NA9189 (D006,D007,D008) (Tank Sludges, Heavy Metals)	0.0.3	D.F	0 0 1 6 5	1	EPA HW Number X X D 0 0 6 Authorization Number
d. 'RQ' Hazardous Waste Liquid N.O.S. ORM-E NA9189 (D006,D007,D008) (Tank Liquid and metals)	0.2.3	DM	0 1 2 6 5	1	EPA HW Number X X D 0 0 6 Authorization Number

J. Additional Descriptions for Materials Listed Above
a. 833420 also D006,D007
3DM=3DF b. 833421 also D006,D007,D008
c. 833422 also D007,D008 1DM=1DF
d. 833423 also D007,D008
Truck# Y07
P.O.# JF
DLA-200-89-D-034/151

K. Handling Codes for Wastes Listed Above In Item # 14
1 = Gallons 2 = Cubic Yards

15. Special Handling Instructions and Additional Information 24HR. Emergency Phone# (309) 788-6534
GSX IS THE HAZARDOUS WASTE CONTRACTOR FOR THIS FACILITY. Guide DOT-P-5800.4
PLEASE ROUTE ALL BILLING AND CORRESPONDENCE TO:
GSX; P.O. BOX 140, SAUKVILLE,WI 53080 a.60 b.60 c.31 d.31

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

GENERATOR

Printed/Typed Name: William LaFranz/DAVID A. FOSS | Signature: William LaFranz/David A. Foss | Date Month Day Year: 1 2 1 9 9 0

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: JEFFREY FERGERSON | Signature: Jeffrey Fergerson | Date Month Day Year: 1 2 1 9 9 0

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name | Signature | Date Month Day Year

TRANSPORTER

19. Discrepancy Indication Space

FACILITY

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in item 19.

Printed/Typed Name | Signature | Date Month Day Year

In case of a spill call the Illinois Office of Emergency Response at 217/782-3637 and the National Response Center at 800/424-8802 or 202/426-2675.

Agency is authorized to require pursuant to Illinois Revised Statutes, Chapter 111½ Section 21, that this information be submitted to the Agency. Failure to provide the information may result in a civil penalty against the owner or operator of not to exceed $25,000 per day of violation. Falsification of this information may result in a fine up to $50,000 per day of violation and imprisonment up to 5 years. This form has been approved by the Forms Management

COPY 1. TSD MAIL TO GENERATOR

SUPPLEMENTAL DOCUMENT TO BLOCK J

MANIFEST # IL4240892-90136

MANF. LINE ITEM	DO #	CLIN	HIN	ITEM DESCRIPTION	# OF CONT.	VOL.
A	151	1→53 Every odd	2901	Plating Tank - Every odd Line # 1 through 53 inclusive		1485GL
		2→54 Every Even	1201	Container - Every even # 2 through 54	27	
B	151	55→77 Every odd	2901	Plating Acid Tank - Every odd # Line 55 through 77		660GL
		56-78 Every Even	1201	9 DF and 3 DM	12	
C		0079	2901	Plating Tank Liquid		55gal
		0141	2901	↓ ↓ ↓		55gal
		0143	2901			55gal
		0080	1201	Container 1x55gal		
		0142	1201	1x55gal		
		0144	1201	↓ 1x55gal	3	165GL
D	151	81→127 Every odd	2901	Plating Tank Sludge Every line #- odd 81-127		1265GL
		82-128 Every Even	1201	Container	23	

CONTRACT # DLA-200-89-D 0034

GSX GOVERNMENT SERVICES, INC.

SIGNATURE Chris Goldbach

DATE 12-19-90

C.O.R.

SIGNATURE William L [illegible]

DATE 19 Dec 90

REV. (9/5/90)

Generator Name/Location: Rock Island Arsenal, Rock Island IL

EPA ID Number: IL5210021833 Manifest Number: IL4240892 - 90136

Drum Number, Waste Profile or ARF Number	Category No.	State EPA Waste Number(s)	Corresponding Treatment Standard/ Applicable Variance/Other Information
833423	2	D006	NWW Refer to S268.41 table CCWE
	2	D007	NWW Refer to S268.41 table CCWE
	2	D008	NWW Refer to S268.41 table CCWE

SIGNATURE: David A. Foss TITLE: Physical Scientist

PRINT NAME: DAVID A. FOSS DATE: 19 Dec 90

ONLY ORIGINAL SIGNATURES WILL BE ACCEPTED!

September 23, 1988

* *For Treatment Standards Expressed as Concentration, Please Enter the Legend Number from the Legend Below for the Constituents contained in the Waste.*

LEGEND FOR TREATMENT STANDARDS EXPRESSED AS CONCENTRATION

TABLE CCWE-CONSTITUENTS IN WASTE EXTRACT

F001-F005 spent solvent		Concentration (in mg/l) Waste Water Containing Spent Solvents	All other Spent Solvent Wastes
Legend #	Constituent Name		
1	Acetone	0.05	0.59
2	n butyl alcohol	5.0	5.0
3	Carbon disulfide	1.05	4.81
4	Carbon Tetrachloride	.05	.96
5	Chlorobenzene	.15	.05
6	Cresols (and cresylic acid)	2.82	.75
7	Cyclohexanone	.125	.75
8	1,2-dichlorobenzene	.65	.125
9	Ethyl acetate	.05	.75
10	Ethyl benzene	.05	.053
11	Ethyl ether	.05	.75
12	Isobutanol	5.0	5.0
13	Methanol	.25	.75
14	Methylene chloride	.20	.96
15	Methylene chloride (from the pharmaceutical industry)	0.44	.96
16	Methyl ethyl ketone	0.05	0.75
17	Methyl isobuty ketone	0.05	0.33
18	Nitrobenzene	0.66	0.125
19	Pyridine	1.12	0.33
20	Tetrachlorethylene	0.079	0.05
21	Toluene	1.12	0.33
22	1,1,1-Trichloroethane	1.05	0.41
23	1,2,2-richloro-1,2,2-trifluoroethane	1.05	0.96
24	Trichloroethylene	0.062	0.091
25	Thrichlorofluoromethane	0.05	0.96
26	Xylene	0.05	0.15

F010-F023 and F026-F028 dioxin Containing Waste		Concentration
Legend #	Constituent Name	
27	HxCDD-All Hexachlorodibenzo-p-dioxins	1 ppb
28	HxCDF-All Hexachlorodibenzofurans	1 ppb
29	PeCdd-All Pentachlorodibenzo-p-dioxins	1 ppb
30	PeCDF-All Pentachlorodibenzofurans	1 ppb
31	TCDD-All Tetrachlorodibenzo-p-dioxins	1 ppb
32	TCDF-All Tetrachlorodibenzofurans	1 ppb
33	2,4,5-Trichlorophenol	0.05 ppm
34	2,4,6-Trichlorophenol	0.05 ppm
35	2,3,4,6-Tetrachlorophenol	0.10 ppm
36	Pentachlorophenol	0.01 ppm

CALIFORNIA LIST WASTES

37	Nickel	134 mg/l
38	Thallium	130 mg/l
39	Cyanide (Liquid)	1000 mg/l

Generator Name/Location: Rock Island Arsenal, Rock Island IL

EPA ID Number: IL5210021833 Manifest Number: IL4290 842 -90136

Drum Number, Waste Profile or ARF Number	Category No.	State EPA Waste Number(s)	Corresponding Treatment Standard/ Applicable Variance/Other Information
833420	2	D002	NWW Acid Liquid DEACT- Refer to 268.42 table 2
	2	D006	NWW Refer to S268.41 table CCWE
	2	D007	NWW Refer to S268.41 table CCWE
	2	D008	NWW Refer to S268.41 table CCWE
833421	2	D002	NWW Acid Liquid Refer to S268.41 table CCWE
	2	D006	NWW Refer to S268.41 table CCWE
	2	D007	NWW Refer to S268.41 table CCWE
	2	D008	NWW Refer to S268.41 table CCWE
833422	2	D006	NWW Refer to S268.41 table CCWE
	2	D007	NWW Refer to S268.41 table CCWE
	2	D008	NWW Refer to S268.41 table CCWE

SIGNATURE: David A. Foss TITLE: Physical Scientist

PRINT NAME: DAVID A FOSS DATE: 19 Dec 90

ONLY ORIGINAL SIGNATURES WILL BE ACCEPTED

September 23, 1988

* For Treatment Standards Expressed as Concentration, Please Enter the Legend Number from the Legend Below for the Constituents contained in the Waste.

LEGEND FOR TREATMENT STANDARDS EXPRESSED AS CONCENTRATION

TABLE CCWE-CONSTITUENTS IN WASTE EXTRACT

F001-F005 spent solvent		Concentration (in mg/l) Waste Water Containing Spent Solvents	All other Spent Solvent Wastes
Legend #	Constituent Name		
1	Acetone	0.05	0.59
2	n-butyl alcohol	5.0	5.0
3	Carbon disulfide	1.05	4.81
4	Carbon Tetrachloride	.05	.96
5	Chlorobenzene	.15	.05
6	Cresols (and cresylic acid)	2.82	.75
7	Cyclohexanone	.125	.75
8	1,2-dichlorobenzene	.65	.125
9	Ethyl acetate	.05	.75
10	Ethyl benezene	.05	.053
11	Ethyl ether	.05	.75
12	Isobutanol	5.0	5.0
13	Methanol	.25	.75
14	Methylene chloride	.20	.96
15	Methylene chloride (from the pharmaceutical industry)	0.44	.96
16	Methyl ethyl ketone	0.05	0.75
17	Methyl isobuty ketone	0.05	0.33
18	Nitrobenzene	0.66	0.125
19	Pyridine	1.12	0.33
20	Tetrachlorethylene	0.079	0.05
21	Toluene	1.12	0.33
22	1,1,1-Trichloroethane	1.05	0.41
23	1,2,2-tichloro-1,2,2-trifluorethane	1.05	0.96
24	Trichloroethylene	0.062	0.091
25	Thrichlorofluoromethane	0.05	0.96
26	Xylene	0.05	0.15

F010 F023 and F026-F028 dioxin Containing Waste		Concentration
Legend #	Constituent Name	
27	HxCDD-All Hexachlorodibenzo p-dioxins	1 ppb
28	HxCDF-All Hexachlorodibenzofurans	1 ppb
29	PeCdd-All Pentachlorodibenzo-p-dioxins	1 ppb
30	PeCDF-All Pentachlorodibenzofurans	1 ppb
31	TCDD-All Tetrachlorodibenzo-p-dioxins	1 ppb
32	TCDF-All Tetrachlorodibenzofurans	1 ppb
33	2,4,5-Trichlorophenol	0.05 ppm
34	2,4,6-Trichlorophenol	0.05 ppm
35	2,3,4,6-Tetrachlorophenol	0.10 ppm
36	Pentachlorophenol	0.01 ppm

CALIFORNIA LIST WASTES

37	Nickel	134 mg/l
38	Thallium	130 mg/l
39	Cyanide (Liquid)	1000 mg/l

State Form LPC 62 8/81 IL532-0610 AND SPECIAL WASTE

DESIGNED TO PRINT 8 LINES PER INCH — EPA Form 8700-22 (Rev. 6-89) — Form Approved OMB No. 2050-0039 Expires 9-30-91

FORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No: 1 L 5 2 1 0 0 2 1 8 3 3 — Manifest Document No: 90137

2. Page 1 of 1

Information in the shaded areas is not required by Federal law, but is required by Illinois law.

3. Generator's Name and Mailing Address / Location If Different:
Rock Island Arsenal, Bldg 154, Arsenal Island
Rock Island IL 61299

4. Generator's Phone: 309) 782-1619

A. Illinois Manifest Document Number: IL4290893 MANIFEST FEE PAID

B. Illinois Generator's ID: 1 6 1 8 1 3 0 0 0 1

5. Transporter 1 Company Name: GSX Services Incorporated

6. US EPA ID Number: M D D 9 8 0 5 5 4 6 5 3

C. Illinois Transporter's ID: 1 8 8 7

D. (803) 798-2993 Transporter's Phone

7. Transporter 2 Company Name

8. US EPA ID Number

E. Illinois Transporter's ID

F. ( ) Transporter's Phone

9. Designated Facility Name and Site Address:
Special Waste Incorporated
1713 Legion Road
Athens, TN 37303

10. US EPA ID Number: T N D 0 3 4 5 4 7 1 4 1

G. Illinois Facility's ID: 9 4 7 1 0 7 0 0 0 1

H. Facility's Phone: ( ) (615) 745-9222

GENERATOR

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. 'RQ' Waste Hydrofluoric Acid Solution Corrosive Material UN1790 (D002,D006,D007,D008)	005	DF	00275	1	EPA HW Number XXD002 / Authorization Number
b. Waste Combustible Liquid N.O.S. Combustible Liquid NA1993 (F001) (Oil, Trichloroethane)	001	DF	00020	1	EPA HW Number XXF001 / Authorization Number
c. 'RQ' Waste Corrosive Liquid N.O.S. Corrosive Material UN1760 (D002,D006,D007,D008) (Triethanolamine, Sodium Hydroxide)	003	DM	00165	1	EPA HW Number XXD002 / Authorization Number
d. 'RQ' Hazardous Waste Solid N.O.S. ORM-E NA9189 (D006,D007,D008) (Tank Sludge, Heavy Metals)	001	DM	00001	2	EPA HW Number XXD006 / Authorization Number

J. Additional Descriptions for Materials Listed Above
a. 833424 also D006,D007,D008 — 1 DM = 1 DF
b. 833381 — Truck# Y07
c. 833425 also D006,D007,D008 — P.O.# JF
d. 833442 also D007,D008 — 1 yd³ = 345#
DLA-200-89-D-034/ 151

K. Handling Codes for Wastes Listed Above In Item # 14
1 = Gallons 2 = Cubic Yards

15. Special Handling Instructions and Additional Information — 24 HR. EMERGENCY Phone (309) 782-6534
GSX IS THE HAZARDOUS WASTE CONTRACTOR FOR THIS FACILITY. Guide DOT-P-5800.4
PLEASE ROUTE ALL BILLING AND CORRESPONDENCE TO:
GSX; P.O. BOX 140, SAUKVILLE, WI 53080 a.60 b.27 c.60 d.31

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: William L. Lafrenz / DAVID A. FOSS — Signature: William L. Lafrenz / David A. Foss — Date (Month Day Year): 1 2 1 9 9 0

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: JEFFREY FERGERSON — Signature: Jeffrey Ferguson — Date (Month Day Year): 1 2 1 9 9 0

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name — Signature — Date (Month Day Year)

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in item 19.
Printed/Typed Name — Signature — Date (Month Day Year)

Agency, is authorized to require pursuant to Illinois Revised Statutes, Chapter 111½, Section 21, that this information be submitted to the Agency. Failure to provide the information may result in a civil penalty against the owner or operator of not to exceed $25,000 per day of violation. Falsification of this information may result in a fine up to $50,000 per day of violation and imprisonment up to 5 years. This form has been approved by the Forms Management Center.

In case of a spill call the Illinois Office of Emergency Response at 217/782-3637 and the National Response Center at 800/424-8802 or 202/426-2675.

COPY 1. TSD MAIL TO GENERATOR

P O BOX 19276 SPRINGFIELD, ILLINOIS 62794-9276 (217) 782-6761 AND SPECIAL WASTE

State Form LPC 62 8/81 IL532-0610

FORM DESIGNED TO PRINT 8 LINES PER INCH

EPA Form 8700-22 (Rev. 6-89)

Form Approved OMB No. 2050-0039 Expires 9

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: IL5210021833 — Manifest Document No.: ~~[illegible]~~ 91610

2. Page 1 of 1

Information in the shaded areas is not required by Federal law, but is required by Illinois law.

3. Generator's Name and Mailing Address — Location If Different:
Rock Island Arsenal
Bldg.154,Arsenal Island, Rock Island,IL

4. Generator's Phone (309 782-1619 61299

A. Illinois Manifest Document Number: IL4290979 MANIFEST FEE PAID

B. Illinois Generator's ID: 1 6 1 8 1 3 0 0 0 1

5. Transporter 1 Company Name: Enviromental Transportation Service

6. US EPA ID Number: OKD981605363

C. Illinois Transporter's ID: 1 8 5 9

D. (405 677-8781 Transporter's Phone

7. Transporter 2 Company Name:

8. US EPA ID Number:

E. Illinois Transporter's ID:

F. ( ) Transporter's Phone

9. Designated Facility Name and Site Address:
Special Waste Inc.
1713 Legion Road
Athens TN, 37303

10. US EPA ID Number: TND034547141

G. Illinois Facility's ID:

H. Facility's Phone: (615 745-9222

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. "RQ" Hazardous Waste Liquid,N.O.S. ORM-E,NA9189(D006,D007,D008) (Plating Sludge)	0.68	DM	03740	1	EPA HW Number: XX D006 Authorization Number:
b.					EPA HW Number: XX Authorization Number:
c.					EPA HW Number: XX Authorization Number:
d.					EPA HW Number: XX Authorization Number:

J. Additional Descriptions for Materials Listed Above
A)833~~[illegible]~~ 422 ADD HW#D007, D008

Truck#C10 PO# 17634

K. Handling Codes for Wastes Listed Above In Item # 14
1 = Gallons 2 = Cubic Yards

15. Special Handling Instructions and Additional Information
A)Guide#31
24 Hour Emergency # (1-309) 788-6534
Send all correspondence and billing to:
GSX,Inc.,PO Box 140,Saukville, WI 53080 DLA-200-89-D-0034 DO# [illegible]

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

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Printed/Typed Name	Signature	Date (Month Day Year)
William L. LeFevre WILLIAM S SHORE	William L. LeFevre, William S. Shore	01 09 91

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date (Month Day Year)
Bobby Gillespie	Bobby Gillespie	01 09 91

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date (Month Day Year)

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in item 19.

Printed/Typed Name	Signature	Date (Month Day Year)

GENERATOR — TRANSPORTER — FACILITY

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COPY 1. TSD MAIL TO GENERATOR

STATE OF ILLINOIS

ENVIRONMENTAL PROTECTION AGENCY DIVISION OF LAND POLLUTION CONTROL

P.O. BOX 19276 SPRINGFIELD, ILLINOIS 62794-9276 (217) 782-6761

State Form LPC 62 8/81 IL532-0610

FOR SHIPMENT OF HAZARDOUS WASTE AND SPECIAL WASTE

NOTE: FORM DESIGNED TO PRINT 8 LINES PER INCH. **EPA Form 8700-22 (Rev. 6-89)** Form Approved OMB No. 2050-0039 Expires 9-...

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: IL5210021833 — Manifest Document No.: ~~[illegible]~~ 91010

2. Page 1 of 1 — Information in the shaded areas is not required by Federal law but required by Illinois law.

3. Generator's Name and Mailing Address — Location If Different:
Rock Island Arsenal
Bldg.154,Arsenal Island, Rock Island,IL

4. Generator's Phone: (309) 782-1619 61299

A. Illinois Manifest Document Number: IL4290979 MANIFEST FEE PAID

B. Illinois Generator's ID: 1 6 1 8 1 3 0 0 0 1

5. Transporter 1 Company Name: Enviromental Transportation Service

6. US EPA ID Number: OKD981605363

C. Illinois Transporter's ID: 1 8 5 9

D. (405) 677-8781 Transporter's Phone

7. Transporter 2 Company Name:

8. US EPA ID Number:

E. Illinois Transporter's ID:

F. ( ) Transporter's Phone

9. Designated Facility Name and Site Address:
Special Waste Inc.
1713 Legion Road
Athens TN, 37303

10. US EPA ID Number: TND034547141

G. Illinois Facility's ID: 9 4 7 1 0 7 0 0 0 1

H. Facility's Phone: (615) 745-9222

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. "RQ" Hazardous Waste Liquid,N.O.S. ORM-E,NA9189(D006,D007,D008) (Plating Sludge)	0.68	DM	03740	1	EPA HW Number: XX D006 Authorization Number:
b.					EPA HW Number: XX Authorization Number:
c.					EPA HW Number: XX Authorization Number:
d.					EPA HW Number: XX Authorization Number:

J. Additional Descriptions for Materials Listed Above
A)833~~[illegible]~~ 422 ADD HW#D007, D008

Truck#C10 PO# 17634

K. Handling Codes for Wastes Listed Above In Item # 14
1 = Gallons 2 = Cubic Yards

15. Special Handling Instructions and Additional Information
A)Guide#31
24 Hour Emergency # (1-309) 782-6534
Send all correspondence and billing to:
GSX,Inc.,PO Box 140,Saukville, WI 53080 DLA-200-89-D-0034 DO# 160, 160

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: William S Shore — Signature: William S Shore — Date: Month 01 Day 09 Year 91

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Bobby Gillespie — Signature: Bobby Gillespie — Date: Month 01 Day 09 Year 91

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name: — Signature: — Date: Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in item 19.
Printed/Typed Name: William G Melton — Signature: [signature] — Date: Month 01 Day 14 Year 91

The Agency is authorized to require pursuant to Illinois Revised Statutes, Chapter 111½, Section 21, that this information be submitted to the Agency. Failure to provide the information may result in a fine per day of the owner operator of not to exceed $25,000 per day of violation. Falsification of this information may result in a fine up to $50,000 per day of violation and imprisonment up to 5 years. This form has been approved by the Forms Management Center.

COPY 1 TSD MAIL TO GENERATOR

Generator Name/Location: Rock Island Arsenal, Rock Island, IL

EPA ID Number: IL5210021833 Manifest Number: IL4290975 -91010

Drum Number, Waste Profile or ARF Number	Category No.	State EPA Waste Number(s)	Corresponding Treatment Standard/ Applicable Variance/Other Information
(A) 833422	2	D006, D007, D008	REFER TO 5268.41, TABLE CCWE

SIGNATURE: William S Shore TITLE: Envir Coord.

PRINT NAME: WILLIAM S. SHORE DATE: 1/9/91

ONLY ORIGINAL SIGNATURES WILL BE ACCEPTED! September 23, 19

* For Treatment Standards Expressed as Concentration, Please Enter the Legend Number from the Legend Below for the Constituents contained in the Waste.

LEGEND FOR TREATMENT STANDARDS EXPRESSED AS CONCENTRATION

TABLE CCWE-CONSTITUENTS IN WASTE EXTRACT

F001-F005 spent solvent		Concentration (in mg/l) Waste Water Containing Spent Solvents	All other Spent Solvent Wastes
Legend #	Constituent Name		
1	Acetone	0.05	0.59
2	n-butyl alcohol	5.0	5.0
3	Carbon disulfide	1.05	4.81
4	Carbon Tetrachloride	.05	.96
5	Chlorobenzene	.15	.05
6	Cresols (and cresylic acid)	2.82	.75
7	Cyclohexanone	.125	.75
8	1,2-dichlorobenzene	.65	.125
9	Ethyl acetate	.05	.75
10	Ethyl benzene	.05	.053
11	Ethyl ether	.05	.75
12	Isobutanol	5.0	5.0
13	Methanol	.25	.75
14	Methylene chloride	.20	.96
15	Methylene chloride (from the pharmaceutical industry)	0.44	.96
16	Methyl ethyl ketone	0.05	0.75
17	Methyl isobutyl ketone	0.05	0.33
18	Nitrobenzene	0.66	0.125
19	Pyridine	1.12	0.33
20	Tetrachlorethylene	0.079	0.05
21	Toluene	1.12	0.33
22	1,1,1-Trichloroethane	1.05	0.41
23	1,2,2-richloro-1,2,2-trifluoroethane	1.05	0.96
24	Trichloroethylene	0.061	0.071
25	Thrichlorofluoromethane	0.05	0.96
26	Xylene	0.05	0.15

F010-F025 and F026-F028 dioxin Containing Waste		Concentration
Legend #	Constituent Name	
27	HxCCD-kAll Hexachlorodibenzo-p-dioxins	1 ppb
28	HxCDF-All Hexachlorodibenzofurans	1 ppb
29	PeCdd-All Pentachlorodibenzo-p-dioxins	1 ppb
30	PeCDF-All Pentachlorodibenzofurans	1 ppb
31	TCDD-All Tetrachlorodibenzo-p-dioxins	1 ppb
32	TCDF-All Tetrachlorodibenzofurans	1 ppb
33	2,4,5-Trichlorophenol	0.05 ppm
34	2,4,6-Trichlorophenol	0.05 ppm
35	2,3,4,6-Tetrachlorophenol	0.10 ppm
36	Pentachlorophenol	0.01 ppm

CALIFORNIA LIST WASTES

37	Nickel	134 mg/l
38	Thallium	130 mg/l
39	Cyanide (Liquid)	1000 mg/l

SUPPLEMENTAL DOCUMENT TO BLOCK J

MANIFEST # IL4290978 -91010

MANF. LINE ITEM	DO #	CLIN	HIN	ITEM DESCRIPTION	# OF CONT.	VOL.
A	160	0001, 0003 0005-0006	2901	Plating Liquid		220 GL
	160	0001-0132	2901	" "		3465 GL
	160	0040	2901	" "		55 GL
	160	0001, 0004 0007	1201	5 gal Containers	4	
	160	0007-0133	1201	" " "	63	
	160	0141	1201	" " "	1	

CONTRACT # DLA900-84-D-0034/160

GSX GOVERNMENT SERVICES, INC.

SIGNATURE [signature]

DATE 1/9/91

C.O.R.

SIGNATURE [signature]

DATE 9 January 91

REV. (9/5/90)

SPRINGFIELD ILLINOIS 62794-9276 (217) 782-6761

State Form LPC 62 8/81 IL532-0610

NOTE FORM DESIGNED TO PRINT 8 LINES PER INCH. **EPA Form 8700-22 (Rev. 6-89)** Form Approved OMB No. 2050-0039 Expires 1-31-93

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: IL5210021833 — Manifest Document No.: ~~[illegible]~~ 91011
2. Page 1 of 1

Information in the shaded areas is required by Federal law. [illegible] required by Illinois [illegible]

3. Generator's Name and Mailing Address — Location If Different
Rock Island Arsenal
Bldg.154,Arsenal Island, Rock Island,IL 61299

4. Generator's Phone (309) 782-1619

A. Illinois Manifest Document Number: IL4290978 — MANIFEST FEE PAID

B. Illinois Generator's ID: 1 6 1 8 1 3 0 0 0 1

5. Transporter 1 Company Name: GSX Services Inc.
6. US EPA ID Number: MDD980554653

C. Illinois Transporter's ID: 1 8 8 7

D. (803) 798-2993 Transporter's Phone

7. Transporter 2 Company Name:
8. US EPA ID Number:

E. Illinois Transporter's ID:

F. ( ) Transporter's Phone

9. Designated Facility Name and Site Address
Special Waste Inc.
1713 Legion Road
Athens TN, 37303

10. US EPA ID Number: TND034547141

G. Illinois Facility's ID: 9 4 7 1 0 7 0 0 0 1

H. Facility's Phone: (615) 745-9222

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt./Vol.	I. Waste No.
a. "RQ" Hazardous Waste Liquid,N.O.S. ORM-E,NA9189(D006,D007,D008) (Plating Liquid)	051	DM	02805	1	EPA HW Number: XX D006 — Authorization Number:
b.					EPA HW Number: XX — Authorization Number:
c.					EPA HW Number: XX — Authorization Number:
d.					EPA HW Number: XX — Authorization Number:

J. Additional Descriptions for Materials Listed Above
A)833422 ADD HW#D007,D008
Truck# C12 PO# JF

K. Handling Codes for Wastes Listed Above In Item # 14
1 = Gallons 2 = Cubic Yards

15. Special Handling Instructions and Additional Information
24 Hour Emergency # 1 309 788 6534 A)Guide#31
Send all correspondence and billing to:
GSX,Inc.,PO Box 140,Saukville, WI 53080 DLA-200-89-D-0034 DO# ~~[illegible]~~ 153

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment: **OR**, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: William L. LaFrenz WILLIAM S. SHORE — Signature: [signature] William S Shore — Date: Month 01 Day 10 Year 91

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: JEFFREY FEYEREISEN — Signature: Jeffrey Feyereisen — Date: Month 01 Day 10 Year 91

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name: — Signature: — Date: Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in item 19.
Printed/Typed Name: — Signature: — Date: Month Day Year

GENERATOR — TRANSPORTER — FACILITY

[illegible] Agency is authorized to require pursuant to Illinois Revised Statutes, Chapter 111½, Section 2[illegible], that this information be submitted to the Agency. Failure to provide the information may result in a civil penalty against the owner [illegible] operator of not to exceed $25,000 per day of violation. Falsification of this information may result in a fine up to $50,000 per day of violation and imprisonment up to 5 years. This form has been approved by the Forms Management [illegible]

COPY 1. TSD MAIL TO GENERATOR

[illegible] and the National Response Center at 800/424-8802 or 202/426-2675.

STATE OF ILLINOIS ENVIRONMENTAL PROTECTION AGENCY DIVISION OF LAND POLLUTION CONTROL

P.O. BOX 19276 SPRINGFIELD, ILLINOIS 62794-9276 (217) 782-6761

State Form LPC 62 8/81 IL532-0610

FOR SHIPMENT OF HAZARDOUS INFECTIOUS AND SPECIAL WASTE

NOTE: FORM DESIGNED TO PRINT 8 LINES PER INCH. **EPA Form 8700-22 (Rev. 6-89)** Form Approved OMB No. 2050-0039 Expires 9-3-...

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: IL5210021833 — Manifest Document No.: ~~[illegible]~~ 91011

2. Page 1 of 1 — Information in the shaded areas is required by Federal law, but is required by Illinois law.

3. Generator's Name and Mailing Address: Rock Island Arsenal, Bldg.154, Arsenal Island, Rock Island, IL 61299 — Location If Different:

4. Generator's Phone: 309 782-1619

A. Illinois Manifest Document Number: IL4290978 — MANIFEST FEE PAID

B. Illinois Generator's ID: 1 6 1 8 1 3 0 0 0 1

5. Transporter 1 Company Name: GSX Services Inc. — 6. US EPA ID Number: MDD980554653

C. Illinois Transporter's ID: 1 8 8 7

D. (803 798-2993 Transporter's Phone

7. Transporter 2 Company Name: — 8. US EPA ID Number:

E. Illinois Transporter's ID:

F. ( ) Transporter's Phone

9. Designated Facility Name and Site Address: Special Waste Inc., 1713 Legion Road, Athens TN, 37303 — 10. US EPA ID Number: TND034547141

G. Illinois Facility's ID: 9 4 7 1 0 7 0 0 0 1

H. Facility's Phone: (615 745-9222

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. "RQ" Hazardous Waste Liquid, N.O.S. ORM-E, NA9189 (D006, D007, D008) (Plating Liquid)	051	DT	02805	1	EPA HW Number: XX D006 — Authorization Number:
b.					EPA HW Number: XX — Authorization Number:
c.					EPA HW Number: XX — Authorization Number:
d.					EPA HW Number: XX — Authorization Number:

J. Additional Descriptions for Materials Listed Above

A)833422 ADD HW#D007,D008

Truck# C12 PO# JF

K. Handling Codes for Wastes Listed Above In Item # 14

1 = Gallons 2 = Cubic Yards

15. Special Handling Instructions and Additional Information

24 Hour Emergency # 1-309-788-6534 A)Guide#31

Send all correspondence and billing to:

GSX, Inc., PO Box 140, Saukville, WI 53080 DLA-200-89-D-0034 DO# ~~[illegible]~~ 133

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: William L. LaFrenz WILLIAM S SHORE — Signature: William S Shore — Date: Month Day Year: 01 10 91

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: JEFFREY FEYERESEN — Signature: Jeffrey Feyeresen — Date: Month Day Year: 01 10 91

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name: — Signature: — Date: Month Day Year:

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in item 19

Printed/Typed Name: William G. McHon — Signature: [signature] — Date: Month Day Year: 01 15 91

Notice: Failure to provide the information required pursuant to Illinois Revised Statutes Chapter 111 Section 21 that this information be submitted to the Agency. Failure to provide the information may result in a civil penalty against the owner or operator in excess $25,000 per day of violation. Falsification of this information may result in a fine up to $50,000 per day of violation and imprisonment up to 5 years. This form has been approved by the Forms Management.

In case of a spill call the Illinois Office of Emergency Response at 217/782-3637 and the National Response Center at 800/424-8802 or 202/426-2675.

SUPPLEMENTAL DOCUMENT TO BLOCK J

MANIFEST # 5L4296778-91011

MANF. LINE ITEM	DO #	CLIN	HIN	ITEM DESCRIPTION	# OF CONT.	VOL.
A	153	[illegible]	2901	Plating Solution		[illegible]
	153	[illegible]	2901	" "		625 GL
	153	[illegible]	2901	" "		110 GL
	153	[illegible]	2901	" "		1320 GL
	153	[illegible]	1201	1)x5 [illegible] 3)55 gal Containers	14	
	153	[illegible]	1201	" " "	11	
	153	[illegible]	1201	" " "	2	
	153	[illegible]	1201	" " "	24	

CONTRACT # [illegible]/153

GSX GOVERNMENT SERVICES, INC. C.O.R.

SIGNATURE [signature] SIGNATURE [signature]

DATE 1-10-91 DATE 10 January 91

REV. (9/5/90)

Generator Name/Location: Rock Island Arsenal, Rock Island, IL

EPA ID Number: ILD006283333 Manifest Number: ILD006283333-91011

Drum Number, Waste Profile or ARF Number	Category No.	State EPA Waste Number(s)	Corresponding Treatment Standard/ Applicable Variance/Other Information
(A) 333433	2	D001, D002, D006	Subtitle D, TCLP, CCWE

SIGNATURE: William S Shore TITLE: Envir. Coord.

PRINT NAME: WILLIAM S SHORE DATE: ~~Envir. Coord~~ 1/10/9

ONLY ORIGINAL SIGNATURES WILL BE ACCEPTED

September 21, 1

* For Treatment Standards Expressed as Concentration, Please Enter the Legend Number from the Legend Below for the Constituents contained in the Waste.

LEGEND FOR TREATMENT STANDARDS EXPRESSED AS CONCENTRATION

TABLE CCWE-CONSTITUENTS IN WASTE EXTRACT

	F001-F005 spent solvent	Concentration (in mg/l) Waste Water Containing Spent Solvent	All other Spent Solvent Wastes
Legend #	Constituent Name		
1	Acetone	0.05	0.59
2	n-butyl alcohol	5.0	5.0
3	Carbon disulfide	1.05	4.81
4	Carbon Tetrachloride	.05	.96
5	Chlorobenzene	.15	.05
6	Cresols (and cresylic acid)	2.82	.75
7	Cyclohexanone	.125	.75
8	1,2-dichlorobenzene	.63	.125
9	Ethyl acetate	.05	.75
10	Ethyl benzene	.05	.053
11	Ethyl ether	.05	.75
12	Isobutanol	5.0	5.0
13	Methanol	.25	.75
14	Methylene chloride	.20	.96
15	Methylene chloride (from the pharmaceutical industry)	0.44	.96
16	Methyl ethyl ketone	0.05	0.75
17	Methyl isobutyl ketone	0.05	0.33
18	Nitrobenzene	0.66	0.125
19	Pyridine	1.12	0.33
20	Tetrachlorethylene	0.079	0.05
21	Toluene	1.12	0.33
22	1,1,1-Trichloroethane	1.05	0.41
23	1,2,2-trichloro-1,2,2-trifluoroethane	1.05	0.96
24	Trichloroethylene	0.062	0.091
25	Trichlorofluoromethane	0.05	0.76
26	Xylene	0.05	0.15

	F010-F023 and F026-F028 dioxin Containing Waste	Concentration
Legend #	Constituent Name	
27	HxCDD-All Hexachlorodibenzo-p-dioxins	1 ppt
28	HxCDF-All Hexachlorodibenzofurans	1 ppt
29	PeCDD-All Pentachlorodibenzo-p-dioxins	1 ppt
30	PeCDF-All Pentachlorodibenzofurans	1 ppt
31	TCDD-All Tetrachlorodibenzo-p-dioxins	1 ppt
32	TCDF-All Tetrachlorodibenzofurans	1 ppt
33	2,4,5-Trichlorophenol	0.05 ppm
34	2,4,6-Trichlorophenol	0.05 ppm
35	2,3,4,6-Tetrachlorophenol	0.10 ppm
36	Pentachlorophenol	0.01 ppm

CALIFORNIA LIST WASTES

37	Nickel	134 mg/l
38	Thallium	130 mg/l
39	Cyanide (Liquid)	1000 mg/l

2928

A

WASTE CHARACTERIZATION DATA

General Directions: In order for us to determine whether we can lawfully and safely transport, treat, and dispose of your waste material, we must obtain certain information about the chemical and physical properties of the waste and its chemical composition. Please be complete in your answers; if your response is "none" or "not available", so indicate. Answers must be printed in ink or typewritten and the completed form must be signed. Please make a copy of this form for your records.

(1.) Generator Name: Rock Island Arsenal (RIA) EPA Generator No.: IL5210021833

(2.) Generating Facility Complete Address:
Commander, Rock Island Arsenal, ATTN: SMCRI-SEM (Dr. Shore) Rock Island, IL 61299-500

(3.) Authorized Company Representative: Dr. William Shore Title: Environmental Coordinator

(4.) Phone Number: (309) 782-7855

(5.) Emergency Contact RIA Fire Department Title: Shift Chief Phone: (309) 782-5148

(6.) General Description of The Waste: ACID TANK 1 SLUDGE
"PLATING SHOP WASTE" A C.C. 9064

(7.) Process Generating Waste: Plating Shop

(8.) Anticipated volume 200 [X] Gallons [ ] Tons [ ] Cubic Yards [4] Drums, or [ ] Other
Per: [ ] Day [ ] Week [ ] Month [X] Year, or [ ] Other 9064113-116

(9.) Waste Properties:

(a.) Vapor pressure (in mm of Hg @ 25 °C)

(b.) Flash Point [ ] °F [ ] °C [ ] Closed Cup [ ] Open Cup

(c.) Phases/layers: [ ] Single [X] Bilayered [ ] Multilayered

(d.) Physical State @ 20 °C: [ ] Solid [X] Liquid [X] Semi-Solid [ ] Powder [ ] Other

(e.) pH >7, <12.5 (f.) Solubility (g/100g H_2O) @ 20 °C:

(g.) Density: 13 [ ] lb./ft.^{3} [ ] lb./yd.^{3} [X] lb./gal. [ ] g/cc

(h.) Odor: [ ] Strong [X] Mild [ ] None

(i.) Reactivity: Water [ ] Yes [X] No Autopolymerizable [ ] Yes [X] No Shock Sensitive [ ] Yes [X] No
Pyrophoric [ ] Yes [X] No Thermally Sensitive [ ] Yes [X] No Explosive [ ] Yes [X] No

(10.) Complete waste composition (with ranges—indicate % or ppm.) Attach Additional Pages if Necessary

ORGANIC	INORGANIC
	CR = 3800 ppm
	Cd = 830 ppm
	Pb = 330 ppm

(11.) Sample Included [X] Yes [ ] No

(12.) Is this waste a "Hazardous Waste" as defined by regulations of the U.S. Environmental Protection Agency pursuant to 40 CFR § 261 of the Resource Conservation and Recovery Act? yes

(13.) Manifest Information

Proper USDOT Shipping Name	USDOT Hazard Class	UN or NA No.	USEPA Haz. Code	USEPA Haz. Waste No. (Type)
Hazardous waste Liquid, NOS	ORM-E	NA 1189	T	D007

D006, D008

(14.) This waste contains: Biological Materials [ ] Yes [X] No Pathogens [ ] Yes [X] No Etiological Agents [ ] Yes [X] No
Radioactive Materials [ ] Yes [X] No PCB's [ ] Yes [X] No Dioxin [ ] Yes [X] No

If yes, specify type (if applicable) and concentration:

(15.) Have you obtained toxicity studies of this waste material? yes If so, please attach a copy of the results.

(16.) Required personal protective equipment & procedures: 1

I hereby certify that the above and attached description is complete and accurate to the best of my knowledge and ability to determine, that no deliberate or willful omissions of composition or properties exists, and that all known or suspected hazards have been disclosed.

Generator's Authorized Signatory
William S. Shore Title Environmental Coordinator Date 11/2/90

(13.) Manifest Information

Proper USDOT Shipping Name	USDOT Hazard Class	UN or NA No.	USEPA Haz. Code	USEPA Haz. Waste No. (Type)
Hazardous Waste Liquid, NOS	ORM-E	NA9189	T	F001

(14.) This waste contains: Biological Materials [ ] Yes [X] No Pathogens [ ] Yes [X] No Etiological Agents [ ] Yes [X] No
Radioactive Materials [ ] Yes [X] No PCB's [ ] Yes [X] No Diozin [ ] Yes [X] No

If yes, specify type (if applicable) and concentration: _____

(15.) Have you obtained toxicity studies of this waste material? NO If so, please attach a copy of the results.

(16.) Required personal protective equipment & procedures: gloves, glasses

I hereby certify that the above and attached description is complete and accurate to the best of my knowledge and ability to determine, that no deliberate or willful omissions of composition or properties exists, and that all known or suspected hazards have been disclosed.

Generator's Authorized Signatory

William L. Shou Title Environmental Coordinator Date 11/2/90

C

2928

WASTE PROFILE SHEETS

General Directions: In order for us to determine whether we can lawfully and safely transport, treat, and dispose of your waste material, we must obtain certain information about the chemical and physical properties of the waste and its chemical composition. Please be complete in your answers; if your response is "none" or "not available", so indicate. Answers must be printed in ink or typewritten and the completed form must be signed. Please make a copy of this form for your records.

(1.) Generator Name: Rock Island Arsenal (RIA) EPA Generator No.: IL5210021833

(2.) Generating Facility Complete Address:
Commander, Rock Island Arsenal, ATTN: SMCRI-SEM (Dr. Shore) Rock Island, IL 61299-5000

(3.) Authorized Company Representative: Dr. William Shore Title: Environmental Coordinator

(4.) Phone Number: (309) 782- 7855

(5.) Emergency Contact RIA Fire Department Title: Shift Chief Phone: (309) 782-5148

(6.) General Description of The Waste: ACID TANK 3 SLUDGE
"PLATING SHOP WASTE" C C.C. 9064

(7.) Process Generating Waste: Plating Shop

(8.) Anticipated volume 12 [ ] Gallons [ ] Tons [ ] Cubic Yards [X] Drums, or [ ] Other
Per: [ ] Day [ ] Week [ ] Month [X] Year, or [ ] Other ±9064127-138

(9.) Waste Properties:

(a.) Vapor pressure (in mm of Hg @ 25°C)

(b.) Flash Point [ ] °F [ ] °C [ ] Closed Cup [ ] Open Cup

(c.) Phases/layers: [ ] Single [X] Bilayered [ ] Multilayered

(d.) Physical State @ 20 °C: [ ] Solid [X] Liquid [X] Semi-Solid [ ] Powder [ ] Other

(e.) pH <2 (f.) Solubility (g/100g H_2O) @ 20°C:

(g.) Density: 11 [ ] lb./ft.^{3} [ ] lb./yd.^{3} [X] lb./gal. [ ] g/cc

(h.) Odor: [ ] Strong [ ] Mild [ ] None

(i.) Reactivity: Water [ ] Yes [X] No Autopolymerizable [ ] Yes [X] No Shock Sensitive [ ] Yes [X] No
Pyrophoric [ ] Yes [X] No Thermally Sensitive [ ] Yes [X] No Explosive [ ] Yes [X] No

(10.) Complete waste composition (with ranges—indicate % or ppm.) Attach Additional Pages if Necessary

ORGANIC	INORGANIC
	CR = 14000 ppm
	Cd = 2000 ppm
	Pb = 370 ppm

(11.) Sample Included [X] Yes [ ] No

(12.) Is this waste a "Hazardous Waste" as defined by regulations of the U.S. Environmental Protection Agency pursuant to 40 CFR § 261 of the Resource Conservation and Recovery Act? yes

(13.) Manifest Information

Proper USDOT Shipping Name	USDOT Hazard Class	UN or NA No.	USEPA Haz. Code	USEPA Haz. Waste No. (Type)
Hazardous Waste Liquid, NOS	ORM-E	NA9189	C, T	D002 D007, D006, D008

(14.) This waste contains: Biological Materials [ ] Yes [X] No Pathogens [ ] Yes [X] No Etiological Agents [ ] Yes [X] No
Radioactive Materials [ ] Yes [X] No PCB's [ ] Yes [X] No Dioxin [ ] Yes [X] No

If yes, specify type (if applicable) and concentration:

(15.) Have you obtained toxicity studies of this waste material? yes If so, please attach a copy of the results.

(16.) Required personal protective equipment & procedures: 1

I hereby certify that the above and attached description is complete and accurate to the best of my knowledge and ability to determine, that no deliberate or willful omissions of composition or properties exists, and that all known or suspected hazards have been disclosed.

Generator's Authorized Signatory
William S. Shore Title Environmental Coordinator Date 11/2/90

C

See old plating shop for profile

2921

WASTE PROFILE SHEETS

General Directions: In order for us to determine whether we can lawfully and safely transport, treat, and dispose of your waste material, we must obtain certain information about the chemical and physical properties of the waste and its chemical composition. Please be complete in your answers; if your response is "none" or "not available", so indicate. Answers must be printed in ink or typewritten and the completed form must be signed. Please make a copy of this form for your records.

(1.) Generator Name: Rock Island Arsenal (RIA) EPA Generator No.: IL5210021833

(2.) Generating Facility Complete Address:
Commander, Rock Island Arsenal, ATTN: SMCRI-SEM (Dr. Shore) Rock Island, IL 61299-5000

(3.) Authorized Company Representative: Dr. William Shore Title: Environmental Coordinator

(4.) Phone Number: (309) 782- 7855

(5.) Emergency Contact: RIA Fire Department Title: Shift Chief Phone: (309) 782-5148

(6.) General Description of The Waste: ACID TANK & SLUDGE
"PLATING SHOP WASTE" C C.C. 9064

(7.) Process Generating Waste: Plating Shop

(8.) Anticipated volume: 42 [ ] Gallons [ ] Tons [ ] Cubic Yards [redacted] or [ ] Other
Per: [ ] Day [ ] Week [ ] Month [X] Year, or [ ] Other ±9064127-138

(9.) Waste Properties:

(a.) Vapor pressure (in mm of Hg @ 25 °C)

(b.) Flash Point [ ] °F [ ] °C [ ] Closed Cup [ ] Open Cup

(c.) Phases/layers: [ ] Single [X] Bilayered [ ] Multilayered

(d.) Physical State @ 20 °C: [ ] Solid [X] Liquid [X] Semi-Solid [ ] Powder [ ] Other

(e.) pH <2 (f.) Solubility (g/100g H_2O) @ 20 °C:

(g.) Density: 11 [ ] lb./ft.^{3} [ ] lb./yd.^{3} [X] lb./gal. [ ] g/cc

(h.) Odor: [ ] Strong [ ] Mild [ ] None

(i.) Reactivity: Water [ ] Yes [X] No Autopolymerizable [ ] Yes [X] No Shock Sensitive [ ] Yes [X] No
Pyrophoric [ ] Yes [X] No Thermally Sensitive [ ] Yes [X] No Explosive [ ] Yes [X] No

(10.) Complete waste composition (with ranges—indicate % or ppm.) Attach Additional Pages if Necessary

ORGANIC	INORGANIC
	CR = 14000 ppm
	Cd = 2000 ppm
	Pb = 370 ppm

(11.) Sample Included [X] Yes [ ] No

(12.) Is this waste a "Hazardous Waste" as defined by regulations of the U.S. Environmental Protection Agency pursuant to 40 CFR § 261 of the Resource Conservation and Recovery Act? yes

(13.) Manifest Information

Proper USDOT Shipping Name	USDOT Hazard Class	UN or NA No.	USEPA Haz. Code	USEPA Haz. Waste No. (Type)
Hazardous Waste Liquid, NOS	ORM-E	NA9189	C, T	D002

D007, D006, D008

(14.) This waste contains: Biological Materials [ ] Yes [X] No Pathogens [ ] Yes [X] No Etiological Agents [ ] Yes [X] No
Radioactive Materials [ ] Yes [X] No PCB's [ ] Yes [X] No Dioxin [ ] Yes [X] No

If yes, specify type (if applicable) and concentration:

(15.) Have you obtained toxicity studies of this waste material? yes If so, please attach a copy of the results.

(16.) Required personal protective equipment & procedures:

I hereby certify that the above and attached description is complete and accurate to the best of my knowledge and ability to determine, that no deliberate or willful omissions of composition or properties exists, and that all known or suspected hazards have been disclosed.

Generator's Authorized Signatory
William S. Shore Title Environmental Coordinator Date 11/2/90

D

2928

WASTE PROFILE SHEETS

General Directions: In order for us to determine whether we can lawfully and safely transport, treat, and dispose of your waste material, we must obtain certain information about the chemical and physical properties of the waste and its chemical composition. Please be complete in your answers; if your response is "none" or "not available", so indicate. Answers must be printed in ink or typewritten and the completed form must be signed. Please make a copy of this form for your records.

(1.) Generator Name: Rock Island Arsenal (RIA) EPA Generator No.: IL5210021833

(2.) Generating Facility Complete Address:
Commander, Rock Island Arsenal, ATTN: SMCRI-SEM (Dr. Shore) Rock Island, IL 61299-5000

(3.) Authorized Company Representative: Dr. William Shore Title: Environmental Coordinator

(4.) Phone Number: (309) 782- 7855

(5.) Emergency Contact: RIA Fire Department Title: Shift Chief Phone: (309) 782-5148

(6.) General Description of The Waste: ALKALINE TANK I LIQUID
"PLATING SHOP WASTE" D C.C. 9064

(7.) Process Generating Waste: Plating shop

(8.) Anticipated volume 34 [ ] Gallons [ ] Tons [ ] Cubic Yards [X] Drums, or [ ] Other
Per: [ ] Day [ ] Week [ ] Month [X] Year, or [ ] Other 9064215-247 & 9064297

(9.) Waste Properties:

(a.) Vapor pressure (in mm of Hg @ 25 °C)

(b.) Flash Point [ ] °F [ ] °C [ ] Closed Cup [ ] Open Cup

(c.) Phases/layers: [ ] Single [X] Bilayered [ ] Multilayered

(d.) Physical State @ 20 °C: [ ] Solid [X] Liquid [X] Semi-Solid [ ] Powder [ ] Other

(e.) pH >7, <12.5 (f.) Solubility (g/100g H_2O) @ 20 °C:

(g.) Density: 10 [ ] lb./ft.^{3} [ ] lb./yd.^{3} [X] lb./gal. [ ] g/cc

(h.) Odor: [ ] Strong [X] Mild [ ] None

(i.) Reactivity: Water [ ] Yes [X] No Autopolymerizable [ ] Yes [X] No Shock Sensitive [ ] Yes [X] No
Pyrophoric [ ] Yes [X] No Thermally Sensitive [ ] Yes [X] No Explosive [ ] Yes [X] No

(10.) Complete waste composition (with ranges—indicate % or ppm.) Attach Additional Pages if Necessary

ORGANIC	INORGANIC
	Cr 21000 ppm
	Cd 190 ppm
	Pb 5820 ppm

(11.) Sample Included [X] Yes [ ] No

(12.) Is this waste a "Hazardous Waste" as defined by regulations of the U.S. Environmental Protection Agency pursuant to 40 CFR § 261 of the Resource Conservation and Recovery Act? yes

(13.) Manifest Information

Proper USDOT Shipping Name	USDOT Hazard Class	UN or NA No.	USEPA Haz. Code	USEPA Haz. Waste No. (Type)
Hazardous Waste Liquid, NOS	ORM-E	NA9189	T	D008, D007

(14.) This waste contains: Biological Materials [ ] Yes [X] No Pathogens [ ] Yes [X] No Etiological Agents [ ] Yes [X] No
Radioactive Materials [ ] Yes [X] No PCB's [ ] Yes [X] No Dioxin [ ] Yes [X] No

If yes, specify type (if applicable) and concentration:

(15.) Have you obtained toxicity studies of this waste material? yes If so, please attach a copy of the results.

(16.) Required personal protective equipment & procedures:

I hereby certify that the above and attached description is complete and accurate to the best of my knowledge and ability to determine, that no deliberate or willful omissions of composition or properties exists, and that all known or suspected hazards have been disclosed.

Generator's Authorized Signatory
William S. Shore Title Environmental Coordinator Date 11/2/90

D;F

2928

WASTE PROFILE SHEETS

General Directions: In order for us to determine whether we can lawfully and safely transport, treat, and dispose of your waste material, we must obtain certain information about the chemical and physical properties of the waste and its chemical composition. Please be complete in your answers; if your response is "none" or "not available", so indicate. Answers must be printed in ink or typewritten and the completed form must be signed. Please make a copy of this form for your records.

(1.) Generator Name: Rock Island Arsenal (RIA) EPA Generator No.: IL5210021833

(2.) Generating Facility Complete Address:
Commander, Rock Island Arsenal, ATTN: SMCRI-SEM (Dr. Shore) Rock Island, IL 61299-5000

(3.) Authorized Company Representative: Dr. William Shore Title: Environmental Coordinator

(4.) Phone Number: (309) 782- 7855

(5.) Emergency Contact RIA Fire Department Title: Shift Chief Phone: (309) 782-5148

(6.) General Description of The Waste: ALKALINE TANK 1 LIQUID + ALKALINE TANK 3 LIQUID
"PLATING SHOP WASTE" D + F CC.9064

(7.) Process Generating Waste: Plating Shop

(8.) Anticipated volume 1 [ ] Gallons [ ] Tons [ ] Cubic Yards [X] Drums, or [ ] Other
Per: [ ] Day [ ] Week [ ] Month [X] Year, or [ ] Other 9064297

(9.) Waste Properties:

(a.) Vapor pressure (in mm of Hg @ 25 °C)

(b.) Flash Point [ ] °F [ ] °C [ ] Closed Cup [ ] Open Cup

(c.) Phases/layers: [ ] Single [X] Bilayered [ ] Multilayered

(d.) Physical State @ 20 °C: [ ] Solid [X] Liquid [X] Semi-Solid [ ] Powder [ ] Other

(e.) pH <12.5 (f.) Solubility (g/100g H_2O) @ 20 °C:

(g.) Density: 10 [ ] lb./ft.^{3} [ ] lb./yd.^{3} [X] lb./gal. [ ] g/cc

(h.) Odor: [ ] Strong [X] Mild [ ] None

(i.) Reactivity: Water [ ] Yes [X] No Autopolymerizable [ ] Yes [X] No Shock Sensitive [ ] Yes [X] No
Pyrophoric [ ] Yes [X] No Thermally Sensitive [ ] Yes [X] No Explosive [ ] Yes [X] No

(10.) Complete waste composition (with ranges—indicate % or ppm.) Attach Additional Pages if Necessary

ORGANIC	INORGANIC
	CR = 30400 ppm
	Cd 244 ppm
	Pb = 7000 ppm

(11.) Sample Included [ ] Yes [ ] No

(12.) Is this waste a "Hazardous Waste" as defined by regulations of the U.S. Environmental Protection Agency pursuant to 40 CFR § 261 of the Resource Conservation and Recovery Act?

(13.) Manifest Information

Proper USDOT Shipping Name	USDOT Hazard Class	UN or NA No.	USEPA Haz. Code	USEPA Haz. Waste No. (Type)
Hazardous Waste Liquid, NOS	ORM-E	NA9189	T	D007 D006, D008

(14.) This waste contains: Biological Materials [ ] Yes [X] No Pathogens [ ] Yes [X] No Etiological Agents [ ] Yes [X] No
Radioactive Materials [ ] Yes [X] No PCB's [ ] Yes [X] No Dioxin [ ] Yes [X] No

If yes, specify type (if applicable) and concentration:

(15.) Have you obtained toxicity studies of this waste material? yes If so, please attach a copy of the results.

(16.) Required personal protective equipment & procedures: 1

I hereby certify that the above and attached description is complete and accurate to the best of my knowledge and ability to determine, that no deliberate or willful omissions of composition or properties exists, and that all known or suspected hazards have been disclosed.

Generator's Authorized Signatory
William S Shore Title Environmental Coordinator Date 11/2/90

2926

E

WASTE PROFILE SHEETS

General Directions: In order for us to determine whether we can lawfully and safely transport, treat, and dispose of your waste material, we must obtain certain information about the chemical and physical properties of the waste and its chemical composition. Please be complete in your answers; if your response is "none" or "not available", so indicate. Answers must be printed in ink or typewritten and the completed form must be signed. Please make a copy of this form for your records.

(1.) Generator Name: Rock Island Arsenal (RIA) EPA Generator No.: IL5210021833

(2.) Generating Facility Complete Address:
Commander, Rock Island Arsenal, ATTN: SMCRI-SEM (Dr. Shore) Rock Island, IL 61299-5000

(3.) Authorized Company Representative: Dr. William Shore Title: Environmental Coordinator

(4.) Phone Number: (309) 782- 7855

(5.) Emergency Contact: RIA Fire Department Title: Shift Chief Phone: (309) 782-5148

(6.) General Description of The Waste: ALKALINE TANK 7 LIQUID
"PLATING SHOP WASTE" E C.C. 9064

(7.) Process Generating Waste: Plating Shop

(8.) Anticipated volume 43 [ ] Gallons [ ] Tons [ ] Cubic Yards [X] Drums, or [ ] Other
Per: [ ] Day [ ] Week [ ] Month [X] Year, or [ ] Other 9064171-201 & 9064203-214

(9.) Waste Properties:

(a.) Vapor pressure (in mm of Hg @ 25 °C)

(b.) Flash Point [ ] °F [ ] °C [ ] Closed Cup [ ] Open Cup

(c.) Phases/layers: [ ] Single [X] Bilayered [ ] Multilayered

(d.) Physical State @ 20 °C: [ ] Solid [X] Liquid [X] Semi-Solid [ ] Powder [ ] Other

(e.) pH > 7, < 12.5 (f.) Solubility (g/100g H_2O) @ 20 °C:

(g.) Density: 10 [ ] lb./ft.^{3} [ ] lb./yd.^{3} [X] lb./gal. [ ] g/cc

(h.) Odor: [ ] Strong [X] Mild [ ] None

(i.) Reactivity: Water [ ] Yes [X] No Autopolymerizable [ ] Yes [X] No Shock Sensitive [ ] Yes [X] No
Pyrophoric [ ] Yes [X] No Thermally Sensitive [ ] Yes [X] No Explosive [ ] Yes [X] No

(10.) Complete waste composition (with ranges—indicate % or ppm.) Attach Additional Pages if Necessary

ORGANIC	INORGANIC
	Cr = 15000 ppm
	Cd = 150 ppm
	Pb = 8000 ppm

(11.) Sample Included [X] Yes [ ] No

(12.) Is this waste a "Hazardous Waste" as defined by regulations of the U.S. Environmental Protection Agency pursuant to 40 CFR § 261 of the Resource Conservation and Recovery Act? yes

(13.) Manifest Information

Proper USDOT Shipping Name	USDOT Hazard Class	UN or NA No.	USEPA Haz. Code	USEPA Haz. Waste No. (Type)
Hazardous Waste Liquid, NOS	CORM-E	NA9189	T	D007 D008, D006

(14.) This waste contains: Biological Materials [ ] Yes [X] No Pathogens [ ] Yes [X] No Etiological Agents [ ] Yes [X] No
Radioactive Materials [ ] Yes [X] No PCB's [ ] Yes [X] No Dioxin [ ] Yes [X] No

If yes, specify type (if applicable) and concentration:

(15.) Have you obtained toxicity studies of this waste material? yes If so, please attach a copy of the results.

(16.) Required personal protective equipment & procedures:

I hereby certify that the above and attached description is complete and accurate to the best of my knowledge and ability to determine, that no deliberate or willful omissions of composition or properties exists, and that all known or suspected hazards have been disclosed.

Generator's Authorized Signatory
William A. Shore Title Environmental Coordinator Date 11/2/90

F

2928

WASTE PROFILE SHEETS

General Directions: In order for us to determine whether we can lawfully and safely transport, treat, and dispose of your waste material, we must obtain certain information about the chemical and physical properties of the waste and its chemical composition. Please be complete in your answers; if your response is "none" or "not available", so indicate. Answers must be printed in ink or typewritten and the completed form must be signed. Please make a copy of this form for your records.

(1.) Generator Name: Rock Island Arsenal (RIA) EPA Generator No.: IL5210021833

(2.) Generating Facility Complete Address:
Commander, Rock Island Arsenal, ATTN: SMCRI-SEM (Dr. Shore) Rock Island, IL 61299-5000

(3.) Authorized Company Representative: Dr. William Shore Title: Environmental Coordinator

(4.) Phone Number: (309) 782- 7855

(5.) Emergency Contact: RIA Fire Department Title: Shift Chief Phone: (309) 782-5148

(6.) General Description of The Waste: ALKALINE TANK 3 LIQUID
"PLATING SHOP WASTE" F C.C. 9064

(7.) Process Generating Waste: Plating Shop

(8.) Anticipated volume 60 [ ] Gallons [ ] Tons [ ] Cubic Yards [X] Drums, or [ ] Other
Per: [ ] Day [ ] Week [ ] Month [X] Year, or [ ] Other 9064249-290; 9064293-308; 9064323,9

(9.) Waste Properties:

(a.) Vapor pressure (in mm of Hg @ 25 °C)

(b.) Flash Point [ ] °F [ ] °C [ ] Closed Cup [ ] Open Cup

(c.) Phases/layers: [ ] Single [X] Bilayered [ ] Multilayered

(d.) Physical State @ 20 °C: [ ] Solid [X] Liquid [X] Semi-Solid [ ] Powder [ ] Other

(e.) pH 6 (f.) Solubility (g/100g H_2O) @ 20 °C:

(g.) Density: 11 [ ] lb./ft.^{3} [ ] lb./yd.^{3} [X] lb./gal. [ ] g/cc

(h.) Odor: [ ] Strong [X] Mild [ ] None

(i.) Reactivity: Water [ ] Yes [X] No Autopolymerizable [ ] Yes [X] No Shock Sensitive [ ] Yes [X] No
Pyrophoric [ ] Yes [X] No Thermally Sensitive [ ] Yes [X] No Explosive [ ] Yes [X] No

(10.) Complete waste composition (with ranges—indicate % or ppm.) Attach Additional Pages if Necessary

ORGANIC	INORGANIC
	Cr=9400 ppm
	Cd=54 ppm
	Pb=1200 ppm

(11.) Sample Included [X] Yes [ ] No

(12.) Is this waste a "Hazardous Waste" as defined by regulations of the U.S. Environmental Protection Agency pursuant to 40 CFR § 261 of the Resource Conservation and Recovery Act? yes

(13.) Manifest Information

Proper USDOT Shipping Name	USDOT Hazard Class	UN or NA No.	USEPA Haz. Code	USEPA Haz. Waste No. (Type)
Hazardous waste Liquid, NOS	ORM-E	NA9189	T	D007 D008, D006

(14.) This waste contains: Biological Materials [ ] Yes [X] No Pathogens [ ] Yes [X] No Etiological Agents [ ] Yes [X] No
Radioactive Materials [ ] Yes [X] No PCB's [ ] Yes [X] No Diozin [ ] Yes [X] No

If yes, specify type (if applicable) and concentration:

(15.) Have you obtained toxicity studies of this waste material? yes If so, please attach a copy of the results.

(16.) Required personal protective equipment & procedures:

I hereby certify that the above and attached description is complete and accurate to the best of my knowledge and ability to determine, that no deliberate or willful omissions of composition or properties exists, and that all known or suspected hazards have been disclosed.

Generator's Authorized Signatory
William L. Shore Title Environmental Coordinator Date 11/2/90

F

2928

WASTE PROFILE SHEETS

General Directions: In order for us to determine whether we can lawfully and safely transport, treat, and dispose of your waste material, we must obtain certain information about the chemical and physical properties of the waste and its chemical composition. Please be complete in your answers; if your response is "none" or "not available", so indicate. Answers must be printed in ink or typewritten and the completed form must be signed. Please make a copy of this form for your records.

(1.) Generator Name: Rock Island Arsenal (RIA) EPA Generator No.: IL5210021833

(2.) Generating Facility Complete Address:
Commander, Rock Island Arsenal, ATTN: SMCRI-SEM (Dr. Shore) Rock Island, IL 61299-5000

(3.) Authorized Company Representative: Dr. William Shore Title: Environmental Coordinator

(4.) Phone Number: (309) 782- 7855

(5.) Emergency Contact: RIA Fire Department Title: Shift Chief Phone: (309) 782-5148

(6.) General Description of The Waste: ALKALINE TANK 3 LIQUID
"PLATING SHOP WASTE" F C.C. 9064

(7.) Process Generating Waste: Plating Shop

(8.) Anticipated volume: 27/60 [ ] Gallons [ ] Tons [ ] Cubic Yards ~~[ ] Drums~~, or [ ] Other
Per: [ ] Day [ ] Week [ ] Month [X] Year, or [ ] Other 9064249-290; 9064293-308; 9064323,9

(9.) Waste Properties:

(a.) Vapor pressure (in mm of Hg @ 25 °C)

(b.) Flash Point [ ] °F [ ] °C [ ] Closed Cup [ ] Open Cup

(c.) Phases/layers: [ ] Single [X] Bilayered [ ] Multilayered

(d.) Physical State @ 20 °C: [ ] Solid [X] Liquid [X] Semi-Solid [ ] Powder [ ] Other

(e.) pH 6 (f.) Solubility (g/100g H_2O) @ 20 °C:

(g.) Density: 11 [ ] lb./ft.^{3} [ ] lb./yd.^{3} [X] lb./gal. [ ] g/cc

(h.) Odor: [ ] Strong [X] Mild [ ] None

(i.) Reactivity: Water [ ] Yes [X] No Autopolymerizable [ ] Yes [X] No Shock Sensitive [ ] Yes [X] No
Pyrophoric [ ] Yes [X] No Thermally Sensitive [ ] Yes [X] No Explosive [ ] Yes [X] No

(10.) Complete waste composition (with ranges—indicate % or ppm.) Attach Additional Pages if Necessary

ORGANIC	INORGANIC
	Cr=9400 ppm
	Cd=54 ppm
	Pb=1200 ppm

(11.) Sample Included [X] Yes [ ] No

(12.) Is this waste a "Hazardous Waste" as defined by regulations of the U.S. Environmental Protection Agency pursuant to 40 CFR § 261 of the Resource Conservation and Recovery Act? yes

(13.) Manifest Information

Proper USDOT Shipping Name	USDOT Hazard Class	UN or NA No.	USEPA Haz. Code	USEPA Haz. Waste No. (Type)
Hazardous Waste Liquid, NOS	ORM-E	NA9189	T	D007 D008, D006

(14.) This waste contains: Biological Materials [ ] Yes [X] No Pathogens [ ] Yes [X] No Etiological Agents [ ] Yes [X] No
Radioactive Materials [ ] Yes [X] No PCB's [ ] Yes [X] No Dioxin [ ] Yes [X] No

If yes, specify type (if applicable) and concentration:

(15.) Have you obtained toxicity studies of this waste material? yes If so, please attach a copy of the results.

(16.) Required personal protective equipment & procedures:

I hereby certify that the above and attached description is complete and accurate to the best of my knowledge and ability to determine, that no deliberate or willful omissions of composition or properties exists, and that all known or suspected hazards have been disclosed.

Generator's Authorized Signatory
William S. Shore Title Environmental Coordinator Date 11/2/90

F

2928

WASTE PROFILE SHEETS

General Directions: In order for us to determine whether we can lawfully and safely transport, treat, and dispose of your waste material, we must obtain certain information about the chemical and physical properties of the waste and its chemical composition. Please be complete in your answers; if your response is "none" or "not available", so indicate. Answers must be printed in ink or typewritten and the completed form must be signed. Please make a copy of this form for your records.

(1.) Generator Name: Rock Island Arsenal (RIA) EPA Generator No.: IL5210021833

(2.) Generating Facility Complete Address:
Commander, Rock Island Arsenal, ATTN: SMCRI-SEM (Dr. Shore) Rock Island, IL 61299-5000

(3.) Authorized Company Representative: Dr. William Shore Title: Environmental Coordinator

(4.) Phone Number: (309) 782- 7855

(5.) Emergency Contact RIA Fire Department Title: Shift Chief Phone: (309) 782-5148

(6.) General Description of The Waste: ALKALINE TANK 3 LIQUID
"PLATING SHOP WASTE" F CC. 9064

(7.) Process Generating Waste: Plating Shop

(8.) Anticipated volume 60 [ ] Gallons [ ] Tons [ ] Cubic Yards [X] Drums, or [ ] Other
Per: [ ] Day [ ] Week [ ] Month [X] Year, or [ ] Other 9064249-290; 9064293-308; 9064323,9

(9.) Waste Properties:

(a.) Vapor pressure (in mm of Hg @ 25 °C)

(b.) Flash Point [ ] °F [ ] °C [ ] Closed Cup [ ] Open Cup

(c.) Phases/layers: [ ] Single [X] Bilayered [ ] Multilayered

(d.) Physical State @ 20 °C: [ ] Solid [X] Liquid [X] Semi-Solid [ ] Powder [ ] Other

(e.) pH 6 (f.) Solubility (g/100g H_2O) @ 20 °C:

(g.) Density: 11 [ ] lb./ft.^{3} [ ] lb./yd.^{3} [X] lb./gal. [ ] g/cc

(h.) Odor: [ ] Strong [X] Mild [ ] None

(i.) Reactivity: Water [ ] Yes [X] No Autopolymerizable [ ] Yes [X] No Shock Sensitive [ ] Yes [X] No
Pyrophoric [ ] Yes [X] No Thermally Sensitive [ ] Yes [X] No Explosive [ ] Yes [X] No

(10.) Complete waste composition (with ranges—indicate % or ppm.) Attach Additional Pages if Necessary

ORGANIC	INORGANIC
	Cr=9400 ppm
	Cd=54 ppm
	Pb=1200 ppm

(11.) Sample Included [X] Yes [ ] No

(12.) Is this waste a "Hazardous Waste" as defined by regulations of the U.S. Environmental Protection Agency pursuant to 40 CFR § 261 of the Resource Conservation and Recovery Act? yes

(13.) Manifest Information

Proper USDOT Shipping Name	USDOT Hazard Class	UN or NA No.	USEPA Haz. Code	USEPA Haz. Waste No. (Type)
Hazardous Waste Liquid, NOS	ORM-E	NA9189	T	D007 D008, D006

(14.) This waste contains: Biological Materials [ ] Yes [X] No Pathogens [ ] Yes [X] No Etiological Agents [ ] Yes [X] No
Radioactive Materials [ ] Yes [X] No PCB's [ ] Yes [X] No Dioxin [ ] Yes [X] No

If yes, specify type (if applicable) and concentration:

(15.) Have you obtained toxicity studies of this waste material? yes If so, please attach a copy of the results.

(16.) Required personal protective equipment & procedures:

I hereby certify that the above and attached description is complete and accurate to the best of my knowledge and ability to determine, that no deliberate or willful omissions of composition or properties exists, and that all known or suspected hazards have been disclosed.

Generator's Authorized Signatory
William S. Shore Title Environmental Coordinator Date 11/2/90

G, H, I

I.D. # 2928
GROUP

WASTE PROFILE SHEETS

General Directions: In order for us to determine whether we can lawfully and safely transport, treat, and dispose of your waste material, we must obtain certain information about the chemical and physical properties of the waste and its chemical composition. Please be complete in your answers; if your response is "none" or "not available", so indicate. Answers must be printed in ink or typewritten and the completed form must be signed. Please make a copy of this form for your records.

(1.) Generator Name: Rock Island Arsenal (RIA) EPA Generator No.: IL5210021833

(2.) Generating Facility Complete Address:
Commander, Rock Island Arsenal, ATTN: SMCRI-SEM (Dr. Shore) Rock Island, IL 61299-5000

(3.) Authorized Company Representative: Dr. William Shore Title: Environmental Coordinator

(4.) Phone Number: (309) 782- 7855

(5.) Emergency Contact RIA Fire Department Title: Shift Chief Phone: (309) 782-5148

(6.) General Description of The Waste: ALKALI TANK SOLIDS + NICKEL STRIP SLUDGE + MURATIC SLUDGE "PLATING SHOP WASTE" I + G + H C.C. 9064

(7.) Process Generating Waste: Plating Shop

(8.) Anticipated volume 4 [ ] Gallons [ ] Tons [ ] Cubic Yards [X] Drums, or [ ] Other
Per: [ ] Day [ ] Week [ ] Month [X] Year, or [ ] Other #9064107-109, 9064202

(9.) Waste Properties:

(a.) Vapor pressure (in mm of Hg @ 25°C)

(b.) Flash Point [ ] °F [ ] °C [ ] Closed Cup [ ] Open Cup

(c.) Phases/layers: [ ] Single [ ] Bilayered [X] Multilayered

(d.) Physical State @ 20 °C: [X] Solid [ ] Liquid [X] Semi-Solid [ ] Powder [ ] Other

(e.) pH (f.) Solubility (g/100g H_2O) @ 20°C:

(g.) Density: [ ] lb./ft.^{3} [ ] lb./yd.^{3} [X] lb./gal. [ ] g/cc

(h.) Odor: [ ] Strong [X] Mild [ ] None

(i.) Reactivity: Water [ ] Yes [ ] No Autopolymerizable [ ] Yes [ ] No Shock Sensitive [ ] Yes [ ] No
Pyrophoric [ ] Yes [ ] No Thermally Sensitive [ ] Yes [ ] No Explosive [ ] Yes [ ] No

(10.) Complete waste composition (with ranges—indicate % or ppm.) Attach Additional Pages if Necessary

ORGANIC

INORGANIC
Cr = 28,806ppm
Cd = 13,186ppm
Pb = 846ppm

(11.) Sample Included [X] Yes [ ] No

(12.) Is this waste a "Hazardous Waste" as defined by regulations of the U.S. Environmental Protection Agency pursuant to 40 CFR § 261 of the Resource Conservation and Recovery Act? yes

(13.) Manifest Information

Proper USDOT Shipping Name	USDOT Hazard Class	UN or NA No.	USEPA Haz. Code	USEPA Haz. Waste No. (Type)
Hazardous Waste Liquid, NOS	ORM-E	NA9189	T	D007 D008, D006

(14.) This waste contains: Biological Materials [ ] Yes [X] No Pathogens [ ] Yes [X] No Etiological Agents [ ] Yes [X] No
Radioactive Materials [ ] Yes [X] No PCB's [ ] Yes [X] No Dioxin [ ] Yes [X] No

If yes, specify type (if applicable) and concentration:

(15.) Have you obtained toxicity studies of this waste material? yes If so, please attach a copy of the results.

(16.) Required personal protective equipment & procedures: 1

I certify under penalty of law that I personally have examined and am familiar with the waste through analysis and testing or through knowledge of the waste to support this certification that the waste complies with the treatment standards specified in 40 CFR Part 268 Subpart D and all the applicable prohibitions set forth in 40 CFR 268.32 or RCRA section 3004(d). I believe that the information I submitted is true, accurate and complete. I am aware that there are significant penalties for submitting a false certification, including the possibility of a fine and imprisonment.

Generator's Authorized Signatory
William L. Shore Title Envir. Coord. Date 4/2/90

G, H, I

I.D. # 3948 GHI
GROUP

WASTE PROFILE SHEETS

General Directions: In order for us to determine whether we can lawfully and safely transport, treat, and dispose of your waste material, we must obtain certain information about the chemical and physical properties of the waste and its chemical composition. Please be complete in your answers; if your response is "none" or "not available", so indicate. Answers must be printed in ink or typewritten and the completed form must be signed. Please make a copy of this form for your records.

(1.) Generator Name: Rock Island Arsenal (RIA) EPA Generator No.: IL5210021833

(2.) Generating Facility Complete Address:
Commander, Rock Island Arsenal, ATTN: SMCRI-SEM (Dr. Shore) Rock Island, IL 61299-5000

(3.) Authorized Company Representative: Dr. William Shore Title: Environmental Coordinator

(4.) Phone Number: (309) 782- 7855

(5.) Emergency Contact RIA Fire Department Title: Shift Chief Phone: (309) 782-5148

(6.) General Description of The Waste: ALKALI TANK SOLIDS + NICKEL STRIP SLUDGE + MURATIC SLUDGE
"PLATING SHOP WASTE" I + G + H C.C. 9064

(7.) Process Generating Waste: Plating Shop

(8.) Anticipated volume 4 [ ] Gallons [ ] Tons [ ] Cubic Yards [X] Drums, or [ ] Other
Per: [ ] Day [ ] Week [ ] Month [X] Year, or [ ] Other #9064107-109, 9064207

(9.) Waste Properties:

(a.) Vapor pressure (in mm of Hg @ 25 °C)

(b.) Flash Point [ ] °F [ ] °C [ ] Closed Cup [ ] Open Cup

(c.) Phases/layers: [ ] Single [ ] Bilayered [X] Multilayered

(d.) Physical State @ 20 °C: [X] Solid [ ] Liquid [X] Semi-Solid [ ] Powder [ ] Other

(e.) pH (f.) Solubility (g/100g H_2O) @ 20 °C:

(g.) Density: [ ] lb./ft.^{3} [ ] lb./yd.^{3} [X] lb./gal. [ ] g/cc

(h.) Odor: [ ] Strong [X] Mild [ ] None

(i.) Reactivity: Water [ ] Yes [ ] No Autopolymerizable [ ] Yes [ ] No Shock Sensitive [ ] Yes [ ] No
Pyrophoric [ ] Yes [ ] No Thermally Sensitive [ ] Yes [ ] No Explosive [ ] Yes [ ] No

(10.) Complete waste composition (with ranges—indicate % or ppm.) Attach Additional Pages if Necessary

ORGANIC	INORGANIC
	CR = 28,806 ppm
	Cd = 13,186 ppm
	Pb = 846 ppm

(11.) Sample Included [X] Yes [ ] No

(12.) Is this waste a "Hazardous Waste" as defined by regulations of the U.S. Environmental Protection Agency pursuant to 40 CFR § 261 of the Resource Conservation and Recovery Act? yes

(13.) Manifest Information

Proper USDOT Shipping Name	USDOT Hazard Class	UN or NA No.	USEPA Haz. Code	USEPA Haz. Waste No. (Type)
Hazardous Waste Liquid, NOS	ORM-E	NA9189	T	D007 D008, D006

(14.) This waste contains: Biological Materials [ ] Yes [X] No Pathogens [ ] Yes [X] No Etiological Agents [ ] Yes [X] No
Radioactive Materials [ ] Yes [X] No PCB's [ ] Yes [X] No Dioxin [ ] Yes [X] No

If yes, specify type (if applicable) and concentration:

(15.) Have you obtained toxicity studies of this waste material? yes If so, please attach a copy of the results.

(16.) Required personal protective equipment & procedures:

I certify under penalty of law that I personally have examined and am familiar with the waste through analysis and testing or through knowledge of the waste to support this certification that the waste complies with the treatment standards specified in 40 CFR Part 268 Subpart D and all the applicable prohibitions set forth in 40 CFR 268.32 or RCRA section 3004(d). I believe that the information I submitted is true, accurate and complete. I am aware that there are significant penalties for submitting a false certification, including the possibility of a fine and imprisonment.

Generator's Authorized Signatory
William L. Shore Title Envir. Coord. Date 11/2/90

90-4221

Bldg 64 Samples

	Sample	Chromium	Cadmium	Lead	pH	
A	Acid Tank 1 Sludge	3800 ppm	830 ppm	330 ppm	>7, <12.5	
B	Acid Tank 2 Liquid	9000 ppm	1100 ppm	2.4 ppm	<2	Acidity to pH 3.7 = 2260 mg CaCO3/L.
C	Acid Tank 2 Sludge	14000 ug/g	2000 ug/g	370 ug/g		
D	Alkaline Tank 1 Mix	21000 ppm	190 ppm	5800 ppm	>7, <12.5	
E	Alkaline Tank 2 Mix	15000 ppm	150 ppm	8000 ppm	>7, <12.5	
F	Alkaline Tank 3 Mix	9400 ppm	54 ppm	1200 ppm	6	
G	Nickel Strip Sludge	36 ug/g	16 ug/g	380 ug/g		
H	Muratic Acid Sludge	28000 ug/g	13000 ug/g	450 ug/g		
I	Alkali Cleaner Solids	770 ug/g	170 ug/g	16 ug/g		
J	HF Tank	290 ug/g	2.3 ug/g	25 ug/g		
K	HF Wall	280 ug/g	1.4 ug/g	19000 ug/g		
L	Last Drum	15000 ug/g	27 ug/g	4800 ug/g		

used

28,806

13,186

846

Bldg 64 Samples 90-4221

	Sample	Results
M	Silver Plating Solution	CN = 7000 ppm, Ag = 140 g/l
N	Gold Plating Solution 1	CN = 70 ppm, Approx. 350 ppm Au
O	Gold Plating Solution 2	CN = 100 ppm, Approx. 1000 ppm Au
P	Sodium Sulfite	Sodium sulfite and sodium sulfate
Q	Enstrip C	Ammonium persulfate
R	Glycol	IR - Ethylene glycol, 65%
S	HB Powder (Silica)	Silica
T	Stop Off Wax	0.4 ppm Cr VI
U	Degreaser	Water and oil mixture, containing approx. 1% 1,1,1-trichloroethane
V	Unknown black powder	Polyvinyl chloride - vinyl acetate copolymer

WASTE PROFILE SHEETS AND MANIFESTS FOR WASTES REFERRED TO IN TABLE 3-8

State Form LPC 62 8/8 IL532-0610

NOTE: FORM DESIGNED TO PRINT 8 LINES PER INCH

EPA Form 8700-22 (Rev. 6-89)

Form Approved OMB No. 2050-0039 Expires 10-31-

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: 1 L 5 2 1 0 0 2 1 8 3 3 — Manifest Document No.: 90137

2. Page 1 of 1

Information in the shaded areas is not required by Federal law, but is required by Illinois law.

3. Generator's Name and Mailing Address — Location If Different:
Rock Island Arsenal, Bldg 154, Arsenal Island
Rock Island IL 61299

4. Generator's Phone (309) 782-1619

A. Illinois Manifest Document Number: IL4290893 — MANIFEST FEE PAID

B. Illinois Generator's ID: 1 6 1 8 1 3 0 0 0 1

5. Transporter 1 Company Name: GSX Services Incorporated

6. US EPA ID Number: M D D 9 8 0 5 5 4 6 5 3

C. Illinois Transporter's ID: 1 8 8 7

D. (803) 798-2993 Transporter's Phone

7. Transporter 2 Company Name:

8. US EPA ID Number:

E. Illinois Transporter's ID:

F. ( ) Transporter's Phone

9. Designated Facility Name and Site Address:
Special Waste Incorporated
1713 Legion Road
Athens, TN 37303

10. US EPA ID Number: T N D 0 3 4 5 4 7 1 4 1

G. Illinois Facility's ID: 9 4 7 1 0 7 0 0 0 1

H. Facility's Phone: ( ) (615) 745-9222

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. 'RQ' Waste Hydrofluoric Acid Solution Corrosive Material UN1790 (D002,D006,D007,D008)	0.0.5	D.F	0.0.2.7.5	1	EPA HW Number: XX D 0 0 2 — Authorization Number:
b. Waste Combustible Liquid N.O.S. Combustible Liquid NA1993 (F001) (Oil, Trichloroethane)	0.0.1	D.F	0.0.0.2.0	1	EPA HW Number: XX F 0 0 1 — Authorization Number:
c. 'RQ' Waste Corrosive Liquid N.O.S. Corrosive Material UN1760 (D002,D006,D007,D008) (Triethanolamine, Sodium Hydroxide)	0.0.3	DM	0.0.1.6.5	1	EPA HW Number: XX D 0 0 2 — Authorization Number:
d. 'RQ' Hazardous Waste Solid N.O.S. ORM-E NA9189 (D006,D007,D008) (Tank Sludge, Heavy Metals)	0.0.1	DM	0.0.0.0.1	2	EPA HW Number: XX D 0 0 6 — Authorization Number:

J. Additional Descriptions for Materials Listed Above
a. 833424 also D006,D007,D008
b. 833381
c. 833425 also D006,D007,D008
d. 833442 also D007,D008
1 DM = 1 DF
Truck# Y07
P.O.# JF
1 yd³ = 345#
DLA-200-89-D-034/[redacted]

K. Handling Codes for Wastes Listed Above In Item # 14
1 = Gallons 2 = Cubic Yards

15. Special Handling Instructions and Additional Information
24 Hr. Emergency Phone (309) 788-6534
GSX IS THE HAZARDOUS WASTE CONTRACTOR FOR THIS FACILITY. Guide DOT-P-5800.4
PLEASE ROUTE ALL BILLING AND CORRESPONDENCE TO:
GSX; P.O. BOX 140, SAUKVILLE,WI 53080 a.60 b.27 c.60 d.31

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: William L Lafrenz / DAVID A. FOSS — Signature: William L Lafrenz / David A. Foss — Date: Month 12 Day 19 Year 90

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: JEFFREY FEYERSEN — Signature: Jeffrey Feyersen — Date: Month 12 Day 1[illegible] Year [illegible]

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name: — Signature: — Date: Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in item 19.
Printed/Typed Name: William G Melton — Signature: [signature] — Date: Month 01 Day 02 Year 9[illegible]

The Agency is authorized to require pursuant to Illinois Revised Statutes, Chapter 111½, Section 21, that this information be submitted to the Agency. Failure to provide the information may result in a civil penalty against the owner or operator of not to exceed $25,000 per day of violation. Falsification of the information may result in a fine up to $50,000 per day of violation and imprisonment up to 5 years. This form has been approved by the Forms Management Center.

COPY 1. TSD MAIL TO GENERATOR

MANIFEST # IL4290893-90137

MANF. LINE ITEM	DO #	CLIN	HIN	ITEM DESCRIPTION	# OF CONT.	VOL.
A	151	0129	1305	Hydrofluoric Acid Tank		55 GL
		0131	1305	" "		55 GL
		0133	1305	" "		55 GL
		0135	1305	" "		55 GL
		0137	1305	" "		55 GL
		0130	1201	Container		
		0132	1201			
		0134	1201			
		0136	1201			
		0138	1201	4DF, 1DM 1DM=1DF 55 gallon	5	
B	151	0139	4742	Oil w/ 1,1,1 Trichlor		20GL
		0140	1201	Container 1DF 20gal	1	
C		0145	1656	Rust Stripper		55gal
		0147	1656			55gal
		0149	1656			55gal
		0146	1201	Container 1x55gal		
		0148	1201	1x85gl		
		0150	1201	1x85gl	3	

CONTRACT # DEA-200-89-D-0034

GSX GOVERNMENT SERVICES, INC.

SIGNATURE Chris Robitaille

DATE 12-19-90

C.O.R.

SIGNATURE [illegible]

DATE 19 Dec 90

REV. (9/5/90)

SUPPLEMENTAL DOCUMENT TO BLOCK 5

MANIFEST # IL4290893-90137

MANF. LINE ITEM	DO #	CLIN	HIN	ITEM DESCRIPTION	# OF CONT.	VOL.
D	151	0151	2004	Tank Cleanout Materials		345#
		0152	1201	Container 55 gal	1	

CONTRACT # DLA-200-89-D-0034

GSX GOVERNMENT SERVICES, INC. C.O.R.

SIGNATURE Chris Goldbach SIGNATURE William L Kettering

DATE 12-19-90 DATE 19 Dec 90

REV. (9/5/90)

Generator Name/Location: Rock Island Arsenal, Rock Island IL

EPA ID Number: IL5210021833 Manifest Number: IL4240893-90137

Drum Number, Waste Profile or ARF Number	Category No.	State EPA Waste Number(s)	Corresponding Treatment Standard/ Applicable Variance/Other Information
833424	2	D002	NWW- Acid Liquid DEACT- Refer to 268.42 table 2
	2	D006	NWW Refer to 268.41 table CCWE
	2	D007	NWW Refer to 268.41 table CCWE
	2	D008	NWW Refer to 268.41 table CCWE
833381	2	F001	NWW Refer to Legend #22
833475	2	D002	NWW- Alkline liquid DEACT- Refer to 268.42 table 2
	2	D006	NWW- Refer to 268.41 table CCWE
	2	D007	NWW Refer to 268.41 table CCWE
	2	D008	NWW Refer to 268.41 table CCWE

SIGNATURE: David A. Foss TITLE: Physical Scientist

PRINT NAME: DAVID A. FOSS DATE: 19 Dec 90

ONLY ORIGINAL SIGNATURES WILL BE ACCEPTED! September 23, 1988

* For Treatment Standards Expressed as Concentration, Please Enter the Legend Number from the Legend Below for the Constituents contained in the Waste.

LEGEND FOR TREATMENT STANDARDS EXPRESSED AS CONCENTRATION

TABLE CCWE-CONSTITUENTS IN WASTE EXTRACT

F001-F005 spent solvent		Concentration (in mg/l) Waste Water Containing Spent Solvents	All other Spent Solvent Wastes
Legend #	Constituent Name		
1	Acetone	0.05	0.59
2	n-butyl alcohol	5.0	5.0
3	Carbon disulfide	1.05	4.81
4	Carbon Tetrachloride	.05	.96
5	Chlorobenzene	.15	.05
6	Cresols (and cresylic acid)	2.82	.75
7	Cyclohexanone	125	.75
8	1,2-dichlorobenzene	65	.125
9	Ethyl acetate	.05	.75
10	Ethyl benezene	.05	.053
11	Ethyl ether	.05	.75
12	Isobutanol	5.0	5.0
13	Methanol	.25	.75
14	Methylene chloride	.20	.96
15	Methylene chloride (from the pharmaceutical industry)	0.44	.96
16	Methyl ethyl ketone	0.05	0.75
17	Methyl isobuty ketone	0.05	0.33
18	Nitrobenzene	0.66	0.125
19	Pyridine	1.12	0.33
20	Tetrachlorethylene	0.079	0.05
21	Toluene	1.12	0.33
22	1,1,1-Trichloroethane	1.05	0.41
23	1,2,2-richloro-1,2,2-trifluoroethane	1.05	0.96
24	Trichloroethylene	0.062	0.091
25	Thrichlorofluoromethane	0.05	0.96
26	Xylene	0.05	0.15

F010-F023 and F026-F028 dioxin Containing Waste		Concentration
Legend #	Constituent Name	
27	HxCDD-All Hexachlorodibenzo-p-dioxins	1 ppb
28	HxCDF-All Hexachlorodibenzofurans	1 ppb
29	PeCdd-All Pentachlorodibenzo-p-dioxins	1 ppb
30	PeCDF-All Pentachlorodibenzofurans	1 ppb
31	TCDD-All Tetrachlorodibenzo-p-dioxins	1 ppb
32	TCDF-All Tetrachlorodibenzofurans	1 ppb
33	2,4,5-Trichlorophenol	0.05 ppm
34	2,4,6-Trichlorophenol	0.05 ppm
35	2,3,4,6-Tetrachlorophenol	0.10 ppm
36	Pentachlorophenol	0.01 ppm

CALIFORNIA LIST WASTES

37	Nickel	134 mg/l
38	Thallium	130 mg/l
39	Cyanide (Liquid)	1000 mg/l

Generator Name/Location: Rock Island Arsenal, Rock Island IL

EPA ID Number: IL5210021833 Manifest Number: IL4290893-90137

Drum Number, Waste Profile or ARF Number	Category No.	State EPA Waste Number(s)	Corresponding Treatment Standard/ Applicable Variance/Other Information
833442	2	D006	NWW Refer to S268.41 table CCWE
	2	D007	NWW Refer to S268.41 table CCWE
	2	D008	NWW Refer to S268.41 table CCWE

SIGNATURE: David A. Foss TITLE: Hygiene Scientist

PRINT NAME: DAVID A. FOSS DATE: 19 Dec 90

ONLY ORIGINAL SIGNATURES WILL BE ACCEPTED! September 23, 1988

* For Treatment Standards Expressed as Concentration, Please Enter the Legend Number from the Legend Below for the Constituents contained in the Waste.

LEGEND FOR TREATMENT STANDARDS EXPRESSED AS CONCENTRATION

TABLE CCWE-CONSTITUENTS IN WASTE EXTRACT

F001-F005 spent solvent		Concentration (in mg/l) Waste Water Containing Spent Solvents	All other Spent Solvent Wastes
Legend #	Constituent Name		
1	Acetone	0.05	0.59
2	n-butyl alcohol	5.0	5.0
3	Carbon disulfide	1.05	4.81
4	Carbon Tetrachloride	.05	.96
5	Chlorobenzene	.15	.05
6	Cresols (and cresylic acid)	2.82	.75
7	Cyclohexanone	.125	.75
8	1,2-dichlorobenzene	.65	.125
9	Ethyl acetate	.05	.75
10	Ethyl benezene	.05	.053
11	Ethyl ether	.05	.75
12	Isobutanol	5.0	5.0
13	Methanol	.25	.75
14	Methylene chloride	.20	.96
15	Methylene chloride (from the pharmaceutical industry)	0.44	.96
16	Methyl ethyl ketone	0.05	0.75
17	Methyl isobuty ketone	0.05	0.33
18	Nitrobenzene	0.66	0.125
19	Pyridine	1.12	0.33
20	Tetrachlorethylene	0.079	0.05
21	Toluene	1.12	0.33
22	1,1,1-Trichloroethane	1.05	0.41
23	1,2,2-richloro-1,2,2-trifluorethane	1.05	0.96
24	Trichlorethylene	0.062	0.091
25	Thrichlorofluoromethane	0.05	0.96
26	Xylene	0.05	0.15

F010-F023 and F026-F028 dioxin Containing Waste		Concentration
Legend #	Constituent Name	
27	HxCCD-kAll Hexachlorodibenzo-p-dioxins	1 ppb
28	HxCDF-All Hexachlorodibenzofurans	1 ppb
29	PeCdd-All Pentachlorodibenzo-p-dioxins	1 ppb
30	PeCDF-All Pentachlorodibenzofurans	1 ppb
31	TCDD-All Tetrachlorodibenzo p dioxins	1 ppb
32	TCDF-All Tetrachlorodibenzofurans	1 ppb
33	2,4,5-Trichlorophenol	0.05 ppm
34	2,4,6-Trichlorophenol	0.05 ppm
35	2,3,4,6-Tetrachlorophenol	0.10 ppm
36	Pentachlorophenol	0.01 ppm

CALIFORNIA LIST WASTES

37	Nickel	134 mg/l
38	Thallium	130 mg/l
39	Cyanide (Liquid)	1000 mg/l

STATE OF ILLINOIS

P.O. BOX 19276 SPRINGFIELD ILLINOIS 62794-9276 (217) 782-6761

State Form LPC 62 8/81 IL532-0610

FOR SHIPMENT OF HAZARDOUS, INFECTIOUS AND SPECIAL WASTE

NOTE: FORM DESIGNED TO PRINT 8 LINES PER INCH

EPA Form 8700-22 (Rev. 6-89) Form Approved OMB No. 2050-0039 Expires 9-30-91

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: IL5210021833

Manifest Document No.: 91003

2. Page 1 of 1

Information in the shaded areas is not required by Federal law, but is required by Illinois law

3. Generator's Name and Mailing Address / Location If Different:
Rock Island Arsenal
Bldg.154, Arsenal Island, Rock Island, IL 61299

4. Generator's Phone: 309) 782-1619

A. Illinois Manifest Document Number: IL4290972 MANIFEST FEE PAID

B. Illinois Generator's ID: 1 6 1 8 1 3 0 0 0 1

5. Transporter 1 Company Name: GSX SERVICES INC

6. US EPA ID Number: MDD981554653

C. Illinois Transporter's ID: 1887

D. Transporter's Phone: 303 978 2983

7. Transporter 2 Company Name

8. US EPA ID Number

E. Illinois Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address:
Special Waste Inc.
1713 Legion Road
Athens TN, 37303

10. US EPA ID Number: TND034547141

G. Illinois Facility's ID

H. Facility's Phone: 615 745-9222

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. ~~"RQ" Waste Hydrofluoric Acid, Solution Corrosive Liquid, UN1790(D002,D007)~~ DID NOT TAKE WYG 1-8-91					EPA HW No. 2 X X Authorization Number
b. "RQ" Waste Corrosive Liquid, N.O.S. Corrosive ~~Liquid~~ Solid, UN1760(D002) (Sodium Hydroxide Solution) WF	0.0.1	DM	0.0.0.5.5	1	EPA HW No. 2 X X Authorization Number
c. "RQ" Waste Oxidizer, corrosive solid, N.O.S. Oxidizer, NA9194(D001) (Sodium Nitrate, Sodium Hydroxide mixture)	0.0.1	DM	0.0.0.0.1	2	EPA HW No. 1 X X Authorization Number
d. Residue: "Last contained 1,1,1-Trichloroethane, oil AND ANTI-FREEZE"	1.0.0	DM	0.0.0.3.4	2	EPA HW No. E X X Authorization Number

J. Additional Descriptions for Materials Listed Above
~~A)833462 ADD HW#D007~~
B)833463
C)833464 1yd³=445#
D)SWI1000 34yd³=3840#
Truck#C19 PO#C20

K. Handling Codes for Wastes Listed Above in Item # 14
1 = Gallons 2 = Cubic Yards

15. Special Handling Instructions and Additional Information
A)Guide#60 C)Guide#45
B)Guide#60
Send all correspondence and billing to: ENTER PHONE# 1-309-788-6534
GSX, Inc., PO Box 140, Saukville, WI 53080 DLA-200-89-D-0034 DO# 162,

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: William L. LaFrenz / David Foss — Signature — Date: Month 0 1 Day 0 8 Year 9 1

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Charlie Martin — Signature — Date: Month 0 1 Day 0 8 Year 9 1

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name — Signature — Date: Month Day Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name — Signature — Date: Month Day Year

[illegible]

COPY 1 TO BE MAILED TO [illegible]

Generator Name/Location: Rock Island Arsenal, Rock Island, IL

EPA ID Number: IL6 [illegible] 33 Manifest Number: IL6 [illegible] 972 - 91003

Drum Number, Waste Profile or ARF Number	Category No.	State EPA Waste Number(s)	Corresponding Treatment Standard/ Applicable Variance/Other Information
(A) 833463	2	D001	NON-WAR. (FHWS) 268.42 TABLE 2, DEA
(B) 833464	2	D001	NON-ENCR. FSUA, RORC 268.42 TABLE 2
(D) 50051000	1	None	Empty Drums

SIGNATURE: David Foss TITLE: Physical Scientist

PRINT NAME: DAVID FOSS DATE: 8 Jan 91

ONLY ORIGINAL SIGNATURES WILL BE ACCEPTED! September 23 1

* For Treatment Standards Expressed as Concentration, Please Enter the Legend Number from the Legend Below for the Constituents contained i the Waste.

LEGEND FOR TREATMENT STANDARDS EXPRESSED AS CONCENTRATION

TABLE CCWE-CONSTITUENTS IN WASTE EXTRACT

F001-F005 spent solvent		Concentration (in mg/l) Waste Water Containing Spent Solvent	All other Spent Solvent Wastes
Legend #	Constituent Name		
1	Acetone	0.05	0.39
2	n-butyl alcohol	5.0	5.0
3	Carbon disulfide	1.05	4.81
4	Carbon Tetrachloride	.05	.96
5	Chlorobenzene	.15	.05
6	Cresols (and cresylic acid)	2.82	.75
7	Cyclohexanone	.125	.75
8	1,2-dichlorobenzene	.65	.125
9	Ethyl acetate	.05	.75
10	Ethyl benzene	.05	.053
11	Ethyl ether	.05	.75
12	Isobutanol	5.0	5.0
13	Methanol	.25	.75
14	Methylene chloride	.20	.96
15	Methylene chloride (from the pharmaceutical industry)	0.44	.96
16	Methyl ethyl ketone	0.05	0.75
17	Methyl isobutyl ketone	0.05	0.33
18	Nitrobenzene	0.66	0.125
19	Pyridine	1.12	0.33
20	Tetrachloroethylene	0.079	0.05
21	Toluene	1.12	0.33
22	1,1,1-Trichloroethane	1.05	0.41
23	1,2,2-trichloro-1,1,1-trifluoroethane	1.05	0.96
24	Trichloroethylene	0.061	0.091
25	Trichlorofluoromethane	0.05	0.96
26	Xylene	0.05	0.15

F010-F023 and F026-F028 dioxin Containing Waste		Concentrati
Legend #	Constituent Name	
27	HxCDD-All Hexachlorodibenzo-p-dioxins	1 pp
28	HxCDF-All Hexachlorodibenzofurans	1 pp
29	PeCDD-All Pentachlorodibenzo-p-dioxins	1 pp
30	PeCDF-All Pentachlorodibenzofurans	1 pp
31	TCDD-All Tetrachlorodibenzo-p-dioxins	1 pp
32	TCDF-All Tetrachlorodibenzofurans	1 pp
33	2,4,5-Trichlorophenol	0.05 pp
34	2,4,6-Trichlorophenol	0.05 pp
35	2,3,4,6-Tetrachlorophenol	0.10 pp
36	Pentachlorophenol	0.01 pp

CALIFORNIA LIST WASTES

37	Nickel	134 mg
38	Thallium	130 mg
39	Cyanide (Liquid)	1000 mg

SUPPLEMENTAL DOCUMENT TO BLOCK J

MANIFEST # IL4240972-91003

INF. LINE ITEM	DO #	CLIN	HIN	ITEM DESCRIPTION	# OF CONT.	VOL.
B	160	0142	1656	Caustic Solution		5560
	160	0143	1201	55 gal Container	1	
C	160	0144	2304	RIA Mix #5		465#
	162	145	1201	85 gal Container	1	
D	162	0001-0011	6089	Empty Drums	100	3840#

CONTRACT # DCA200-89-D-0034/160,162

GSX GOVERNMENT SERVICES, INC.

SIGNATURE Dan DeLaura

DATE 1-8-91

C.O.R.

SIGNATURE [signature]

DATE 1-8-91

REV. (9/5/90)

STATE OF ILLINOIS ENVIRONMENTAL PROTECTION AGENCY DIVISION OF LAND POLLUTION CONTROL

P.O. BOX 19276 SPRINGFIELD, ILLINOIS 62794-9276 (217) 782-6761

State Form LPC 62 8 81 IL532-0610

24 JAN 1991

FOR SHIPMENT OF HAZARDOUS INFECTIOUS AND SPECIAL WASTE

NOTE: FORM DESIGNED TO PRINT 8 LINES PER INCH. **EPA Form 8700-22 (Rev. 6-89)** Form Approved OMB No. 2050-0039 Expires 9-30-91

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No: IL5210021833
Manifest Document No: ~~3-301~~ 91001 WJL

2. Page 1 of 1

Information in the shaded areas is not required by Federal law, but is required by Illinois law.

3. Generator's Name and Mailing Address / Location If Different:
Rock Island Arsenal
Bldg.154, Arsenal Island, Rock Island, IL 61299

4. Generator's Phone (309) 782-1619

A. Illinois Manifest Document Number: IL4193171 MANIFEST FEE PAID

B. Illinois Generator's ID: 1 6 1 8 1 3 0 0 0 1

5. Transporter 1 Company Name: GSX Services Inc
6. US EPA ID Number: MND 981554653

C. Illinois Transporter's ID: 1 8 8 7

D. (813) 788-3793 Transporter's Phone

7. Transporter 2 Company Name
8. US EPA ID Number

E. Illinois Transporter's ID

F. ( ) Transporter's Phone

9. Designated Facility Name and Site Address:
Special Waste Inc.
1713 Legion Road
Athens TN, 37303
10. US EPA ID Number: TND034547141

G. Illinois Facility's ID: 9 4 7 1 0 7 0 0 0 1

H. Facility's Phone: (615) 745-9222

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. "RQ" Waste ~~Flammable Solid, N.O.S.~~ Liquid PAINT, NOS Flammable ~~Solid~~ Liquid, ~~UN1325~~ 1993 (D001) (Paint ~~solid~~) UN1263 WJL 1-8-91	003	DM	00001	2	EPA/HW Number XXD001 Authorization Number
b. Non-Regulated Solid (NONE) (Grease)	001	DM	00001	2	EPA/HW Number XXNONE Authorization Number
c. Non-Regulated Solid (NONE) (Hydrocarbon Preservative)	011	DM	00004	2	EPA/HW Number XXNONE Authorization Number
d. Non-Regulated Liquid (NONE) (Preservative Oil)	002	DM	00110	1	EPA/HW Number XXNONE Authorization Number

J. Additional Descriptions for Materials Listed Above
A) 833297 1 YD3 = 465#, 465# = 50 GL
B) 833364 1 YD3 = 65#
C) 833458 4 YD3 = 2085#
D) 833403

Truck# C14 PO# CM

K. Handling Codes for Wastes Listed Above in Item # 14
1 = Gallons 2 = Cubic Yards

15. Special Handling Instructions and Additional Information
A) Guide# 27
Emer. Phone # 1-314-788-6534
Send all correspondence and billing to: GSX, Inc., PO Box 140, Saukville, WI 53080 DLA-200-89-D-0034 DO# 153

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; **OR,** if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name	Signature	Date (Month Day Year)
William L. LaFranz DAVID A FOSS	William L. LaFranz / David Foss	01 08 91

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date (Month Day Year)
Charlie MARTIN	Charlie Martin	01 08 91

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date (Month Day Year)

FACILITY

19. Discrepancy Indication Space LINE A - SHIPPING NAME CHANGED PER GENERATOR (BECKY LEAF) VIA PHONE WITH DAN DELAURE (LAIDLAW) 1/18/91 WJM

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name	Signature	Date (Month Day Year)
William G. Mahon	William G. Mahon	01 16 91

The Agency is authorized to require pursuant to Illinois Revised Statutes Chapter 111½ Section 21 that this information be submitted to the Agency. Failure to provide the information may result in a civil penalty against the owner or operator of not to exceed $25,000 per day of violation. Falsification of this information may result in a fine up to $50,000 per day of violation and imprisonment up to 5 years. This form has been approved by the Forms Management Center.

In Case of a Spill Call the Illinois Office of Emergency Response at 217/782-3637 and the National Response Center at 800/424-8802 or 202/426-2675.

COPY 1 TSD MAIL TO GENERATOR

NOTE FORM DESIGNED TO PRINT 8 LINES PER INCH. **EPA Form 8700-22 (Rev. 6-89)** Form Approved OMB No. [illegible] Expires [illegible]

UNIFORM HAZARDOUS WASTE MANIFEST

1 Generator's US EPA ID No: IL5210021833 | Manifest Document No: ~~15301~~ 91001 | 2 Page 1 of 1 | Information in the shaded areas is not required by Federal law but is required by Illinois law

3 Generator's Name and Mailing Address: Rock Island Arsenal, Bldg.154, Arsenal Island, Rock Island, IL 61299 | Location If Different

4 Generator's Phone: (309) 782-1619

A. Illinois Manifest Document Number: IL4193171 MANIFEST FEE PAID

B. Illinois Generator's ID: 1 6 1 8 1 3 0 0 0 1

5 Transporter 1 Company Name: GSX Services Inc | 6 US EPA ID Number: MND 980554653

C. Illinois Transporter's ID: 1887

D. (803) 798-2993 Transporter's Phone

7 Transporter 2 Company Name | 8 US EPA ID Number

E. Illinois Transporter's ID

F. ( ) Transporter's Phone

9 Designated Facility Name and Site Address: Special Waste Inc., 1713 Legion Road, Athens TN, 37303 | 10. US EPA ID Number: TND034547141

G. Illinois Facility's ID

H. Facility's Phone: (615) 745-9222

11 US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12 Containers No.	Type	13 Total Quantity	14. Unit Wt/Vol	I. Waste No.
a "RQ" Waste Flammable ~~Solid~~ Liquid, N.O.S. Flammable ~~Solid~~ Liquid, UN~~1325~~ 1993 (D001) (Paint ~~Solid~~)	003	DM	00001	2	EPA HW Number: XX D001 Authorization Number:
b. Non-Regulated Solid (NONE) (Grease)	001	DM	00001	2	EPA HW Number: XX NONE Authorization Number:
c Non-Regulated Solid (NONE) (Hydrocarbon Preservative)	011	DM	00004	2	EPA HW Number: XX NONE Authorization Number:
d Non-Regulated Liquid (NONE) (Preservative Oil)	002	DM	00110	1	EPA HW Number: XX NONE Authorization Number:

J. Additional Descriptions for Materials Listed Above
A) 833297 1YD3=465#, 465#=50 GL
B) 833364 1YD3=65#
C) 833458 4YD3=2005#
D) 833403
Truck# C14 PO# CM

K. Handling Codes for Wastes Listed Above In Item # 14
1 = Gallons 2 = Cubic Yards

15 Special Handling Instructions and Additional Information
A) Guide# 27
Send all correspondence and billing to: Emer. Phone # 1-309-788-6534
GSX, Inc., PO Box 140, Saukville, WI 53080 DLA-200-89-D-0034 DO# 153

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

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Printed/Typed Name	Signature	Date Month Day Year
William L. LaFrance / DAVID A FOSS	[signature] / David Foss	01 08 91

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date Month Day Year
Charlie MARTIN	Charlie Martin	01 08 91

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date Month Day Year

19 Discrepancy Indication Space

20 Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in item 19

Printed/Typed Name	Signature	Date Month Day Year

COPY 1 TSD MAIL TO GENERATOR

Generator Name/Location: Rock Island Arsenal, Rock Island, IL

EPA ID Number: IL5210021833 Manifest Number: IL4193171-91001

Drum Number, Waste Profile or ARF Number	Category No.	State EPA Waste Number(s)	Corresponding Treatment Standard/ Applicable Variance/Other Information
(A) 833297	2	D001	268.42 Table 2 FSUBS, ROPGS, INCIN.
(B) 833364	1	NONE	Non-Regulated Solid.
(C) 833458	1	NONE	Non-Regulated Solid.
(D) 833403	1	NONE	Non-Regulated Liquid.

SIGNATURE: David Foss TITLE: Physical Scientist

PRINT NAME: DAVID FOSS DATE: 8 Jan 91

ONLY ORIGINAL SIGNATURES WILL BE ACCEPTED! September 23, 19[illegible]

* For Treatment Standards Expressed as Concentration, Please Enter the Legend Number from the Legend Below for the Constituents contained in the Waste.

LEGEND FOR TREATMENT STANDARDS EXPRESSED AS CONCENTRATION

TABLE CCWE-CONSTITUENTS IN WASTE EXTRACT

F001-F005 spent solvent		Concentration (in mg/l) Waste Water Containing Spent Solvents	All other Spent Solvent Wastes
Legend #	Constituent Name		
1	Acetone	0.05	0.59
2	n-butyl alcohol	5.0	5.0
3	Carbon disulfide	1.05	4.81
4	Carbon Tetrachloride	.05	.96
5	Chlorobenzene	.15	.05
6	Cresols (and cresylic acid)	2.82	.75
7	Cyclohexanone	.125	.75
8	1,2-dichlorobenzene	.65	.125
9	Ethyl acetate	.05	.75
10	Ethyl benzene	.05	.053
11	Ethyl ether	.05	.75
12	Isobutanol	5.0	5.0
13	Methanol	.25	.75
14	Methylene chloride	.20	.96
15	Methylene chloride (from the pharmaceutical industry)	0.44	.96
16	Methyl ethyl ketone	0.05	0.75
17	Methyl isobutyl ketone	0.05	0.33
18	Nitrobenzene	0.66	0.125
19	Pyridine	1.12	0.33
20	Tetrachlorethylene	0.079	0.05
21	Toluene	1.12	0.33
22	1,1,1-Trichloroethane	1.05	0.41
23	1,2,2-trichloro-1,2,2-trifluoroethane	1.05	0.96
24	Trichloroethylene	0.062	0.071
25	Thrichloroflueromethane	0.05	0.96
26	Xylene	0.05	0.15

F010-F023 and F026-F028 dioxin Containing Waste		Concentration
Legend #	Constituent Name	
27	HxCCD-kAll Hexachlorodibenzo-p-dioxins	1 ppb
28	HxCDF-All Hexachlorodibenzofurans	1 ppb
29	PeCdd-All Pentachlorodibenzo-p-dioxins	1 ppb
30	PeCDF-All Pentachlorodibenzofurans	1 ppb
31	TCDD-All Tetrachlorodibenzo-p-dioxins	1 ppb
32	TCDF-All Tetrachlorodibenzofurans	1 ppb
33	2,4,5-Trichlorophenol	0.05 ppm
34	2,4,6-Trichlorophenol	0.05 ppm
35	2,3,4,6-Tetrachlorophenol	0.10 ppm
36	Pentachlorophenol	0.01 ppm

CALIFORNIA LIST WASTES

37	Nickel	134 mg/l
38	Thallium	130 mg/l
39	Cyanide (Liquid)	1000 mg/l

STATE OF ILLINOIS

ENVIRONMENTAL PROTECTION AGENCY DIVISION OF LAND POLLUTION CONTROL

P.O. BOX 19276 SPRINGFIELD ILLINOIS 62794-9276 (217) 782-6761

State Form LPC 62 8/81 IL532-0610

24 JAN 1991

FOR SHIPMENT OF HAZARDOUS INFECTIOUS AND SPECIAL WASTE

NOTE: FORM DESIGNED TO PRINT 8 LINES PER INCH

EPA Form 8700-22 (Rev. 6-89) Form Approved OMB No 2050-0039 Expires 9-30-91

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No: IL5210021833
Manifest Document No: ~~[illegible]~~

2. Page 1 of 1

Information in the shaded areas is not required by Federal law, but is required by Illinois law

3. Generator's Name and Mailing Address
Rock Island Arsenal
Bldg.154,Arsenal Island, Rock Island,IL 61299

Location If Different: 71002 WK

4. Generator's Phone (309) 782-1619

A. Illinois Manifest Document Number: IL4193172 MANIFEST FEE PAID

B. Illinois Generator's ID: 1 6 1 8 1 3 0 0 0 1

5. Transporter 1 Company Name: GSX SERVICES INC
6. US EPA ID Number: MAD980554653

C. Illinois Transporter's ID: 1 8 8 7

D. (303) ~~798-2993~~ Transporter's Phone

7. Transporter 2 Company Name
8. US EPA ID Number

E. Illinois Transporter's ID

F. ( ) Transporter's Phone

9. Designated Facility Name and Site Address
Special Waste Inc.
1713 Legion Road
Athens TN, 37303
10. US EPA ID Number: TND034547141

G. Illinois Facility's ID: 9 4 7 1 0 7 0 0 9

H. Facility's Phone: (615) 745-9222

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. "RQ" ~~Waste~~ Corrosive ~~Liquid~~ SOLID, N.O.S. WGM Corrosive ~~Liquid~~ MATERIAL, ~~UN1760(D002)~~ UN1759 WGM (Nickel Chloride Solution) WC	001	DM	00055	1	EPA HW Number XX ~~D002~~ 2 Authorization Number
b. "RQ" ~~Waste~~ Corrosive ~~Liquid,N.O.S.~~ SOLID, N.O.S. WGM Corrosive ~~Liquid~~ MATERIAL, ~~UN1760(D002)~~ UN1759 WGM (Ammonium Bifluoride Solution) WC	001	DM	00055	1	EPA HW Number XX ~~D002~~ 2 Authorization Number
c. ~~Waste Combustible Liquid,N.O.S.~~ DID NOT TAKE ~~Combustible Liquid,NA1993(F001)~~ WC 1-8-91 (~~Oil w/1,1,1-Trichloroethane~~)					EPA HW Number XX ~~F001~~ 1 Authorization Number
d. "RQ" Waste Hydrofluoric Acid,Solution Corrosive ~~Liquid~~ MATERIAL,UN1790(D002,D007,D008) WC	009	DM	00495	1	EPA HW Number XX D002 2 Authorization Number

J. Additional Descriptions for Materials Listed Above
A)833459 55 G= 374#
B)833460 55 G = 495#
~~C)833281~~
D)833461 ADD HW#D007,D008 Truck#C14 PO#C11

K. Handling Codes for Wastes Listed Above in Item #14
1 = Gallons 2 = Cubic Yards

15. Special Handling Instructions and Additional Information
A)Guide#60 ~~C)Guide#27~~
B)Guide#60 D)Guide#60
Send all correspondence and billing to: EMER. PHONE# 1-309-786-6534
GSX,Inc.,PO Box 140,Saukville, WI 53080 DLA-200-89-D-0034 PO#153,160.

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name	Signature	Date (Month Day Year)
William LaBreque DAVID FOSS	William LaBreque / David Foss	01 08 91

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date (Month Day Year)
Charlie MARTIN	Charlie Martin	01 08 91

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date (Month Day Year)

19. Discrepancy Indication Space LINES A AND B- SHIPPING DESCRIPTIONS CHANGED PER GENERATOR (BECKY LEAF) VIA PHONE WITH DAN DELAURA (LANDLAW) 1/16/91 WGM

20. Facility Owner or Operator. Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name	Signature	Date (Month Day Year)
William G McHan	William G McHan	01 16 91

This Agency is authorized to require pursuant to Illinois Revised Statutes Chapter 111½ Section 21 that this information be submitted to the Agency. Failure to provide the information may result in a civil penalty against the owner or operator of not to exceed $25,000 per day of violation. Falsification of this information may result in a fine up to $50,000 per day of violation and imprisonment up to 5 years. This form has been approved by the Forms Management Center.

COPY 1 TSD MAIL TO GENERATOR

In case of a spill call the Illinois Office of Emergency Response at 217/782-3637 and the National Response Center

P.O BOX 19276 SPRINGFIELD, ILLINOIS 62794-9276 (217) 782-6761

State Form LPC 62 8/81 IL532-0610

FOR SHIPMENT OF HAZARDOUS, INFECTIOUS AND SPECIAL WASTE

NOTE: FORM DESIGNED TO PRINT 8 LINES PER INCH. EPA Form 8700-22 (Rev. 6-80) Form Approved OMB No 2050-0039 Expires 9-30-91

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: IL5210021833 — Manifest Document No: ~~15302~~ 91002 WK

2. Page 1 of 1

Information in the shaded areas is not required by Federal law, but is required by Illinois law

3. Generator's Name and Mailing Address — Location If Different:

Rock Island Arsenal
Bldg.154,Arsenal Island, Rock Island,IL

4. Generator's Phone (309 782-1619 61299

5. Transporter 1 Company Name: GSX SERVICES INC.

6. US EPA ID Number: MAD980554653

7. Transporter 2 Company Name:

8. US EPA ID Number:

9. Designated Facility Name and Site Address:

Special Waste Inc.
1713 Legion Road
Athens TN, 37303

10. US EPA ID Number: TND034547141

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol
a. "RQ" Waste Corrosive ~~Liquid~~ Solid,N.O.S. Corrosive ~~Liquid~~ MATERIAL,UN1760(D002) (Nickel Chloride Solution) WK — attached letter	001	DM	00055	1
b. "RQ" Waste Corrosive ~~Liquid~~ Solid,N.O.S. Corrosive ~~Liquid~~ MATERIAL,UN1760(D002) (Ammonium Bifluoride Solution) — attached letter	001	DM	00055	1
c. ~~Waste Combustible Liquid,N.O.S. Combustible Liquid,NA1993(F001) (Oil w/1,1,1-Trichloroethane)~~ DID NOT TAKE WK 1-8-91				
d. "RQ" Waste Hydrofluoric Acid,Solution Corrosive ~~Liquid~~ MATERIAL,UN1790(D002,D007,D008) WK	009	DM	00495	1

15. Special Handling Instructions and Additional Information

A)Guide#60 ~~C)Guide#27~~
B)Guide#60 D)Guide#60

Send all correspondence and billing to: EMER. PHONE# 1-309-788-6534
GSX,Inc.,PO Box 140,Saukville, WI 53080 DLA-200-89-D-0034 DO#153,160,

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

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Printed/Typed Name: William Lafreaz / DAVID FOSS — Signature: William Lafreaz / David Foss — Date: Month 01 Day 08 Year 91

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: Charlie MARTIN — Signature: Charlie Martin — Date: Month 01 Day 08 Year 91

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name: — Signature: — Date: Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in item 19.

Printed/Typed Name: — Signature: — Date: Month Day Year

GENERATOR — TRANSPORTER — FACILITY

This Agency is authorized to require, pursuant to Illinois Revised Statutes, Chapter 111½ Section 21 that this information be submitted to the Agency. Failure to provide this information may result in a civil penalty against the owner or operator of not to exceed $25,000 per day of violation. Falsification of this information may result in a fine up to $50,000 per day of violation and imprisonment up to 5 years. This form has been approved by the Forms Management Center.

COPY 1. TSD MAIL TO GENERATOR

P O BOX 19276 SPRINGFIELD ILLINOIS 62794-9276 (217) 782-6761

State Form LPC 62 8 81 IL532-0610

FOR SHIPMENT OF HAZARDOUS INFECTIOUS AND SPECIAL WASTE

NOTE: FORM DESIGNED TO PRINT 8 LINES PER INCH. **EPA Form 8700-22 (Rev. 6-89)** Form Approved OMB No 2050-0039 Expires 9-30-91

UNIFORM HAZARDOUS WASTE MANIFEST

1 Generator's US EPA ID No: IL5210021833 | Manifest Document No: ~~15302~~ 91002 WK | 2. Page 1 of 1 | Information in the shaded areas is not required by Federal law, but is required by Illinois law

3 Generator's Name and Mailing Address | Location If Different

Rock Island Arsenal
Bldg.154,Arsenal Island, Rock Island,IL

4. Generator's Phone (309 782-1619 61299

5. Transporter 1 Company Name: GSX SERVICES INC. | 6. US EPA ID Number: MAD980554653

7. Transporter 2 Company Name | 8. US EPA ID Number

9. Designated Facility Name and Site Address | 10. US EPA ID Number

Special Waste Inc.
1713 Le on Road
Athens , 37303 | TND034547141

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol
a. "RQ" Waste Corrosive Liquid,N.O.S. Corrosive ~~Liquid~~ MATERIAL,UN1760(D002) (Nickel Chloride Solution) WK	001	DM	00055	1
b. "RQ" Waste Corrosive Liquid,N.O.S. Corrosive ~~Liquid~~ MATERIAL,UN1760(D002) (Ammonium Bifluoride Solution) WK	001	DM	00055	1
c. ~~Waste Combustible Liquid,N.O.S. Combustible Liquid,NA1993(F001) (Oil w/1,1,1-Trichloroethane)~~ DID NOT TAKE WK 1-8-91				
d. "RQ" Waste Hydrofluoric Acid,Solution Corrosive ~~Liquid~~ MATERIAL,UN1790(D002,D007,D008) WK	009	DM	00495	1

15. Special Handling Instructions and Additional Information

A)Guide#60 ~~C)Guide#27~~
B)Guide#60 D)Guide#60

Send all correspondence and billing to: EMER. PHONE# 1-309-788-6534
GSX,Inc.,PO Box 140,Saukville, WI 53080 DLA-200-89-D-0034 DO#153 160

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

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Printed/Typed Name: Wilbert Lafreaz / DAVID FOSS | Signature: [signature] / David Foss | Date: Month 01 Day 08 Year 91

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: Charlie MARTIN | Signature: Charlie Martin | Date: Month 01 Day 08 Year 91

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name | Signature | Date: Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in item 19.

Printed/Typed Name | Signature | Date: Month Day Year

This Agency is authorized to require, pursuant to Illinois Revised Statutes, Chapter 111½ Section 21, that this information be submitted to the Agency. Refuse to provide this information may result in a civil penalty against the owner or operator of not to exceed $25,000 per day of violation. Falsification of this information may result in a fine up to $50,000 per day of violation and imprisonment up to 5 years. This form has been approved by the Federal Transportation Center

COPY 1 TSO MAIL TO GENERATOR

O BOX 19276 SPRINGFIELD ILLINOIS 62794 9276 (217) 782-6761

State Form LPC 62 8 81 IL532-0610

FOR SHIPMENT OF HAZARDOUS INFECTIOUS AND SPECIAL WASTE

...O PRINT 8 LINES PER INCH. **EPA Form 8700-22 (Rev. 6-89)** Form Approved OMB No 2050-0039 Expires 9-30-91

...HAZARDOUS ...STE MANIFEST

1 Generator's US EPA ID No: IL5210021833

Manifest Document No: ~~15302~~ 91002 WK

2 Page 1 of 1

Information in the shaded areas is not required by Federal law but is required by Illinois law

...ator's Name and Mailing Address / Location If Different

Rock Island Arsenal
Bldg.154,Arsenal Island, Rock Island,IL

4 Generator's Phone (309 782-1619 61299

5 Transporter 1 Company Name: GSX SERVICES INC.

6. US EPA ID Number: MAD980554653

7. Transporter 2 Company Name

8 US EPA ID Number

9. Designated Facility Name and Site Address

Special aste Inc.
1713 Le on Road
Athens , 37303

10 US EPA ID Number: TND034547141

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol
a. "RQ" Waste Corrosive ~~Liquid~~ SOLID,N.O.S. Corrosive ~~Liquid~~ MATERIAL,UN1760(D002) (Nickel Chloride Solution) WK Not D002	001	DM	00055	1
b "RQ" Waste Corrosive ~~Liquid~~ Solid,N.O.S. Corrosive ~~Liquid~~ MATERIAL,UN1760(D002) (Ammonium Bifluoride Solution) WK Not D002	001	DM	00055	1
c ~~Waste Combustible Liquid,N.O.S. Combustible Liquid,NA1993(F001) (Oil w/1,1,1-Trichloroethane)~~ DID NOT TAKE WK 7-8-91				
d "RQ" Waste Hydrofluoric Acid,Solution Corrosive ~~Liquid~~ MATERIAL,UN1790(D002,D007,D008) WK	009	DM	00495	1

[redacted]

15. Special Handling Instructions and Additional Information

A)Guide#60 ~~C)Guide#27~~
B)Guide#60 D)Guide#60

Send all correspondence and billing to: EMER. PHONE# 1-309-788-6534
GSX,Inc.,PO Box 140,Saukville, WI 53080 DLA-200-89-D-0034 DO#153,160,

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford

Printed/Typed Name: Wilbert Lafrenz / DAVID FOSS — Signature: [signature] / David Foss — Date: Month 01 Day 08 Year 91

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: Charlie MARTIN — Signature: Charlie Martin — Date: Month 01 Day 08 Year 91

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name — Signature — Date: Month Day Year

19. Discrepancy Indication Space

Line a Solid 379 lb
Line b. Solid 125 lb

20 Facility Owner or Operator. Certification of receipt of hazardous materials covered by this manifest except as noted in item 19

Printed/Typed Name — Signature — Date: Month Day Year

GENERATOR / TRANSPORTER / FACILITY

This Agency is authorized to require pursuant to Illinois Revised Statutes Chapter 111½ Section 21 that this information be submitted to the Agency. Failure to provide this information may result in a civil penalty against the owner or operator of not to exceed $25,000 per day of violation. Falsification of this information may result in a fine up to $50,000 per day of violation and imprisonment up to 5 years. This form has been approved by the Forms Management Center.

COPY 1. TSD MAIL TO GENERATOR

Generator Name/Location: Rock Island Arsenal, Rock Island, IL

EPA ID Number: IL5210021833 Manifest Number: IL4193172-91002

Drum Number, Waste Profile or ARF Number	Category No.	State EPA Waste Number(s)	Corresponding Treatment Standard/ Applicable Variance/Other Information
(A) 833459	2	D002	#37 NWW Acid (PH-2) 268.42, Table 2 DEACT
(B) 833460	2	D002	NWW Alkal. (PH.12.5) 268.42, Table 2 DEAC
(C) ~~833381~~	~~2~~	~~F001~~	~~#22~~ DID NOT TAKE WCF
(D) 833461	2	D002	NWW Acid (PH.2) 268.42, Table 2, DEACT
		D007	REFER TO S268.41 Table CCWE
		D008	REFER TO S268.41 Table CCWE

SIGNATURE: David Foss TITLE: Physical Scientist

PRINT NAME: DAVID FOSS DATE: 8 Jan 91

ONLY ORIGINAL SIGNATURES WILL BE ACCEPTED! September 23, 19

* For Treatment Standards Expressed as Concentration, Please Enter the Legend Number from the Legend Below for the Constituents contained in the Waste.

LEGEND FOR TREATMENT STANDARDS EXPRESSED AS CONCENTRATION

TABLE CCWE-CONSTITUENTS IN WASTE EXTRACT

F001-F005 spent solvent		Concentration (in mg/l) Waste Water Containing Spent Solvents	All other Spent Solvent Wastes
Legend #	Constituent Name		
1	Acetone	0.05	0.59
2	n-butyl alcohol	5.0	5.0
3	Carbon disulfide	1.05	4.81
4	Carbon Tetrachloride	.05	.96
5	Chlorobenzene	.15	.05
6	Cresols (and cresylic acid)	2.82	.75
7	Cyclohexanone	.125	.75
8	1,2-dichlorobenzene	.65	.125
9	Ethyl acetate	.05	.75
10	Ethyl benzene	.05	.053
11	Ethyl ether	.05	.75
12	Isobutanol	5.0	5.0
13	Methanol	.25	.75
14	Methylene chloride	.20	.96
15	Methylene chloride (from the pharmaceutical industry)	0.44	.96
16	Methyl ethyl ketone	0.05	0.75
17	Methyl isobutyl ketone	0.05	0.33
18	Nitrobenzene	0.66	0.125
19	Pyridine	1.12	0.33
20	Tetrachlorethylene	0.079	0.05
21	Toluene	1.12	0.33
22	1,1,1-Trichloroethane	1.05	0.41
23	1,2,2-trichloro-1,2,2-trifluoroethane	1.05	0.96
24	Trichloroethylene	0.062	0.071
25	Trichlorofluoromethane	0.05	0.96
26	Xylene	0.05	0.15

F010-F023 and F026-F028 dioxin Containing Waste		Concentration
Legend #	Constituent Name	
27	HxCCD-kAll Hexachlorodibenzo-p-dioxins	1 ppb
28	HxCDF-All Hexachlorodibenzofurans	1 ppb
29	PeCdd-All Pentachlorodibenzo-p-dioxins	1 ppb
30	PeCDF-All Pentachlorodibenzofurans	1 ppb
31	TCDD-All Tetrachlorodibenzo-p-dioxins	1 ppb
32	TCDF-All Tetrachlorodibenzofurans	1 ppb
33	2,4,5-Trichlorophenol	0.05 ppm
34	2,4,6-Trichlorophenol	0.05 ppm
35	2,3,4,6-Tetrachlorophenol	0.10 ppm
36	Pentachlorophenol	0.01 ppm

CALIFORNIA LIST WASTES

37	Nickel	134 mg/l
38	Thallium	130 mg/l
39	Cyanide (Liquid)	1000 mg/l

SUPPLEMENTAL DOCUMENT TO BLOCK J

MANIFEST # IL4193172-91002

MANF. LINE ITEM	DO #	CLIN	HIN	ITEM DESCRIPTION	# OF CONT.	VOL.
A	153	0065	1305	Nickel Chloride Solution		55GL
	153	0066	1201	55 gal Container	1	
B.	153	0067	1656	Ammonium Bifluoride Solution		55GL
	153	0068	1201	55 gal Container	1	
~~C~~	~~153~~	~~0091~~	~~4931~~	~~Oil w/ 1,1,1-Trichloro~~ DIDNOT TAKE		~~55GL~~
	~~153~~	~~0092~~	~~1201~~	~~55 gal Container~~	~~1~~	
D.	153	0097-0107	1305	Hydrofluoric Acid		330GL
	153	0098-0108	1201	55 gal Containers	6	
	160	0136, 0134, 0138	1305	Hydrofluoric Acid		165GL
	160	0135, 0137 0139	1201	55 gal Containers	3.	

CONTRACT # DLA200-89-D-0034/153,160

GSX GOVERNMENT SERVICES, INC. C.O.R.

SIGNATURE [signature] SIGNATURE [signature]

DATE 1/8/90 DATE 8 January 91

REV. (9/5/90)

Generator Name/Location: Rock Island Arsenal, Rock Island, IL

EPA ID Number: IL4 2100218 33 Manifest Number: IL4 9817 72 - 91002

Drum Number, Waste Profile or ARF Number	Category No.	State EPA Waste Number(s)	Corresponding Treatment Standard/ Applicable Variance/Other Information
(A) 833459	2	D002	#37 NWW Acid (PH-2) 268.42, TABLE 2 DERT
(C) 833460	2	D002	NWW PIKAL (PH.125) 268.42, TABLE 2 DERT
(C) ~~833351~~	~~2~~	~~F001~~	~~#22~~ DID NOT TAKE WCF
(D) 833461	2	D002	NWW Acid (PH.2) 268.42, TABLE 2, DERT
		D007	REFER TO S268.41 TABLE CCWE
		D008	REFER TO S268.41 TABLE CCWE

SIGNATURE: David Foss TITLE: Physical Scientist

PRINT NAME: DAVID A. FOSS DATE: 8 Jan 91

ONLY ORIGINAL SIGNATURES WILL BE ACCEPTED! September 23, 1

* For Treatment Standards Expressed as Concentration, Please Enter the Legend Number from the Legend Below for the Constituents contained i the Waste.

LEGEND FOR TREATMENT STANDARDS EXPRESSED AS CONCENTRATION

TABLE CCWE-CONSTITUENTS IN WASTE EXTRACT

	F001-F005 spent solvent	Concentration (in mg/l) Waste Water Containing Spent Solvents	All other Spent Solvent Wastes
Legend #	Constituent Name		
1	Acetone	0.05	0.59
2	n-butyl alcohol	5.0	5.0
3	Carbon disulfide	1.05	4.81
4	Carbon Tetrachloride	.05	.96
5	Chlorobenzene	.15	.05
6	Cresols (and cresylic acid)	2.82	.75
7	Cyclohexanone	.125	.75
8	1,2-dichlorobenzene	.65	.125
9	Ethyl acetate	.05	.75
10	Ethyl benezene	.05	.053
11	Ethyl ether	.05	.75
12	Isobutanol	5.0	5.0
13	Methanol	.25	.75
14	Methylene chloride	.20	.96
15	Methylene chloride (from the pharmaceutical industry)	0.44	.96
16	Methyl ethyl ketone	0.05	0.75
17	Methyl isobutyl ketone	0.05	0.33
18	Nitrobenzene	0.66	0.125
19	Pyridine	1.12	0.33
20	Tetrachloroethylene	0.079	0.05
21	Toluene	1.12	0.33
22	1,1,1-Trichloroethane	1.05	0.41
23	1,2,2-trichloro-1,2,2-trifluoroethane	1.05	0.96
24	Trichloroethylene	0.062	0.071
25	Trichlorofluoromethane	0.05	0.96
		0.05	0.15

Legend #	Constituent Name	F010-F021 and F026-F028 dioxin Containing Waste Concentrat
27	HxCDD-All Hexachlorodibenzo-p-dioxins	1 pp
28	HxCDF-All Hexachlorodibenzofurans	1 pp
29	PeCdd-All Pentachlorodibenzo-p-dioxins	1 pp
30	PeCDF-All Pentachlorodibenzofurans	1 pp
31	TCDD-All Tetrachlorodibenzo-p-dioxins	1 pp
32	TCDF-All Tetrachlorodibenzofurans	1 pp
33	2,4,5-Trichlorophenol	0.05 pp
34	2,4,6-Trichlorophenol	0.05 pp
35	2,3,4,6-Tetrachlorophenol	0.10 pp
36	Pentachlorophenol	0.01 pp

CALIFORNIA LIST WASTES

37	Nickel	134 m
38	Thallium	130 m
39	Cyanide (Liquid)	1000 m

SUPPLEMENTAL DOCUMENT TO BLOCK J

MANIFEST # JL4193172-91002

MANF. LINE ITEM	DO #	CLIN	HIN	ITEM DESCRIPTION	# OF CONT.	VOL.
A	153	0065	1305	Nickel Chloride Solution		55GL
	153	0066	1201	55 gal Container	1	
B.	153	0067	1656	Ammonium Bifluoride Solution		55GL
	153	0068	1201	55 gal Container	1	
~~C~~	~~153~~	~~0091~~	~~4931~~	~~Oil w/ 1,1,1-Trichloro~~ DID NOT TAKE		~~55GL~~
	~~153~~	~~0092~~	~~1201~~	~~55 gal Container~~	~~1~~	
D.	153	0097-0107	1305	Hydrofluoric Acid		330GL
	153	0098-0108	1201	55 gal Containers	6	
	160	0136, 0134, 0133	1305	Hydrofluoric Acid		165GL
	160	0135, 0137 0139	1201	55 gal Containers	3	

CONTRACT # DLA200-89-D-0034/153,160

GSX GOVERNMENT SERVICES, INC. C.O.R.

SIGNATURE [signature] SIGNATURE [signature]

DATE 1/8/90 DATE 8 January 91

REV (8/5/90)

Bldg 64 - Waste Profiles

COPY 6004

WASTE CHARACTERIZATION DATA

General Directions: In order for us to determine whether we can lawfully and safely transport, treat, and dispose of your waste material, we must obtain certain information about the chemical and physical properties of the waste and its chemical composition. Please be complete in your answers; if your response is "none" or "not available", so indicate. Answers must be printed in ink or typewritten and the completed form must be signed. Please make a copy of this form for your records.

(1.) Generator Name: Rock Island Arsenal (RIA) EPA Generator No.: IL5210021833

(2.) Generating Facility Complete Address:
Commander, Rock Island Arsenal, ATTN: SMCRI-SEM (Dr. Shore) Rock Island, IL 61299-500

(3.) Authorized Company Representative: Dr. William Shore Title: Environmental Coordinator

(4.) Phone Number: (309) 782-7855

(5.) Emergency Contact RIA Fire Department Title: Shift Chief Phone: (309) 782-5148

(6.) General Description of The Waste: NICKEL CHLORIDE
CC.9064

(7.) Process Generating Waste: Plating Shop

(8.) Anticipated volume 1 [ ] Gallons [ ] Tons [ ] Cubic Yards [X] Drums, or [ ] Other
Per: [ ] Day [ ] Week [ ] Month [X] Year, or [ ] Other 9064117

(9.) Waste Properties:

(a.) Vapor pressure (in mm of Hg @ 25°C)

(b.) Flash Point [ ] °F [ ] °C [ ] Closed Cup [ ] Open Cup

(c.) Phases/layers: [X] Single [ ] Bilayered [ ] Multilayered

(d.) Physical State @ 20 °C: [X] Solid [ ] Liquid [ ] Semi-Solid [ ] Powder [ ] Other

(e.) pH <2 (f.) Solubility (g/100g H_2O) @ 20°C:

(g.) Density: 1.57 [ ] lb./ft.^{3} [ ] lb./yd.^{3} [ ] lb./gal. [X] g/cc

(h.) Odor: [ ] Strong [ ] Mild [X] None

(i.) Reactivity: Water [ ] Yes [X] No Autopolymerizable [ ] Yes [X] No Shock Sensitive [ ] Yes [X] No
Pyrophoric [ ] Yes [X] No Thermally Sensitive [ ] Yes [X] No Explosive [ ] Yes [X] No

(10.) Complete waste composition (with ranges—indicate % or ppm.) Attach Additional Pages if Necessary

ORGANIC	INORGANIC
	$NiCl_2 \cdot 6H_2O$

(11.) Sample Included [ ] Yes [X] No

(12.) Is this waste a "Hazardous Waste" as defined by regulations of the U.S. Environmental Protection Agency pursuant to 40 CFR § 261 of the Resource Conservation and Recovery Act? yes

Non-EPA Regulated Solid

(13.) Manifest Information

Proper USDOT Shipping Name	USDOT Hazard Class	UN or NA No.	USEPA Haz. Code	USEPA Haz. Waste No. (Type)
Nickel Chloride	OKM-E	NA 9173 9		

(14.) This waste contains: Biological Materials [ ] Yes [X] No Pathogens [ ] Yes [X] No Etiological Agents [ ] Yes [X] No
Radioactive Materials [ ] Yes [X] No PCB's [ ] Yes [X] No Dioxin [ ] Yes [X] No

If yes, specify type (if applicable) and concentration:

(15.) Have you obtained toxicity studies of this waste material? NO If so, please attach a copy of the results.

(16.) Required personal protective equipment & procedures: 2

I hereby certify that the above and attached description is complete and accurate to the best of my knowledge and ability to determine, that no deliberate or willful omissions of composition or properties exists, and that all known or suspected hazards have been disclosed.

Generator's Authorized Signatory
William L. Shore Title Environmental Coordinator Date 11/2/91

3104

WASTE CHARACTERIZATION DATA

General Directions: In order for us to determine whether we can lawfully and safely transport, treat, and dispose of your waste material, we must obtain certain information about the chemical and physical properties of the waste and its chemical composition. Please be complete in your answers; if your response is "none" or "not available", so indicate. Answers must be printed in ink or typewritten and the completed form must be signed. Please make a copy of this form for your records.

(1.) Generator Name: Rock Island Arsenal (RIA) EPA Generator No.: IL5210021833

(2.) Generating Facility Complete Address:
Commander, Rock Island Arsenal, ATTN: SMCRI-SEM (Dr. Shore) Rock Island, IL 61299-500

(3.) Authorized Company Representative: Dr. William Shore Title: Environmental Coordinator

(4.) Phone Number: (309) 782-7855

(5.) Emergency Contact RIA Fire Department Title: Shift Chief Phone: (309) 782-5148

(6.) General Description of The Waste: Misc Paints & Lacquers in individual containers
CC. 9064

(7.) Process Generating Waste: Plating shop

(8.) Anticipated volume 3 [ ] Gallons [ ] Tons [ ] Cubic Yards [X] Drums, or [ ] Other
Per: [ ] Day [ ] Week [ ] Month [X] Year, or [ ] Other 9064119, 120, 337

(9.) Waste Properties:

(a.) Vapor pressure (in mm of Hg @ 25°C)

(b.) Flash Point 61-100 [X] °F [ ] °C [ ] Closed Cup [ ] Open Cup

(c.) Phases/layers: [ ] Single [ ] Bilayered [X] Multilayered

(d.) Physical State @ 20 °C: [X] Solid [X] Liquid [ ] Semi-Solid [ ] Powder [ ] Other

(e.) pH 6-8 (f.) Solubility (g/100g H_2O) @ 20°C:

(g.) Density: 1.4-1.7 [ ] lb./ft.^{3} [ ] lb./yd.^{3} [ ] lb./gal. [X] g/cc

(h.) Odor: [ ] Strong [X] Mild [ ] None

(i.) Reactivity: Water [ ] Yes [X] No Autopolymerizable [ ] Yes [X] No Shock Sensitive [ ] Yes [X] No
Pyrophoric [ ] Yes [X] No Thermally Sensitive [ ] Yes [X] No Explosive [ ] Yes [X] No

(10.) Complete waste composition (with ranges—indicate % or ppm.) Attach Additional Pages if Necessary

ORGANIC	INORGANIC
Lacquer,	
pigment	

(11.) Sample Included [ ] Yes [X] No

(12.) Is this waste a "Hazardous Waste" as defined by regulations of the U.S. Environmental Protection Agency pursuant to 40 CFR § 261 of the Resource Conservation and Recovery Act? yes

(13.) Manifest Information

Proper USDOT Shipping Name	USDOT Hazard Class	UN or NA No.	USEPA Haz. Code	USEPA Haz. Waste No. (Type)
Hazardous waste Paint Related, NOS	Flammable	UN1263	I	D001

(14.) This waste contains: Biological Materials [ ] Yes [X] No Pathogens [ ] Yes [X] No Etiological Agents [ ] Yes [X] No
Radioactive Materials [ ] Yes [X] No PCB's [ ] Yes [X] No Dioxin [ ] Yes [X] No

If yes, specify type (if applicable) and concentration:

(15.) Have you obtained toxicity studies of this waste material? NO If so, please attach a copy of the results.

(16.) Required personal protective equipment & procedures:

I hereby certify that the above and attached description is complete and accurate to the best of my knowledge and ability to determine, that no deliberate or willful omissions of composition or properties exists, and that all known or suspected hazards have been disclosed.

Generator's Authorized Signatory

William L Shore Title Environmental Coordinator Date 11/2/96

T

6004

WASTE PROFILE SHEETS

General Directions: In order for us to determine whether we can lawfully and safely transport, treat, and dispose of your waste material, we must obtain certain information about the chemical and physical properties of the waste and its chemical composition. Please be complete in your answers; if your response is "none" or "not available", so indicate. Answers must be printed in ink or typewritten and the completed form must be signed. Please make a copy of this form for your records.

(1.) Generator Name: Rock Island Arsenal (RIA) EPA Generator No.: IL5210021833

(2.) Generating Facility Complete Address:
Commander, Rock Island Arsenal, ATTN: SMCRI-SEM (Dr. Shore) Rock Island, IL 61299-5000

(3.) Authorized Company Representative: Dr. William Shore Title: Environmental Coordinator

(4.) Phone Number: (309) 782- 7855

(5.) Emergency Contact RIA Fire Department Title: Shift Chief Phone: (309) 782-5148

(6.) General Description of The Waste: STOP OFF WAX - unused surplus CC 9064

(7.) Process Generating Waste: Plating Shop

(8.) Anticipated volume 1 [ ] Gallons [ ] Tons [ ] Cubic Yards [X] Drums, or [ ] Other
Per: [ ] Day [ ] Week [ ] Month [X] Year, or [ ] Other 9064 325 - 335

(9.) Waste Properties:

(a.) Vapor pressure (in mm of Hg @ 25 °C)

(b.) Flash Point [ ] °F [ ] °C [ ] Closed Cup [ ] Open Cup

(c.) Phases/layers: [X] Single [ ] Bilayered [ ] Multilayered

(d.) Physical State @ 20 °C: [X] Solid [ ] Liquid [ ] Semi-Solid [ ] Powder [ ] Other

(e.) pH (f.) Solubility (g/100g H_2O) @ 20 °C:

(g.) Density: .9 [ ] lb./ft.^{3} [ ] lb./yd.^{3} [ ] lb./gal. [X] g/cc

(h.) Odor: [ ] Strong [X] Mild [ ] None

(i.) Reactivity: Water [ ] Yes [X] No Autopolymerizable [ ] Yes [X] No Shock Sensitive [ ] Yes [X] No
Pyrophoric [ ] Yes [X] No Thermally Sensitive [ ] Yes [X] No Explosive [ ] Yes [X] No

(10.) Complete waste composition (with ranges—indicate % or ppm.) Attach Additional Pages if Necessary

ORGANIC	INORGANIC
100% hydrocarbon	

(11.) Sample Included [ ] Yes [X] No

(12.) Is this waste a "Hazardous Waste" as defined by regulations of the U.S. Environmental Protection Agency pursuant to 40 CFR § 261 of the Resource Conservation and Recovery Act? NO

(13.) Manifest Information

Proper USDOT Shipping Name	USDOT Hazard Class	UN or NA No.	USEPA Haz. Code	USEPA Haz. Waste No. (Type)
NA	NA	- - N A - -	NA	- N A -

(14.) This waste contains: Biological Materials [ ] Yes [X] No Pathogens [ ] Yes [X] No Etiological Agents [ ] Yes [X] No
Radioactive Materials [ ] Yes [X] No PCB's [ ] Yes [X] No Dioxin [ ] Yes [X] No

If yes, specify type (if applicable) and concentration:

(15.) Have you obtained toxicity studies of this waste material? NO If so, please attach a copy of the results.

(16.) Required personal protective equipment & procedures: gloves, glasses

I hereby certify that the above and attached description is complete and accurate to the best of my knowledge and ability to determine, that no deliberate or willful omissions of composition or properties exists, and that all known or suspected hazards have been disclosed.

Generator's Authorized Signatory

William L Shore Title Environmental Coordinator Date 11/2/90

1304

WASTE PROFILE SHEETS

General Directions: In order for us to determine whether we can lawfully and safely transport, treat, and dispose of your waste material, we must obtain certain information about the chemical and physical properties of the waste and its chemical composition. Please be complete in your answers; if your response is "none" or "not available", so indicate. Answers must be printed in ink or typewritten and the completed form must be signed. Please make a copy of this form for your records.

(1.) Generator Name: Rock Island Arsenal (RIA) EPA Generator No.: IL5210021833

(2.) Generating Facility Complete Address:
Commander, Rock Island Arsenal, ATTN: SMCRI-SEM (Dr. Shore) Rock Island, IL 61299-5000

(3.) Authorized Company Representative: Dr. William Shore Title: Environmental Coordinator

(4.) Phone Number: (309) 782- 7855

(5.) Emergency Contact RIA Fire Department Title: Shift Chief Phone: (309) 782-5148

(6.) General Description of The Waste: RIA MIXTURE #5 - Black Oxide salts
CC.9064

(7.) Process Generating Waste: Plating shop

(8.) Anticipated volume 1 [ ] Gallons [ ] Tons [ ] Cubic Yards [X] Drums, or [ ] Other
Per: [ ] Day [ ] Week [ ] Month [X] Year, or [ ] Other #9069169

(9.) Waste Properties:

(a.) Vapor pressure (in mm of Hg @ 25 °C)

(b.) Flash Point [ ] °F [ ] °C [ ] Closed Cup [ ] Open Cup

(c.) Phases/layers: [X] Single [ ] Bilayered [ ] Multilayered

(d.) Physical State @ 20 °C: [X] Solid [ ] Liquid [ ] Semi-Solid [ ] Powder [ ] Other

(e.) pH 14 (f.) Solubility (g/100g H_2O) @ 20 °C:

(g.) Density: 2.14 [ ] lb./ft.^{3} [ ] lb./yd.^{3} [ ] lb./gal. [X] g/cc

(h.) Odor: [ ] Strong [ ] Mild [X] None

(i.) Reactivity: Water [ ] Yes [X] No Autopolymerizable [ ] Yes [X] No Shock Sensitive [ ] Yes [X] No
Pyrophoric [ ] Yes [X] No Thermally Sensitive [ ] Yes [X] No Explosive [ ] Yes [X] No

(10.) Complete waste composition (with ranges—indicate % or ppm.) Attach Additional Pages if Necessary

ORGANIC	INORGANIC
	Sodium Hydroxide - 67%
	Sodium Nitrate - 33%
	See MSDS #249

(11.) Sample Included [ ] Yes [X] No

(12.) Is this waste a "Hazardous Waste" as defined by regulations of the U.S. Environmental Protection Agency pursuant to 40 CFR § 261 of the Resource Conservation and Recovery Act? yes

(13.) Manifest Information

Proper USDOT Shipping Name	USDOT Hazard Class	UN or NA No.	USEPA Haz. Code	USEPA Haz. Waste No. (Type)
Hazardous waste solid, NOS	ORM-E	NA9189	C,I,T	D002

(14.) This waste contains: Biological Materials [ ] Yes [X] No Pathogens [ ] Yes [X] No Etiological Agents [ ] Yes [X] No
Radioactive Materials [ ] Yes [X] No PCB's [ ] Yes [X] No Dioxin [ ] Yes [X] No

If yes, specify type (if applicable) and concentration:

(15.) Have you obtained toxicity studies of this waste material? NO If so, please attach a copy of the results.

(16.) Required personal protective equipment & procedures: 1

I hereby certify that the above and attached description is complete and accurate to the best of my knowledge and ability to determine, that no deliberate or willful omissions of composition or properties exists, and that all known or suspected hazards have been disclosed.

Generator's Authorized Signatory
William L. Shore Title Environmental Coordinator Date 11/2/90

1655

WASTE CHARACTERIZATION DATA

General Directions: In order for us to determine whether we can lawfully and safely transport, treat, and dispose of your waste material, we must obtain certain information about the chemical and physical properties of the waste and its chemical composition. Please be complete in your answers; if your response is "none" or "not available", so indicate. Answers must be printed in ink or typewritten and the completed form must be signed. Please make a copy of this form for your records.

(1.) Generator Name: Rock Island Arsenal (RIA) EPA Generator No.: IL5210021833

(2.) Generating Facility Complete Address:
Commander, Rock Island Arsenal, ATTN: SMCRI-SEM (Dr. Shore) Rock Island, IL 61299-500

(3.) Authorized Company Representative: Dr. William Shore Title: Environmental Coordinator

(4.) Phone Number: (309) 782-7855

(5.) Emergency Contact RIA Fire Department Title: Shift Chief Phone: (309) 782-5148

(6.) General Description of The Waste: AMMONIUM BIFLUORIDE
C.C. 9064

(7.) Process Generating Waste: Plating shop

(8.) Anticipated volume 1 [ ] Gallons [ ] Tons [ ] Cubic Yards [X] Drums, or [ ] Other
Per: [ ] Day [ ] Week [ ] Month [X] Year, or [ ] Other 9064 11 X

(9.) Waste Properties:

(a.) Vapor pressure (in mm of Hg @ 25 °C)

(b.) Flash Point [ ] °F [ ] °C [ ] Closed Cup [ ] Open Cup

(c.) Phases/layers: [X] Single [ ] Bilayered [ ] Multilayered

(d.) Physical State @ 20 °C: [X] Solid [ ] Liquid [ ] Semi-Solid [ ] Powder [ ] Other

(e.) pH >12.5 (f.) Solubility (g/100g H_2O) @ 20 °C:

(g.) Density: 1.51 [ ] lb./ft.^{3} [ ] lb./yd.^{3} [ ] lb./gal. [X] g/cc

(h.) Odor: [ ] Strong [ ] Mild [X] None

(i.) Reactivity: Water [ ] Yes [X] No Autopolymerizable [ ] Yes [X] No Shock Sensitive [ ] Yes [X] No
Pyrophoric [ ] Yes [X] No Thermally Sensitive [ ] Yes [X] No Explosive [ ] Yes [X] No

(10.) Complete waste composition (with ranges—indicate % or ppm.) Attach Additional Pages if Necessary

ORGANIC INORGANIC

(11.) Sample Included [ ] Yes [X] No

(12.) Is this waste a "Hazardous Waste" as defined by regulations of the U.S. Environmental Protection Agency pursuant to 40 CFR § 261 of the Resource Conservation and Recovery Act? yes

(13.) Manifest Information

Proper USDOT Shipping Name	USDOT Hazard Class	UN or NA No.	USEPA Haz. Code	USEPA Haz. Waste No. (Type)
Ammonium hydrogen Fluoride	Corrosive	UN1727	C	D002

(14.) This waste contains: Biological Materials [ ] Yes [X] No Pathogens [ ] Yes [X] No Etiological Agents [ ] Yes [X] No
Radioactive Materials [ ] Yes [X] No PCB's [ ] Yes [X] No Dioxin [ ] Yes [X] No

If yes, specify type (if applicable) and concentration:

(15.) Have you obtained toxicity studies of this waste material? NO If so, please attach a copy of the results.

(16.) Required personal protective equipment & procedures: 2

I hereby certify that the above and attached description is complete and accurate to the best of my knowledge and ability to determine, that no deliberate or willful omissions of composition or properties exists, and that all known or suspected hazards have been disclosed.

Generator's Authorized Signatory
William S. Shore Title Environmental Coordinator Date 11/2/90

6162

WASTE PROFILE SHEETS

General Directions: In order for us to determine whether we can lawfully and safely transport, treat, and dispose of your waste material, we must obtain certain information about the chemical and physical properties of the waste and its chemical composition. Please be complete in your answers; if your response is "none" or "not available", so indicate. Answers must be printed in ink or typewritten and the completed form must be signed. Please make a copy of this form for your records.

(1.) Generator Name: Rock Island Arsenal (RIA) EPA Generator No.: IL5210021833

(2.) Generating Facility Complete Address:
Commander, Rock Island Arsenal, ATTN: SMCRI-SEM (Dr. Shore) Rock Island, IL 61299-5000

(3.) Authorized Company Representative: Dr. William Shore Title: Environmental Coordinator

(4.) Phone Number: (309) 782- 7855

(5.) Emergency Contact RIA Fire Department Title: Shift Chief Phone: (309) 782-5148

(6.) General Description of The Waste: Misc. GREASES
CC. 9064

(7.) Process Generating Waste: Plating shop

(8.) Anticipated volume 5 [X] Gallons [ ] Tons [ ] Cubic Yards [ ] Drums, or [ ] Other
Per: [ ] Day [ ] Week [ ] Month [X] Year, or [ ] Other #9064126

(9.) Waste Properties:

(a.) Vapor pressure (in mm of Hg @ 25 °C)

(b.) Flash Point [ ] °F [ ] °C [ ] Closed Cup [ ] Open Cup

(c.) Phases/layers: [X] Single [ ] Bilayered [ ] Multilayered

(d.) Physical State @ 20 °C: [ ] Solid [ ] Liquid [X] Semi-Solid [ ] Powder [ ] Other

(e.) pH (f.) Solubility (g/100g H_2O) @ 20 °C:

(g.) Density: 5.8 [ ] lb./ft.^{3} [ ] lb./yd.^{3} [X] lb./gal. [ ] g/cc

(h.) Odor: [ ] Strong [X] Mild [ ] None

(i.) Reactivity: Water [ ] Yes [X] No Autopolymerizable [ ] Yes [X] No Shock Sensitive [ ] Yes [X] No
Pyrophoric [ ] Yes [X] No Thermally Sensitive [ ] Yes [X] No Explosive [ ] Yes [X] No

(10.) Complete waste composition (with ranges—indicate % or ppm.) Attach Additional Pages if Necessary

ORGANIC	INORGANIC
100% grease	

(11.) Sample Included [ ] Yes [X] No

(12.) Is this waste a "Hazardous Waste" as defined by regulations of the U.S. Environmental Protection Agency pursuant to 40 CFR § 261 of the Resource Conservation and Recovery Act? NO

(13.) Manifest Information

Proper USDOT Shipping Name	USDOT Hazard Class	UN or NA No.	USEPA Haz. Code	USEPA Haz. Waste No. (Type)
NA	NA	- - N A - -	NA	- N A -

(14.) This waste contains: Biological Materials [ ] Yes [X] No Pathogens [ ] Yes [X] No Etiological Agents [ ] Yes [X] No
Radioactive Materials [ ] Yes [X] No PCB's [ ] Yes [X] No Dioxin [ ] Yes [X] No

If yes, specify type (if applicable) and concentration:

(15.) Have you obtained toxicity studies of this waste material? NO If so, please attach a copy of the results.

(16.) Required personal protective equipment & procedures: gloves, glasses

I hereby certify that the above and attached description is complete and accurate to the best of my knowledge and ability to determine, that no deliberate or willful omissions of composition or properties exists, and that all known or suspected hazards have been disclosed.

Generator's Authorized Signatory

Title Environmental Coordinator Date

HIN- 6014 #1/16

1659

WASTE CHARACTERIZATION DATA

General Directions: In order for us to determine whether we can lawfully and safely transport, treat, and dispose of your waste material, we must obtain certain information about the chemical and physical properties of the waste and its chemical composition. Please be complete in your answers; if your response is "none" or "not available", so indicate. Answers must be printed in ink or typewritten and the completed form must be signed. Please make a copy of this form for your records.

(1.) Generator Name: Rock Island Arsenal (RIA) EPA Generator No.: IL5210021833

(2.) Generating Facility Complete Address:
Commander, Rock Island Arsenal, ATTN: SMCRI-SEM (Dr. Shore) Rock Island, IL 61299-500

(3.) Authorized Company Representative: Dr. William Shore Title: Environmental Coordinator

(4.) Phone Number: (309) 782-7855

(5.) Emergency Contact RIA Fire Department Title: Shift Chief Phone: (309) 782-5148

(6.) General Description of The Waste: Caustic Solution (identified as Alumon I in lab) (OIL 1) C.C.9064

(7.) Process Generating Waste: Plating Shop

(8.) Anticipated volume 1 [ ] Gallons [ ] Tons [ ] Cubic Yards [X] Drums, or [ ] Other

Per: [ ] Day [ ] Week [ ] Month [X] Year, or [ ] Other #9064121

(9.) Waste Properties:

(a.) Vapor pressure (in mm of Hg @ 25°C)

(b.) Flash Point [ ] °F [ ] °C [ ] Closed Cup [ ] Open Cup

(c.) Phases/layers: [X] Single [ ] Bilayered [ ] Multilayered

(d.) Physical State @ 20 °C: [ ] Solid [X] Liquid [ ] Semi-Solid [ ] Powder [ ] Other

(e.) pH >12.5 (f.) Solubility (g/100g H_2O) @ 20°C:

(g.) Density: [ ] lb./ft.^{3} [ ] lb./yd.^{3} [ ] lb./gal. [ ] g/cc

(h.) Odor: [ ] Strong [ ] Mild [X] None

(i.) Reactivity: Water [ ] Yes [X] No Autopolymerizable [ ] Yes [X] No Shock Sensitive [ ] Yes [X] No
Pyrophoric [ ] Yes [X] No Thermally Sensitive [ ] Yes [X] No Explosive [ ] Yes [X] No

(10.) Complete waste composition (with ranges—indicate % or ppm.) Attach Additional Pages if Necessary

ORGANIC

INORGANIC
NaOH = 430g/L

(11.) Sample Included [X] Yes [ ] No

(12.) Is this waste a "Hazardous Waste" as defined by regulations of the U.S. Environmental Protection Agency pursuant to 40 CFR § 261 of the Resource Conservation and Recovery Act? yes

(13.) Manifest Information

Proper USDOT Shipping Name	USDOT Hazard Class	UN or NA No.	USEPA Haz. Code	USEPA Haz. Waste No. (Type)
Sodium Hydroxide, liquid	Corrosive material	UN1824	C	D002

(14.) This waste contains: Biological Materials [ ] Yes [X] No Pathogens [ ] Yes [X] No Etiological Agents [ ] Yes [X] No
Radioactive Materials [ ] Yes [X] No PCB's [ ] Yes [X] No Dioxin [ ] Yes [X] No

If yes, specify type (if applicable) and concentration:

(15.) Have you obtained toxicity studies of this waste material? yes If so, please attach a copy of the results.

(16.) Required personal protective equipment & procedures: /

I hereby certify that the above and attached description is complete and accurate to the best of my knowledge and ability to determine, that no deliberate or willful omissions of composition or properties exists, and that all known or suspected hazards have been disclosed.

Generator's Authorized Signatory William S. Shore Title Environmental Coordinator Date 11/2/90

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2928

WASTE PROFILE SHEETS

General Directions: In order for us to determine whether we can lawfully and safely transport, treat, and dispose of your waste material, we must obtain certain information about the chemical and physical properties of the waste and its chemical composition. Please be complete in your answers; if your response is "none" or "not available", so indicate. Answers must be printed in ink or typewritten and the completed form must be signed. Please make a copy of this form for your records.

(1.) Generator Name: Rock Island Arsenal (RIA) EPA Generator No.: IL5210021833

(2.) Generating Facility Complete Address:
Commander, Rock Island Arsenal, ATTN: SMCRI-SEM (Dr. Shore) Rock Island, IL 61299-5000

(3.) Authorized Company Representative: Dr. William Shore Title: Environmental Coordinator

(4.) Phone Number: (309) 782- 7855

(5.) Emergency Contact RIA Fire Department Title: Shift Chief Phone: (309) 782-5148

(6.) General Description of The Waste: M.sc. Tank Cleanup (Last Drum)
"PLATING SHOP WASTE" C.C. 9064

(7.) Process Generating Waste: Plating Shop

(8.) Anticipated volume 1 [ ] Gallons [ ] Tons [ ] Cubic Yards [X] Drums, or [ ] Other
Per: [ ] Day [ ] Week [ ] Month [X] Year, or [ ] Other 9064322

(9.) Waste Properties:

(a.) Vapor pressure (in mm of Hg @ 25°C)

(b.) Flash Point [ ] °F [ ] °C [ ] Closed Cup [ ] Open Cup

(c.) Phases/layers: [ ] Single [X] Bilayered [ ] Multilayered

(d.) Physical State @ 20 °C: [X] Solid [ ] Liquid [X] Semi-Solid [ ] Powder [ ] Other

(e.) pH (f.) Solubility (g/100g H_2O) @ 20°C:

(g.) Density: 8 [ ] lb./ft.^{3} [ ] lb./yd.^{3} [X] lb./gal. [ ] g/cc

(h.) Odor: [ ] Strong [X] Mild [ ] None

(i.) Reactivity: Water [ ] Yes [X] No Autopolymerizable [ ] Yes [X] No Shock Sensitive [ ] Yes [X] No
Pyrophoric [ ] Yes [X] No Thermally Sensitive [ ] Yes [X] No Explosive [ ] Yes [X] No

(10.) Complete waste composition (with ranges—indicate % or ppm.) Attach Additional Pages if Necessary

ORGANIC	INORGANIC
	Cr = 15000 ppm
	Cd = 270 ppm
	Pb = 4800 ppm

(11.) Sample Included [X] Yes [ ] No

(12.) Is this waste a "Hazardous Waste" as defined by regulations of the U.S. Environmental Protection Agency pursuant to 40 CFR § 261 of the Resource Conservation and Recovery Act? yes

(13.) Manifest Information

Proper USDOT Shipping Name	USDOT Hazard Class	UN or NA No.	USEPA Haz. Code	USEPA Haz. Waste No. (Type)
Hazardous Waste solid, NOS	ORM-E	NA 9189	E	D007
				D006, D008

(14.) This waste contains: Biological Materials [ ] Yes [X] No Pathogens [ ] Yes [X] No Etiological Agents [ ] Yes [X] No
Radioactive Materials [ ] Yes [X] No PCB's [ ] Yes [X] No Dioxin [ ] Yes [X] No

If yes, specify type (if applicable) and concentration:

(15.) Have you obtained toxicity studies of this waste material? yes If so, please attach a copy of the results.

(16.) Required personal protective equipment & procedures: 1

I hereby certify that the above and attached description is complete and accurate to the best of my knowledge and ability to determine, that no deliberate or willful omissions of composition or properties exists, and that all known or suspected hazards have been disclosed.

Generator's Authorized Signatory William S. Shore Title Environmental Coordinator Date 11/2/90

J

1304

WASTE PROFILE SHEETS

General Directions: In order for us to determine whether we can lawfully and safely transport, treat, and dispose of your waste material, we must obtain certain information about the chemical and physical properties of the waste and its chemical composition. Please be complete in your answers; if your response is "none" or "not available", so indicate. Answers must be printed in ink or typewritten and the completed form must be signed. Please make a copy of this form for your records.

(1.) Generator Name: Rock Island Arsenal (RIA) EPA Generator No.: IL5210021833

(2.) Generating Facility Complete Address:
Commander, Rock Island Arsenal, ATTN: SMCRI-SEM (Dr. Shore) Rock Island, IL 61299-5000

(3.) Authorized Company Representative: Dr. William Shore Title: Environmental Coordinator

(4.) Phone Number: (309) 782- 7855

(5.) Emergency Contact RIA Fire Department Title: Shift Chief Phone: (309) 782-5148

(6.) General Description of The Waste: HYDROFLUORIC ACID - Tank J CC 9064

(7.) Process Generating Waste: Plating Shop

(8.) Anticipated volume 11 [ ] Gallons [ ] Tons [ ] Cubic Yards [X] Drums, or [ ] Other
Per: [ ] Day [ ] Week [ ] Month [X] Year, or [ ] Other 9064129, 248, 309, 310, 312-318

(9.) Waste Properties:

(a.) Vapor pressure (in mm of Hg @ 25 °C)

(b.) Flash Point [ ] °F [ ] °C [ ] Closed Cup [ ] Open Cup

(c.) Phases/layers: [X] Single [ ] Bilayered [ ] Multilayered

(d.) Physical State @ 20 °C: [ ] Solid [X] Liquid [ ] Semi-Solid [ ] Powder [ ] Other

(e.) pH <2 (f.) Solubility (g/100g H_2O) @ 20°C:

(g.) Density: 6 [ ] lb./ft.^{3} [ ] lb./yd.^{3} [X] lb./gal. [ ] g/cc

(h.) Odor: [ ] Strong [X] Mild [ ] None

(i.) Reactivity: Water [ ] Yes [X] No Autopolymerizable [ ] Yes [X] No Shock Sensitive [ ] Yes [X] No
Pyrophoric [ ] Yes [X] No Thermally Sensitive [ ] Yes [X] No Explosive [ ] Yes [X] No

(10.) Complete waste composition (with ranges—indicate % or ppm.) Attach Additional Pages if Necessary

ORGANIC	INORGANIC
	Cr = 290ppm
	Cd = 2.3ppm
	Pb = 25ppm
	Fluoride

(11.) Sample Included [X] Yes [ ] No

(12.) Is this waste a "Hazardous Waste" as defined by regulations of the U.S. Environmental Protection Agency pursuant to 40 CFR § 261 of the Resource Conservation and Recovery Act? yes

(13.) Manifest Information

Proper USDOT Shipping Name	USDOT Hazard Class	UN or NA No.	USEPA Haz. Code	USEPA Haz. Waste No. (Type)
hydrofluoric acid solution	Corrosive	UN1790	C,T	D002
				D007, D008

(14.) This waste contains: Biological Materials [ ] Yes [X] No Pathogens [ ] Yes [X] No Etiological Agents [ ] Yes [X] No
Radioactive Materials [ ] Yes [X] No PCB's [ ] Yes [X] No Dioxin [ ] Yes [X] No

If yes, specify type (if applicable) and concentration:

(15.) Have you obtained toxicity studies of this waste material? yes If so, please attach a copy of the results.

(16.) Required personal protective equipment & procedures: 1

I hereby certify that the above and attached description is complete and accurate to the best of my knowledge and ability to determine, that no deliberate or willful omissions of composition or properties exists, and that all known or suspected hazards have been disclosed.

Generator's Authorized Signatory
William L. Shore Title Environmental Coordinator Date 11/2/90

K

1304

WASTE PROFILE SHEETS

General Directions: In order for us to determine whether we can lawfully and safely transport, treat, and dispose of your waste material, we must obtain certain information about the chemical and physical properties of the waste and its chemical composition. Please be complete in your answers; if your response is "none" or "not available", so indicate. Answers must be printed in ink or typewritten and the completed form must be signed. Please make a copy of this form for your records.

(1.) Generator Name: Rock Island Arsenal (RIA) EPA Generator No.: IL5210021833

(2.) Generating Facility Complete Address:
Commander, Rock Island Arsenal, ATTN: SMCRI-SEM (Dr. Shore) Rock Island, IL 61299-5000

(3.) Authorized Company Representative: Dr. William Shore Title: Environmental Coordinator

(4.) Phone Number: (309) 782- 7855

(5.) Emergency Contact RIA Fire Department Title: Shift Chief Phone: (309) 782-5148

(6.) General Description of The Waste: HF TANK WALL
"PLATING SHOP WASTE" K C.C. 9064

(7.) Process Generating Waste:

(8.) Anticipated volume 3 [ ] Gallons [ ] Tons [ ] Cubic Yards [X] Drums, or [ ] Other
Per: [ ] Day [ ] Week [ ] Month [X] Year, or [ ] Other 9064319-321

(9.) Waste Properties:

(a.) Vapor pressure (in mm of Hg @ 25 °C)

(b.) Flash Point [ ] °F [ ] °C [ ] Closed Cup [ ] Open Cup

(c.) Phases/layers: [X] Single [ ] Bilayered [ ] Multilayered

(d.) Physical State @ 20 °C: [X] Solid [ ] Liquid [ ] Semi-Solid [ ] Powder [ ] Other

(e.) pH <2 (f.) Solubility (g/100g H_2O) @ 20 °C:

(g.) Density: 10 [ ] lb./ft.^{3} [ ] lb./yd.^{3} [X] lb./gal. [ ] g/cc

(h.) Odor: [ ] Strong [ ] Mild [X] None

(i.) Reactivity: Water [ ] Yes [ ] No Autopolymerizable [ ] Yes [ ] No Shock Sensitive [ ] Yes [ ] No
Pyrophoric [ ] Yes [ ] No Thermally Sensitive [ ] Yes [ ] No Explosive [ ] Yes [ ] No

(10.) Complete waste composition (with ranges—indicate % or ppm.) Attach Additional Pages if Necessary

ORGANIC	INORGANIC
insulation	Cr = 280 ppm
	Cd = 1.4 ppm
	Pb = 19000 ppm
	Fluoride

(11.) Sample Included [X] Yes [ ] No

(12.) Is this waste a "Hazardous Waste" as defined by regulations of the U.S. Environmental Protection Agency pursuant to 40 CFR § 261 of the Resource Conservation and Recovery Act? yes

(13.) Manifest Information

Proper USDOT Shipping Name	USDOT Hazard Class	UN or NA No.	USEPA Haz. Code	USEPA Haz. Waste No. (Type)
Hydrofluoric Acid Solution	Corrosive	UN1790	C,T	D002
				D008, D007

(14.) This waste contains: Biological Materials [ ] Yes [ ] No Pathogens [ ] Yes [ ] No Etiological Agents [ ] Yes [ ] No
Radioactive Materials [ ] Yes [ ] No PCB's [ ] Yes [ ] No Dioxin [ ] Yes [ ] No

If yes, specify type (if applicable) and concentration:

(15.) Have you obtained toxicity studies of this waste material? yes If so, please attach a copy of the results.

(16.) Required personal protective equipment & procedures: 1

I hereby certify that the above and attached description is complete and accurate to the best of my knowledge and ability to determine, that no deliberate or willful omissions of composition or properties exists, and that all known or suspected hazards have been disclosed.

Generator's Authorized Signatory
William S. Shore Title Environmental Coordinator Date 11/2/90

1659

WASTE CHARACTERIZATION DATA

General Directions: In order for us to determine whether we can lawfully and safely transport, treat, and dispose of your waste material, we must obtain certain information about the chemical and physical properties of the waste and its chemical composition. Please be complete in your answers; if your response is "none" or "not available", so indicate. Answers must be printed in ink or typewritten and the completed form must be signed. Please make a copy of this form for your records.

(1.) Generator Name: Rock Island Arsenal (RIA) EPA Generator No.: IL5210021833

(2.) Generating Facility Complete Address:
Commander, Rock Island Arsenal, ATTN: SMCRI-SEM (Dr. Shore) Rock Island, IL 61299-500

(3.) Authorized Company Representative: Dr. William Shore Title: Environmental Coordinator

(4.) Phone Number: (309) 782-7855

(5.) Emergency Contact RIA Fire Department Title: Shift Chief Phone: (309) 782-5148

(6.) General Description of The Waste: Caustic Solution (identified as Alumon I in lab) (OIL 1) C.C.9064

(7.) Process Generating Waste: Plating shop see attached lab report

(8.) Anticipated volume 1 [ ] Gallons [ ] Tons [ ] Cubic Yards [X] Drums, or [ ] Other
Per: [ ] Day [ ] Week [ ] Month [X] Year, or [ ] Other #9064121

(9.) Waste Properties:

(a.) Vapor pressure (in mm of Hg @ 25°C)

(b.) Flash Point [ ] °F [ ] °C [ ] Closed Cup [ ] Open Cup

(c.) Phases/layers: [X] Single [ ] Bilayered [ ] Multilayered

(d.) Physical State @ 20 °C: [ ] Solid [X] Liquid [ ] Semi-Solid [ ] Powder [ ] Other

(e.) pH >12.5 (f.) Solubility (g/100g H_2O) @ 20°C:

(g.) Density: [ ] lb./ft.^{3} [ ] lb./yd.^{3} [ ] lb./gal. [ ] g/cc

(h.) Odor: [ ] Strong [ ] Mild [X] None

(i.) Reactivity: Water [ ] Yes [X] No Autopolymerizable [ ] Yes [X] No Shock Sensitive [ ] Yes [X] No
Pyrophoric [ ] Yes [X] No Thermally Sensitive [ ] Yes [X] No Explosive [ ] Yes [X] No

(10.) Complete waste composition (with ranges—indicate % or ppm.) Attach Additional Pages if Necessary

ORGANIC ≈32% INORGANIC NaOH = 430g/L

(11.) Sample Included [X] Yes [ ] No

(12.) Is this waste a "Hazardous Waste" as defined by regulations of the U.S. Environmental Protection Agency pursuant to 40 CFR § 261 of the Resource Conservation and Recovery Act? yes

(13.) Manifest Information

Proper USDOT Shipping Name	USDOT Hazard Class	UN or NA No.	USEPA Haz. Code	USEPA Haz. Waste No. (Type)
Sodium Hydroxide, liquid	Corrosive material	UN1824	C	D002

(14.) This waste contains: Biological Materials [ ] Yes [X] No Pathogens [ ] Yes [X] No Etiological Agents [ ] Yes [X] No
Radioactive Materials [ ] Yes [X] No PCB's [ ] Yes [X] No Dioxin [ ] Yes [X] No

If yes, specify type (if applicable) and concentration:

(15.) Have you obtained toxicity studies of this waste material? yes If so, please attach a copy of the results.

(16.) Required personal protective equipment & procedures:

I hereby certify that the above and attached description is complete and accurate to the best of my knowledge and ability to determine, that no deliberate or willful omissions of composition or properties exists, and that all known or suspected hazards have been disclosed.

Generator's Authorized Signatory William S. Shore Title Environmental Coordinator Date 11/2/90

J

1304:

WASTE PROFILE SHEETS

General Directions: In order for us to determine whether we can lawfully and safely transport, treat, and dispose of your waste material, we must obtain certain information about the chemical and physical properties of the waste and its chemical composition. Please be complete in your answers; if your response is "none" or "not available", so indicate. Answers must be printed in ink or typewritten and the completed form must be signed. Please make a copy of this form for your records.

(1.) Generator Name: Rock Island Arsenal (RIA) EPA Generator No.: IL5210021833

(2.) Generating Facility Complete Address:
Commander, Rock Island Arsenal, ATTN: SMCRI-SEM (Dr. Shore) Rock Island, IL 61299-5000

(3.) Authorized Company Representative: Dr. William Shore Title: Environmental Coordinator

(4.) Phone Number: (309) 782- 7855

(5.) Emergency Contact RIA Fire Department Title: Shift Chief Phone: (309) 782-5148

(6.) General Description of The Waste: HYDROFLUORIC ACID - Tank J CC 9064

(7.) Process Generating Waste: Plating Shop

(8.) Anticipated volume 11 [ ] Gallons [ ] Tons [ ] Cubic Yards [X] Drums, or [ ] Other
Per: [ ] Day [ ] Week [ ] Month [X] Year, or [ ] Other 9064129, 298, 309, 310, 312-318

(9.) Waste Properties:

(a.) Vapor pressure (in mm of Hg @ 25 °C)

(b.) Flash Point [ ] °F [ ] °C [ ] Closed Cup [ ] Open Cup

(c.) Phases/layers: [X] Single [ ] Bilayered [ ] Multilayered

(d.) Physical State @ 20 °C: [ ] Solid [X] Liquid [ ] Semi-Solid [ ] Powder [ ] Other

(e.) pH <2 (f.) Solubility (g/100g H_2O) @ 20 °C:

(g.) Density: 6 [ ] lb./ft.^{3} [ ] lb./yd.^{3} [X] lb./gal. [ ] g/cc

(h.) Odor: [ ] Strong [X] Mild [ ] None

(i.) Reactivity: Water [ ] Yes [X] No Autopolymerizable [ ] Yes [X] No Shock Sensitive [ ] Yes [X] No
Pyrophoric [ ] Yes [X] No Thermally Sensitive [ ] Yes [X] No Explosive [ ] Yes [X] No

(10.) Complete waste composition (with ranges—indicate % or ppm.) Attach Additional Pages if Necessary

ORGANIC	INORGANIC
	Cr = 290 ppm
	Cd = 2.3 ppm
	Pb = 25 ppm
	Fluoride

(11.) Sample Included [X] Yes [ ] No

(12.) Is this waste a "Hazardous Waste" as defined by regulations of the U.S. Environmental Protection Agency pursuant to 40 CFR § 261 of the Resource Conservation and Recovery Act? yes

(13.) Manifest Information

Proper USDOT Shipping Name	USDOT Hazard Class	UN or NA No.	USEPA Haz. Code	USEPA Haz. Waste No. (Type)
hydrofluoric acid solution	Corrosive	UN1790	C,T	0002
				D007, D008

(14.) This waste contains: Biological Materials [ ] Yes [X] No Pathogens [ ] Yes [X] No Etiological Agents [ ] Yes [X] No
Radioactive Materials [ ] Yes [X] No PCB's [ ] Yes [X] No Dioxin [ ] Yes [X] No

If yes, specify type (if applicable) and concentration:

(15.) Have you obtained toxicity studies of this waste material? yes If so, please attach a copy of the results.

(16.) Required personal protective equipment & procedures: 1

I hereby certify that the above and attached description is complete and accurate to the best of my knowledge and ability to determine, that no deliberate or willful omissions of composition or properties exists, and that all known or suspected hazards have been disclosed.

Generator's Authorized Signatory
William L. Shore Title Environmental Coordinator Date 11/2/90

K

1304

WASTE PROFILE SHEETS

General Directions: In order for us to determine whether we can lawfully and safely transport, treat, and dispose of your waste material, we must obtain certain information about the chemical and physical properties of the waste and its chemical composition. Please be complete in your answers; if your response is "none" or "not available", so indicate. Answers must be printed in ink or typewritten and the completed form must be signed. Please make a copy of this form for your records.

(1.) Generator Name: Rock Island Arsenal (RIA) EPA Generator No.: IL5210021833

(2.) Generating Facility Complete Address:
Commander, Rock Island Arsenal, ATTN: SMCRI-SEM (Dr. Shore) Rock Island, IL 61299-5000

(3.) Authorized Company Representative: Dr. William Shore Title: Environmental Coordinator

(4.) Phone Number: (309) 782- 7855

(5.) Emergency Contact RIA Fire Department Title: Shift Chief Phone: (309) 782-5148

(6.) General Description of The Waste: HF TANK WALL
"PLATING SHOP WASTE" K CC 9064

(7.) Process Generating Waste:

(8.) Anticipated volume 3 [ ] Gallons [ ] Tons [ ] Cubic Yards [X] Drums, or [ ] Other
Per: [ ] Day [ ] Week [ ] Month [X] Year, or [ ] Other 9064319-321

(9.) Waste Properties:

(a.) Vapor pressure (in mm of Hg @ 25 °C)

(b.) Flash Point [ ] °F [ ] °C [ ] Closed Cup [ ] Open Cup

(c.) Phases/layers: [X] Single [ ] Bilayered [ ] Multilayered

(d.) Physical State @ 20 °C: [X] Solid [ ] Liquid [ ] Semi-Solid [ ] Powder [ ] Other

(e.) pH <2 (f.) Solubility (g/100g H_2O) @ 20 °C:

(g.) Density: 0 [ ] lb./ft.^{3} [ ] lb./yd.^{3} [X] lb./gal. [ ] g/cc

(h.) Odor: [ ] Strong [ ] Mild [X] None

(i.) Reactivity: Water [ ] Yes [ ] No Autopolymerizable [ ] Yes [ ] No Shock Sensitive [ ] Yes [ ] No
Pyrophoric [ ] Yes [ ] No Thermally Sensitive [ ] Yes [ ] No Explosive [ ] Yes [ ] No

(10.) Complete waste composition (with ranges—indicate % or ppm.) Attach Additional Pages if Necessary

ORGANIC	INORGANIC
insulation	Cr = 280 ppm
	Cd = 1.4 ppm
	Pb = 19000 ppm
	Fluoride

(11.) Sample Included [X] Yes [ ] No

(12.) Is this waste a "Hazardous Waste" as defined by regulations of the U.S. Environmental Protection Agency pursuant to 40 CFR § 261 of the Resource Conservation and Recovery Act? yes

(13.) Manifest Information

Proper USDOT Shipping Name	USDOT Hazard Class	UN or NA No.	USEPA Haz. Code	USEPA Haz. Waste No. (Type)
Hydrofluoric Acid Solution	Corrosive	UN1790	C,T	D002 D008, D007

(14.) This waste contains: Biological Materials [ ] Yes [ ] No Pathogens [ ] Yes [ ] No Etiological Agents [ ] Yes [ ] No
Radioactive Materials [ ] Yes [ ] No PCB's [ ] Yes [ ] No Dioxin [ ] Yes [ ] No

If yes, specify type (if applicable) and concentration:

(15.) Have you obtained toxicity studies of this waste material? yes If so, please attach a copy of the results.

(16.) Required personal protective equipment & procedures:

I hereby certify that the above and attached description is complete and accurate to the best of my knowledge and ability to determine, that no deliberate or willful omissions of composition or properties exists, and that all known or suspected hazards have been disclosed.

Generator's Authorized Signatory
William A. Shore Title Environmental Coordinator Date 11/2/90

L

29281

WASTE PROFILE SHEETS

General Directions: In order for us to determine whether we can lawfully and safely transport, treat, and dispose of your waste material, we must obtain certain information about the chemical and physical properties of the waste and its chemical composition. Please be complete in your answers; if your response is "none" or "not available", so indicate. Answers must be printed in ink or typewritten and the completed form must be signed. Please make a copy of this form for your records.

(1.) Generator Name: Rock Island Arsenal (RIA) EPA Generator No.: IL5210021833

(2.) Generating Facility Complete Address:
Commander, Rock Island Arsenal, ATTN: SMCRI-SEM (Dr. Shore) Rock Island, IL 61299-5000

(3.) Authorized Company Representative: Dr. William Shore Title: Environmental Coordinator

(4.) Phone Number: (309) 782- 7855

(5.) Emergency Contact: RIA Fire Department Title: Shift Chief Phone: (309) 782-5148

(6.) General Description of The Waste: Misc. Tank Cleanup (Last Drum)
"PLATING SHOP WASTE" C.C. 9064

(7.) Process Generating Waste: Plating Shop

(8.) Anticipated volume [redacted] [ ] Gallons [ ] Tons [ ] Cubic Yards [X] Drums, or [ ] Other
Per: [ ] Day [ ] Week [ ] Month [X] Year, or [ ] Other 9064322

(9.) Waste Properties:

(a.) Vapor pressure (in mm of Hg @ 25 °C)

(b.) Flash Point [ ] °F [ ] °C [ ] Closed Cup [ ] Open Cup

(c.) Phases/layers: [ ] Single [X] Bilayered [ ] Multilayered

(d.) Physical State @ 20 °C: [X] Solid [ ] Liquid [X] Semi-Solid [ ] Powder [ ] Other

(e.) pH (f.) Solubility (g/100g H_2O) @ 20 °C:

(g.) Density: 8 [ ] lb./ft.^{3} [ ] lb./yd.^{3} [X] lb./gal. [ ] g/cc

(h.) Odor: [ ] Strong [X] Mild [ ] None

(i.) Reactivity: Water [ ] Yes [X] No Autopolymerizable [ ] Yes [X] No Shock Sensitive [ ] Yes [X] No
Pyrophoric [ ] Yes [X] No Thermally Sensitive [ ] Yes [X] No Explosive [ ] Yes [X] No

(10.) Complete waste composition (with ranges—indicate % or ppm.) Attach Additional Pages if Necessary

ORGANIC	INORGANIC
	Cr = 15000 ppm
	Cd = 27 ppm
	Pb = 4700 ppm

(11.) Sample Included [X] Yes [ ] No

(12.) Is this waste a "Hazardous Waste" as defined by regulations of the U.S. Environmental Protection Agency pursuant to 40 CFR § 261 of the Resource Conservation and Recovery Act? yes

(13.) Manifest Information

Proper USDOT Shipping Name	USDOT Hazard Class	UN or NA No.	USEPA Haz. Code	USEPA Haz. Waste No. (Type)
Hazardous Waste Solid, NOS	ORM-E	NA 9189	E	D007
				D006, D008

(14.) This waste contains: Biological Materials [ ] Yes [X] No Pathogens [ ] Yes [X] No Etiological Agents [ ] Yes [X] No
Radioactive Materials [ ] Yes [X] No PCB's [ ] Yes [X] No Dioxin [ ] Yes [X] No

If yes, specify type (if applicable) and concentration:

(15.) Have you obtained toxicity studies of this waste material? yes If so, please attach a copy of the results.

(16.) Required personal protective equipment & procedures:

I hereby certify that the above and attached description is complete and accurate to the best of my knowledge and ability to determine, that no deliberate or willful omissions of composition or properties exists, and that all known or suspected hazards have been disclosed.

Generator's Authorized Signatory
William S. Shore Title Environmental Coordinator Date 11/2/90

6004

WASTE CHARACTERIZATION DATA

General Directions: In order for us to determine whether we can lawfully and safely transport, treat, and dispose of your waste material, we must obtain certain information about the chemical and physical properties of the waste and its chemical composition. Please be complete in your answers; if your response is "none" or "not available", so indicate. Answers must be printed in ink or typewritten and the completed form must be signed. Please make a copy of this form for your records.

(1.) Generator Name: Rock Island Arsenal (RIA) EPA Generator No.: IL5210021833

(2.) Generating Facility Complete Address:
Commander, Rock Island Arsenal, ATTN: SMCRI-SEM (Dr. Shore) Rock Island, IL 61299-5000

(3.) Authorized Company Representative: Dr. William Shore Title: Environmental Coordinator

(4.) Phone Number: (309) 782- 7855

(5.) Emergency Contact RIA Fire Department Title: Shift Chief Phone: (309) 782-5148

(6.) General Description of The Waste: WASTE OIL-(Petroleum-based preservative) CC.9064

(7.) Process Generating Waste: Plating Shop

(8.) Anticipated volume 2 [ ] Gallons [ ] Tons [ ] Cubic Yards [X] Drums, or [ ] Other
Per: [ ] Day [ ] Week [ ] Month [X] Year, or [ ] Other 9064110, 111

(9.) Waste Properties:

(a.) Vapor pressure (in mm of Hg @ 25°C)

(b.) Flash Point [ ] °F [ ] °C [ ] Closed Cup [ ] Open Cup

(c.) Phases/layers: [X] Single [ ] Bilayered [ ] Multilayered

(d.) Physical State @ 20 °C: [ ] Solid [ ] Liquid [X] Semi-Solid [ ] Powder [ ] Other

(e.) pH (f.) Solubility (g/100g H_2O) @ 20°C:

(g.) Density: .9 [ ] lb./ft.^{3} [ ] lb./yd.^{3} [ ] lb./gal. [X] g/cc

(h.) Odor: [ ] Strong [X] Mild [ ] None

(i.) Reactivity: Water [ ] Yes [X] No Autopolymerizable [ ] Yes [X] No Shock Sensitive [ ] Yes [X] No
Pyrophoric [ ] Yes [X] No Thermally Sensitive [ ] Yes [X] No Explosive [ ] Yes [X] No

(10.) Complete waste composition (with ranges—indicate % or ppm.) Attach Additional Pages if Necessary

ORGANIC	INORGANIC
100% Hydrocarbon	

(11.) Sample Included [ ] Yes [X] No

(12.) Is this waste a "Hazardous Waste" as defined by regulations of the U.S. Environmental Protection Agency pursuant to 40 CFR § 261 of the Resource Conservation and Recovery Act? NO

(13.) Manifest Information

Proper USDOT Shipping Name	USDOT Hazard Class	UN or NA No.	USEPA Haz. Code	USEPA Haz. Waste No. (Type)
NA	NA	- NA -	NA	- NA -

(14.) This waste contains: Biological Materials [ ] Yes [X] No Pathogens [ ] Yes [X] No Etiological Agents [ ] Yes [X] No
Radioactive Materials [ ] Yes [X] No PCB's [ ] Yes [X] No Dioxin [ ] Yes [X] No

If yes, specify type (if applicable) and concentration:

(15.) Have you obtained toxicity studies of this waste material? NO If so, please attach a copy of the results.

(16.) Required personal protective equipment & procedures: glasses + gloves

I hereby certify that the above and attached description is complete and accurate to the best of my knowledge and ability to determine, that no deliberate or willful omissions of composition or properties exists, and that all known or suspected hazards have been disclosed.

Generator's Authorized Signatory
William L. Shore Title Environmental Coordinator Date 11/2/90

6004

WASTE CHARACTERIZATION DATA

General Directions: In order for us to determine whether we can lawfully and safely transport, treat, and dispose of your waste material, we must obtain certain information about the chemical and physical properties of the waste and its chemical composition. Please be complete in your answers; if your response is "none" or "not available", so indicate. Answers must be printed in ink or typewritten and the completed form must be signed. Please make a copy of this form for your records.

(1.) Generator Name: Rock Island Arsenal (RIA) EPA Generator No.: IL5210021833

(2.) Generating Facility Complete Address:
Commander, Rock Island Arsenal, ATTN: SMCRI-SEM (Dr. Shore) Rock Island, IL 61299-5000

(3.) Authorized Company Representative: Dr. William Shore Title: Environmental Coordinator

(4.) Phone Number: (309) 782- 7855

(5.) Emergency Contact RIA Fire Department Title: Shift Chief Phone: (309) 782-5148

(6.) General Description of The Waste: WAXY OIL + CLEAN-UP MAT'L (Petroleum-based preservative) CC.9064

(7.) Process Generating Waste: Plating shop

(8.) Anticipated volume 1 [ ] Gallons [ ] Tons [ ] Cubic Yards [X] Drums, or [ ] Other

Per: [ ] Day [ ] Week [ ] Month [X] Year, or [ ] Other 9064117

(9.) Waste Properties:

(a.) Vapor pressure (in mm of Hg @ 25 °C)

(b.) Flash Point [ ] °F [ ] °C [ ] Closed Cup [ ] Open Cup

(c.) Phases/layers: [ ] Single [ ] Bilayered [X] Multilayered

(d.) Physical State @ 20 °C: [X] Solid [ ] Liquid [X] Semi-Solid [ ] Powder [ ] Other

(e.) pH (f.) Solubility (g/100g H_2O) @ 20 °C:

(g.) Density: .9 [ ] lb./ft.^{3} [ ] lb./yd.^{3} [ ] lb./gal. [X] g/cc

(h.) Odor: [ ] Strong [X] Mild [ ] None

(i.) Reactivity: Water [ ] Yes [X] No Autopolymerizable [ ] Yes [X] No Shock Sensitive [ ] Yes [X] No
Pyrophoric [ ] Yes [X] No Thermally Sensitive [ ] Yes [X] No Explosive [ ] Yes [X] No

(10.) Complete waste composition (with ranges—indicate % or ppm.) Attach Additional Pages if Necessary

ORGANIC	INORGANIC
90% hydrocarbon	
10% dirt	

(11.) Sample Included [ ] Yes [X] No

(12.) Is this waste a "Hazardous Waste" as defined by regulations of the U.S. Environmental Protection Agency pursuant to 40 CFR § 261 of the Resource Conservation and Recovery Act? NO

(13.) Manifest Information

Proper USDOT Shipping Name	USDOT Hazard Class	UN or NA No.	USEPA Haz. Code	USEPA Haz. Waste No. (Type)
NA	NA	NA	NA	NA

(14.) This waste contains: Biological Materials [ ] Yes [ ] No Pathogens [ ] Yes [ ] No Etiological Agents [ ] Yes [ ] No
Radioactive Materials [ ] Yes [ ] No PCB's [ ] Yes [ ] No Dioxin [ ] Yes [ ] No

If yes, specify type (if applicable) and concentration:

(15.) Have you obtained toxicity studies of this waste material? NO If so, please attach a copy of the results.

(16.) Required personal protective equipment & procedures: glasses and gloves

I hereby certify that the above and attached description is complete and accurate to the best of my knowledge and ability to determine, that no deliberate or willful omissions of composition or properties exists, and that all known or suspected hazards have been disclosed.

Generator's Authorized Signatory

William S. Shore Title Environmental Coordinator Date 11/2/90

☆ U.S. GOVERNMENT PRINTING OFFICE: 1986—644-008/10012

PAGE OF

ROCK ISLAND ARSENAL

REQUEST FOR TEST AND LABORATORY RESULTS

LAB. NUMBER	DATE RECEIVED:	PURCHASE ORDER NUMBER:	ITEM NUMBER:	DATE:
90-4076	9-25-90			9-25-90

QA NUMBER:	EX. ORDER NUMBER:	REQN NUMBER:	CHARGE TO:
			00790-4390000

CHECK APPLICABLE BLOCK: ☐ PARTICULATE CONTAMINATION ☒ CHEMICAL ANALYSIS ☐ FAILURE ANALYSIS ☐ OTHER

MATERIAL:

DETERMINE WHETHER HAZARDOUS OR NOT.

SIZE:	QTY:	SPEC NUMBER:	REC'D FROM:	INSP/PHONE:
	5		K. Lowenstein	2-7649/53

OIL 1 (ALUMON-1?) - Not oil, 430g NaOH/L (approx. 32% NaOH) cm

OIL 2 (OIL + WATER) - 70ppm Chloride cm

OIL 3 (TITAN 150) - 100ppm chloride cm

OIL 4 (MIXED OILS) - >7500ppm chloride, 90ppm TCEA cm

RUST PRESERV OIL. - 80ppm chloride cm, Flash pt. > Room Temp.

Sample	Classification ①	Profile
Oil 1	D002 Corrosive liquid Hazardous	
Oil 2	Non-hazardous for energy recovery	
Oil 3	Non-hazardous for energy recovery	
Oil 4	F001 TCEA Hazardous	3944
Rust Preserve	Non-hazardous for energy recovery	

① Classifications based on parameters tested.

cm 10-12-90

LABORATORY RECOMMENDATION: ☐ Accept ☐ Reject ☒ For Information Only

See "old plating shop" for profiles

90-4221

Bldg 64 Samples

	Sample	Chromium	Cadmium	Lead	pH	
A	Acid Tank 1 Sludge	3800 ppm	850 ppm	330 ppm	>7, <12.5	
B	Acid Tank 2 Liquid	9000 ppm	1100 ppm	2.4 ppm	<2	Acidity to pH 3.7 = 2260 mg CaCO3/l
C	Acid Tank 2 Sludge	14000 ug/g	2000 ug/g	370 ug/g		
D	Alkaline Tank 1 Mix	21000 ppm	190 ppm	5800 ppm	>7, <12.5	
E	Alkaline Tank 2 Mix	15000 ppm	150 ppm	8000 ppm	>7, <12.5	
F	Alkaline Tank 3 Mix	9400 ppm	54 ppm	1200 ppm	6	
G	Nickel Strip Sludge	36 ug/g	16 ug/g	380 ug/g		
H	Muratic Acid Sludge	28000 ug/g	13000 ug/g	450 ug/g		
I	Alkali Cleaner Solids	770 ug/g	170 ug/g	16 ug/g		
J	HF Tank	290 ug/g	2.3 ug/g	25 ug/g		
K	HF Wall	280 ug/g	1.4 ug/g	19000 ug/g		
L	Last Drum	15000 ug/g	27 ug/g	4800 ug/g		

combined

28,806

13,186

846

Bldg 64 Samples

90 4221

	Sample	Results
M	Silver Plating Solution	CN = 7000 ppm, Ag = 140 g/l
N	Gold Plating Solution 1	CN = 70 ppm, Approx. 350 ppm Au
O	Gold Plating Solution 2	CN = 100 ppm, Approx. 1000 ppm Au
P	Sodium Sulfite	Sodium sulfite and sodium sulfate
Q	Enstrip C	Ammonium persulfate
R	Glycol	IR - Ethylene glycol, 65%
S	HB Powder (Silica)	Silica
T	Stop Off Wax	0.4 ppm Cr VI
U	Degreaser	Water and oil mixture, containing approx. 1% 1,1,1 trichloroethane
V	Unknown black powder	Polyvinyl chloride - vinyl acetate copolymer

WASTE PROFILE SHEETS FOR WASTES REFERRED TO IN TABLE 3-9

I.D. # W52H1B2004
GROUP

WASTE PROFILE SHEETS

General Directions: In order for us to determine whether we can lawfully and safely transport, treat, and dispose of your waste material, we must obtain certain information about the chemical and physical properties of the waste and its chemical composition. Please be complete in your answers; if your response is "none" or "not available", so indicate. Answers must be printed in ink or typewritten and the completed form must be signed. Please make a copy of this form for your records.

(1.) Generator Name: Rock Island Arsenal (RIA) EPA Generator No.: IL5210021833

(2.) Generating Facility Complete Address:
Commander, Rock Island Arsenal, ATTN: SMCRI-SEM (Dr. Shore) Rock Island, IL 61299-5000

(3.) Authorized Company Representative: Dr. William Shore Title: Environmental Coordinator

(4.) Phone Number: (309) 782- 7855

(5.) Emergency Contact RIA Fire Department Title: Shift Chief Phone: (309) 782-5148

(6.) General Description of The Waste: Lead Fluoborate - Liquid
C.C. 7910

(7.) Process Generating Waste: Unused Material

(8.) Anticipated volume 4 [ ] Gallons [ ] Tons [ ] Cubic Yards [X] Drums, or [ ] Other
Per: [ ] Day [ ] Week [ ] Month [X] Year, or [ ] Other

(9.) Waste Properties:

(a.) Vapor pressure (in mm of Hg @ 25 °C)

(b.) Flash Point NA [ ] °F [ ] °C [ ] Closed Cup [ ] Open Cup

(c.) Phases/layers: [X] Single [ ] Bilayered [ ] Multilayered

(d.) Physical State @ 20 °C: [ ] Solid [X] Liquid [ ] Semi-Solid [ ] Powder [ ] Other

(e.) pH (f.) Solubility (g/100g H_2O) @ 20 °C:

(g.) Density: 1.75 [ ] lb./ft.^{3} [ ] lb./yd.^{3} [ ] lb./gal. [X] g/cc

(h.) Odor: [ ] Strong [X] Mild [ ] None

(i.) Reactivity: Water [ ] Yes [X] No Autopolymerizable [ ] Yes [X] No Shock Sensitive [ ] Yes [X] No
Pyrophoric [ ] Yes [X] No Thermally Sensitive [ ] Yes [X] No Explosive [ ] Yes [X] No

(10.) Complete waste composition (with ranges—indicate % or ppm.) Attach Additional Pages if Necessary

ORGANIC	INORGANIC
	Lead Fluoborate

(11.) Sample Included [ ] Yes [X] No MSD # 1682

(12.) Is this waste a "Hazardous Waste" as defined by regulations of the U.S. Environmental Protection Agency pursuant to 40 CFR § 261 of the Resource Conservation and Recovery Act? yes

(13.) Manifest Information

Proper USDOT Shipping Name	USDOT Hazard Class	UN or NA No.	USEPA Haz. Code	USEPA Haz. Waste No. (Type)
Waste Lead Fluoborate	ORM-B	NA2291	R,E	~~D003~~ D008

(14.) This waste contains: Biological Materials [ ] Yes [X] No Pathogens [ ] Yes [X] No Etiological Agents [ ] Yes [X] No
Radioactive Materials [ ] Yes [X] No PCB's [ ] Yes [X] No Dioxin [ ] Yes [X] No

If yes, specify type (if applicable) and concentration:

(15.) Have you obtained toxicity studies of this waste material? NO If so, please attach a copy of the results.

(16.) Required personal protective equipment & procedures: 1

I certify under penalty of law that I personally have examined and am familiar with the waste through analysis and testing or through knowledge of the waste to support this certification that the waste complies with the treatment standards specified in 40 CFR Part 268 Subpart D and all the applicable prohibitions set forth in 40 CFR 268.32 or RCRA section 3004(d). I believe that the information I submitted is true, accurate and complete. I am aware that there are significant penalties for submitting a false certification, including the possibility of a fine and imprisonment.

Generator's Authorized Signatory
William Shore Title Environmental Coordinator Date 2/11/91

HIN 2004 @ 1.00/LB

GROUP _____

WASTE PROFILE SHEETS

General Directions: In order for us to determine whether we can lawfully and safely transport, treat, and dispose of your waste material, we must obtain certain information about the chemical and physical properties of the waste and its chemical composition. Please be complete in your answers; if your response is "none" or "not available", so indicate. Answers must be printed in ink or typewritten and the completed form must be signed. Please make a copy of this form for your records.

(1.) Generator Name: Rock Island Arsenal (RIA) EPA Generator No.: IL5210021833

(2.) Generating Facility Complete Address:
Commander, Rock Island Arsenal, ATTN: SMCRI-SEM (Dr. Shore) Rock Island, IL 61299-5000

(3.) Authorized Company Representative: Dr. William Shore Title: Environmental Coordinator

(4.) Phone Number: (309) 782- 7855

(5.) Emergency Contact RIA Fire Department Title: Shift Chief Phone: (309) 782-5148

(6.) General Description of The Waste: OPKite Stripper A-1
C.C. 7910

(7.) Process Generating Waste: Unused Material

(8.) Anticipated volume 5 [ ] Gallons [ ] Tons [ ] Cubic Yards [X] Drums, or [ ] Other
Per: [ ] Day [ ] Week [ ] Month [X] Year, or [ ] Other

(9.) Waste Properties:

(a.) Vapor pressure (in mm of Hg @ 25°C)

(b.) Flash Point NA [ ] °F [ ] °C [ ] Closed Cup [ ] Open Cup

(c.) Phases/layers: [X] Single [ ] Bilayered [ ] Multilayered

(d.) Physical State @ 20 °C: [X] Solid [ ] Liquid [ ] Semi-Solid [ ] Powder [ ] Other

(e.) pH 11.5 (f.) Solubility (g/100g H_2O) @20°C:

(g.) Density: 8.9 [ ] lb./ft.^{3} [ ] lb./yd.^{3} [X] lb./gal. [ ] g/cc

(h.) Odor: [ ] Strong [X] Mild [ ] None

(i.) Reactivity: Water [ ] Yes [X] No Autopolymerizable [ ] Yes [X] No Shock Sensitive [ ] Yes [X] No
Pyrophoric [ ] Yes [X] No Thermally Sensitive [ ] Yes [X] No Explosive [ ] Yes [X] No

(10.) Complete waste composition (with ranges—indicate % or ppm.) Attach Additional Pages if Necessary

ORGANIC	INORGANIC
Phenylphenol	Disodium phosphate - 10%
	Sodium Tetraborate Pentahydrate

(11.) Sample Included [ ] Yes [X] No

(12.) Is this waste a "Hazardous Waste" as defined by regulations of the U.S. Environmental Protection Agency pursuant to 40 CFR § 261 of the Resource Conservation and Recovery Act? yes

(13.) Manifest Information

Proper USDOT Shipping Name	USDOT Hazard Class	UN or NA No.	USEPA Haz. Code	USEPA Haz. Waste No. (Type)
Waste Corrosive Solid, NOS	Corrosive Material	UN1759	C	D002

(14.) This waste contains: Biological Materials [ ] Yes [X] No Pathogens [ ] Yes [X] No Etiological Agents [ ] Yes [X] No
Radioactive Materials [ ] Yes [X] No PCB's [ ] Yes [X] No Dioxin [ ] Yes [X] No

If yes, specify type (if applicable) and concentration:

(15.) Have you obtained toxicity studies of this waste material? NO If so, please attach a copy of the results.

(16.) Required personal protective equipment & procedures: /

I certify under penalty of law that I personally have examined and am familiar with the waste through analysis and testing or through knowledge of the waste to support this certification that the waste complies with the treatment standards specified in 40 CFR Part 268 Subpart D and all the applicable prohibitions set forth in 40 CFR 268.32 or RCRA section 3004(d). I believe that the information I submitted is true, accurate and complete. I am aware that there are significant penalties for submitting a false certification, including the possibility of a fine and imprisonment.

Generator's Authorized Signatory
William Shore Title Environmental Coordinator Date 2/4/91

SMCRI Form 1184, 1 Nov 90

GROUP _____

WASTE PROFILE SHEETS

General Directions: In order for us to determine whether we can lawfully and safely transport, treat, and dispose of your waste material, we must obtain certain information about the chemical and physical properties of the waste and its chemical composition. Please be complete in your answers; if your response is "none" or "not available", so indicate. Answers must be printed in ink or typewritten and the completed form must be signed. Please make a copy of this form for your records.

(1.) Generator Name: Rock Island Arsenal (RIA) EPA Generator No.: IL5210021833

(2.) Generating Facility Complete Address:
Commander, Rock Island Arsenal, ATTN: SMCRI-SEM (Dr. Shore) Rock Island, IL 61299-5000

(3.) Authorized Company Representative: Dr. William Shore Title: Environmental Coordinator

(4.) Phone Number: (309) 782- 7855

(5.) Emergency Contact RIA Fire Department Title: Shift Chief Phone: (309) 782-5148

(6.) General Description of The Waste: Oakite 90
C.C. 7910

(7.) Process Generating Waste: Unused Material

(8.) Anticipated volume 5 [ ] Gallons [ ] Tons [ ] Cubic Yards [X] Drums, or [ ] Other
Per: [ ] Day [ ] Week [ ] Month [X] Year, or [ ] Other

(9.) Waste Properties:

(a.) Vapor pressure (in mm of Hg @ 25 °C)

(b.) Flash Point [ ] °F [ ] °C [ ] Closed Cup [ ] Open Cup

(c.) Phases/layers: [X] Single [ ] Bilayered [ ] Multilayered

(d.) Physical State @ 20 °C: [ ] Solid [X] Liquid [ ] Semi-Solid [ ] Powder [ ] Other

(e.) pH 13.2 (f.) Solubility (g/100g H_2O) @ 20°C:

(g.) Density: 1.15 [ ] lb./ft.^{3} [ ] lb./yd.^{3} [ ] lb./gal. [X] g/cc

(h.) Odor: [ ] Strong [ ] Mild [X] None

(i.) Reactivity: Water [ ] Yes [X] No Autopolymerizable [ ] Yes [X] No Shock Sensitive [ ] Yes [X] No
Pyrophoric [ ] Yes [X] No Thermally Sensitive [ ] Yes [X] No Explosive [ ] Yes [X] No

(10.) Complete waste composition (with ranges—indicate % or ppm.) Attach Additional Pages if Necessary

ORGANIC	INORGANIC
Sodium Hydroxide - 45-55%	
Sodium carbonate - 5-15%	
Sodium metasilicate pentahydrate - 20-30%	
Tetrasodium pyrophosphate - 5-15%	

(11.) Sample Included [ ] Yes [X] No

(12.) Is this waste a "Hazardous Waste" as defined by regulations of the U.S. Environmental Protection Agency pursuant to 40 CFR § 261 of the Resource Conservation and Recovery Act? yes

(13.) Manifest Information

Proper USDOT Shipping Name	USDOT Hazard Class	UN or NA No.	USEPA Haz. Code	USEPA Haz. Waste No. (Type)
Waste Corrosive Liquid, NOS	Corrosive Material	UN1760	C	D002

(14.) This waste contains: Biological Materials [ ] Yes [X] No Pathogens [ ] Yes [X] No Etiological Agents [ ] Yes [X] No
Radioactive Materials [ ] Yes [X] No PCB's [ ] Yes [X] No Dioxin [ ] Yes [X] No

If yes, specify type (if applicable) and concentration:

(15.) Have you obtained toxicity studies of this waste material? NO If so, please attach a copy of the results.

(16.) Required personal protective equipment & procedures:

I certify under penalty of law that I personally have examined and am familiar with the waste through analysis and testing or through knowledge of the waste to support this certification that the waste complies with the treatment standards specified in 40 CFR Part 268 Subpart D and all the applicable prohibitions set forth in 40 CFR 268.32 or RCRA section 3004(d). I believe that the information I submitted is true, accurate and complete. I am aware that there are significant penalties for submitting a false certification, including the possibility of a fine and imprisonment.

Generator's Authorized Signatory
William Shore Title Environmental Coordinator Date 2/11/91

SMCRI Form 1184, 1 Nov 90

WASTE PROFILE SHEETS

General Directions: In order for us to determine whether we can lawfully and safely transport, treat, and dispose of your waste material, we must obtain certain information about the chemical and physical properties of the waste and its chemical composition. Please be complete in your answers; if your response is "none" or "not available", so indicate. Answers must be printed in ink or typewritten and the completed form must be signed. Please make a copy of this form for your records.

(1.) Generator Name: Rock Island Arsenal (RIA) EPA Generator No.: IL5210021833

(2.) Generating Facility Complete Address:
Commander, Rock Island Arsenal, ATTN: SMCRI-SEM (Dr. Shore) Rock Island, IL 61299-5000

(3.) Authorized Company Representative: Dr. William Shore Title: Environmental Coordinator

(4.) Phone Number: (309) 782- 7855

(5.) Emergency Contact RIA Fire Department Title: Shift Chief Phone: (309) 782-5148

(6.) General Description of The Waste: OAKITE LR3
C.C. 7910

(7.) Process Generating Waste: Metal Finishing

(8.) Anticipated volume 5 [ ] Gallons [ ] Tons [ ] Cubic Yards [X] Drums, or [ ] Other
Per: [ ] Day [ ] Week [ ] Month [X] Year, or [ ] Other

(9.) Waste Properties:

(a.) Vapor pressure (in mm of Hg @ 25 °C) <18

(b.) Flash Point None [ ] °F [ ] °C [ ] Closed Cup [ ] Open Cup

(c.) Phases/layers: [X] Single [ ] Bilayered [ ] Multilayered

(d.) Physical State @ 20 °C: [ ] Solid [X] Liquid [ ] Semi-Solid [ ] Powder [ ] Other

(e.) pH 13 (f.) Solubility (g/100g H_2O) @ 20 °C:

(g.) Density: 1.28 [ ] lb./ft.^{3} [ ] lb./yd.^{3} [ ] lb./gal. [X] g/cc

(h.) Odor: [ ] Strong [X] Mild [ ] None

(i.) Reactivity: Water [ ] Yes [X] No Autopolymerizable [ ] Yes [X] No Shock Sensitive [ ] Yes [X] No
Pyrophoric [ ] Yes [X] No Thermally Sensitive [ ] Yes [X] No Explosive [ ] Yes [X] No

(10.) Complete waste composition (with ranges—indicate % or ppm.) Attach Additional Pages if Necessary

ORGANIC	INORGANIC
Triethanolamine -20-30	
Sodium Hydroxide -15-25	

(11.) Sample Included [ ] Yes [X] No

(12.) Is this waste a "Hazardous Waste" as defined by regulations of the U.S. Environmental Protection Agency pursuant to 40 CFR § 261 of the Resource Conservation and Recovery Act? yes

(13.) Manifest Information

Proper USDOT Shipping Name	USDOT Hazard Class	UN or NA No.	USEPA Haz. Code	USEPA Haz. Waste No. (Type)
Waste Corrosive Liquid, NOS	Corrosive Liquid	UN1760	C	D002

(14.) This waste contains: Biological Materials [ ] Yes [X] No Pathogens [ ] Yes [X] No Etiological Agents [ ] Yes [X] No
Radioactive Materials [ ] Yes [X] No PCB's [ ] Yes [X] No Dioxin [ ] Yes [X] No

If yes, specify type (if applicable) and concentration:

(15.) Have you obtained toxicity studies of this waste material? NO If so, please attach a copy of the results.

(16.) Required personal protective equipment & procedures:

I certify under penalty of law that I personally have examined and am familiar with the waste through analysis and testing or through knowledge of the waste to support this certification that the waste complies with the treatment standards specified in 40 CFR Part 268 Subpart D and all the applicable prohibitions set forth in 40 CFR 268.32 or RCRA section 3004(d). I believe that the information I submitted is true, accurate and complete. I am aware that there are significant penalties for submitting a false certification, including the possibility of a fine and imprisonment.

Generator's Authorized Signatory
William Shore Title: Environmental Coordinator Date: 2/11/91

WASTE PROFILE SHEETS

General Directions: In order for us to determine whether we can lawfully and safely transport, treat, and dispose of your waste material, we must obtain certain information about the chemical and physical properties of the waste and its chemical composition. Please be complete in your answers; if your response is "none" or "not available", so indicate. Answers must be printed in ink or typewritten and the completed form must be signed. Please make a copy of this form for your records.

(1.) Generator Name: Rock Island Arsenal (RIA) EPA Generator No.: IL5210021833

(2.) Generating Facility Complete Address:
Commander, Rock Island Arsenal, ATTN: SMCRI-SEM (Dr. Shore) Rock Island, IL 61299-5000

(3.) Authorized Company Representative: Dr. William Shore Title: Environmental Coordinator

(4.) Phone Number: (309) 782- 7855

(5.) Emergency Contact RIA Fire Department Title: Shift Chief Phone: (309) 782-5148

(6.) General Description of The Waste: Hydrofluoric Acid
C.C. 7910

(7.) Process Generating Waste: Unused Material

(8.) Anticipated volume 5 [ ] Gallons [ ] Tons [ ] Cubic Yards [X] Drums, or [ ] Other
Per: [ ] Day [ ] Week [ ] Month [X] Year, or [ ] Other

(9.) Waste Properties:

(a.) Vapor pressure (in mm of Hg @ 25°C)

(b.) Flash Point [ ] °F [ ] °C [ ] Closed Cup [ ] Open Cup

(c.) Phases/layers: [X] Single [ ] Bilayered [ ] Multilayered

(d.) Physical State @ 20 °C: [ ] Solid [X] Liquid [ ] Semi-Solid [ ] Powder [ ] Other

(e.) pH <2 (f.) Solubility (g/100g H_2O) @ 20°C:

(g.) Density: 1.2 [ ] lb./ft.^{3} [ ] lb./yd.^{3} [ ] lb./gal. [X] g/cc

(h.) Odor: [X] Strong [ ] Mild [ ] None

(i.) Reactivity: Water [ ] Yes [X] No Autopolymerizable [ ] Yes [X] No Shock Sensitive [ ] Yes [X] No
Pyrophoric [ ] Yes [X] No Thermally Sensitive [ ] Yes [X] No Explosive [ ] Yes [X] No

(10.) Complete waste composition (with ranges—indicate % or ppm.) Attach Additional Pages if Necessary

ORGANIC	INORGANIC

(11.) Sample Included [ ] Yes [X] No

(12.) Is this waste a "Hazardous Waste" as defined by regulations of the U.S. Environmental Protection Agency pursuant to 40 CFR § 261 of the Resource Conservation and Recovery Act? yes

(13.) Manifest Information

Proper USDOT Shipping Name	USDOT Hazard Class	UN or NA No.	USEPA Haz. Code	USEPA Haz. Waste No. (Type)
Hydrofluoric Acid Solution	Corrosive Material	UN1790	C	D002

(14.) This waste contains: Biological Materials [ ] Yes [X] No Pathogens [ ] Yes [X] No Etiological Agents [ ] Yes [X] No
Radioactive Materials [ ] Yes [X] No PCB's [ ] Yes [X] No Dioxin [ ] Yes [X] No

If yes, specify type (if applicable) and concentration:

(15.) Have you obtained toxicity studies of this waste material? NO If so, please attach a copy of the results.

(16.) Required personal protective equipment & procedures:

I certify under penalty of law that I personally have examined and am familiar with the waste through analysis and testing or through knowledge of the waste to support this certification that the waste complies with the treatment standards specified in 40 CFR Part 268 Subpart D and all the applicable prohibitions set forth in 40 CFR 268.32 or RCRA section 3004(d). I believe that the information I submitted is true, accurate and complete. I am aware that there are significant penalties for submitting a false certification, including the possibility of a fine and imprisonment.

Generator's Authorized Signatory
William Shore Title Environmental Coordinator Date 2/4/91

I.D. #W5GH151304
GROUP

WASTE PROFILE SHEETS

General Directions: In order for us to determine whether we can lawfully and safely transport, treat, and dispose of your waste material, we must obtain certain information about the chemical and physical properties of the waste and its chemical composition. Please be complete in your answers; if your response is "none" or "not available", so indicate. Answers must be printed in ink or typewritten and the completed form must be signed. Please make a copy of this form for your records.

(1.) Generator Name: Rock Island Arsenal (RIA) EPA Generator No.: IL5210021833

(2.) Generating Facility Complete Address:
Commander, Rock Island Arsenal, ATTN: SMCRI-SEM (Dr. Shore) Rock Island, IL 61299-5000

(3.) Authorized Company Representative: Dr. William Shore Title: Environmental Coordinator

(4.) Phone Number: (309) 782- 7855

(5.) Emergency Contact RIA Fire Department Title: Shift Chief Phone: (309) 782-5148

(6.) General Description of The Waste: Cakite Blackguard
C.C. 7910

(7.) Process Generating Waste: Unused Material

(8.) Anticipated volume 6 [ ] Gallons [ ] Tons [ ] Cubic Yards [X] Drums, or [ ] Other
Per: [ ] Day [ ] Week [ ] Month [X] Year, or [ ] Other

(9.) Waste Properties:

(a.) Vapor pressure (in mm of Hg @ 25°C)

(b.) Flash Point NA [ ] °F [ ] °C [ ] Closed Cup [ ] Open Cup

(c.) Phases/layers: [X] Single [ ] Bilayered [ ] Multilayered

(d.) Physical State @ 20 °C: [ ] Solid [X] Liquid [ ] Semi-Solid [ ] Powder [ ] Other

(e.) pH <1 (f.) Solubility (g/100g H_2O) @ 20°C:

(g.) Density: 1.2 [ ] lb./ft.^{3} [ ] lb./yd.^{3} [ ] lb./gal. [X] g/cc

(h.) Odor: [ ] Strong [X] Mild [ ] None

(i.) Reactivity: Water [ ] Yes [X] No Autopolymerizable [ ] Yes [X] No Shock Sensitive [ ] Yes [X] No
Pyrophoric [ ] Yes [X] No Thermally Sensitive [ ] Yes [X] No Explosive [ ] Yes [X] No

(10.) Complete waste composition (with ranges—indicate % or ppm.) Attach Additional Pages if Necessary

ORGANIC → INORGANIC

Sulfuric acid
Hydrochloric acid

(11.) Sample Included [ ] Yes [ ] No

(12.) Is this waste a "Hazardous Waste" as defined by regulations of the U.S. Environmental Protection Agency pursuant to 40 CFR § 261 of the Resource Conservation and Recovery Act?

(13.) Manifest Information

Proper USDOT Shipping Name	USDOT Hazard Class	UN or NA No.	USEPA Haz. Code	USEPA Haz. Waste No. (Type)
Waste Corrosive Liquid, nos	Corrosive Material	UN1790	C	D002

(14.) This waste contains: Biological Materials [ ] Yes [X] No Pathogens [ ] Yes [X] No Etiological Agents [ ] Yes [X] No
Radioactive Materials [ ] Yes [X] No PCB's [ ] Yes [X] No Dioxin [ ] Yes [X] No

If yes, specify type (if applicable) and concentration:

(15.) Have you obtained toxicity studies of this waste material? NO If so, please attach a copy of the results.

(16.) Required personal protective equipment & procedures:

I certify under penalty of law that I personally have examined and am familiar with the waste through analysis and testing or through knowledge of the waste to support this certification that the waste complies with the treatment standards specified in 40 CFR Part 268 Subpart D and all the applicable prohibitions set forth in 40 CFR 268.32 or RCRA section 3004(d). I believe that the information I submitted is true, accurate and complete. I am aware that there are significant penalties for submitting a false certification, including the possibility of a fine and imprisonment.

Generator's Authorized Signatory
William Shore Title Environmental Coordinator Date 2/11/91

GROUP _____

WASTE PROFILE SHEETS

General Directions: In order for us to determine whether we can lawfully and safely transport, treat, and dispose of your waste material, we must obtain certain information about the chemical and physical properties of the waste and its chemical composition. Please be complete in your answers; if your response is "none" or "not available", so indicate. Answers must be printed in ink or typewritten and the completed form must be signed. Please make a copy of this form for your records.

(1.) Generator Name: Rock Island Arsenal (RIA) EPA Generator No.: IL5210021833

(2.) Generating Facility Complete Address:
Commander, Rock Island Arsenal, ATTN: SMCRI-SEM (Dr. Shore) Rock Island, IL 61299-5000

(3.) Authorized Company Representative: Dr. William Shore Title: Environmental Coordinator

(4.) Phone Number: (309) 782- 7855

(5.) Emergency Contact: RIA Fire Department Title: Shift Chief Phone: (309) 782-5148

(6.) General Description of The Waste: OAKITE Chromicoat L-25
C.C. 7910

(7.) Process Generating Waste: Unused Material

(8.) Anticipated volume: 2 [X] Gallons [ ] Tons [ ] Cubic Yards [ ] Drums, or [ ] Other
Per: [ ] Day [ ] Week [ ] Month [X] Year, or [ ] Other

(9.) Waste Properties:

(a.) Vapor pressure (in mm of Hg @ 25°C)

(b.) Flash Point: None [ ] °F [ ] °C [ ] Closed Cup [ ] Open Cup

(c.) Phases/layers: [X] Single [ ] Bilayered [ ] Multilayered

(d.) Physical State @ 20 °C: [ ] Solid [X] Liquid [ ] Semi-Solid [ ] Powder [ ] Other

(e.) pH: 1.6 (f.) Solubility (g/100g H_2O) @ 20°C:

(g.) Density: 9.5 [ ] lb./ft.^{3} [ ] lb./yd.^{3} [X] lb./gal. [ ] g/cc

(h.) Odor: [ ] Strong [ ] Mild [X] None

(i.) Reactivity: Water [ ] Yes [X] No Autopolymerizable [ ] Yes [X] No Shock Sensitive [ ] Yes [X] No
Pyrophoric [ ] Yes [X] No Thermally Sensitive [ ] Yes [X] No Explosive [ ] Yes [X] No

(10.) Complete waste composition (with ranges—indicate % or ppm.) Attach Additional Pages if Necessary

ORGANIC	INORGANIC
Nitric acid - 5%	Chromic acid - 10%
Hydrofluoric acid - 5%	

(11.) Sample Included [ ] Yes [X] No

(12.) Is this waste a "Hazardous Waste" as defined by regulations of the U.S. Environmental Protection Agency pursuant to 40 CFR § 261 of the Resource Conservation and Recovery Act? yes

(13.) Manifest Information

Proper USDOT Shipping Name	USDOT Hazard Class	UN or NA No.	USEPA Haz. Code	USEPA Haz. Waste No. (Type)
Waste Corrosive Liquid, NOS	Corrosive Material	UN1760	CE	D002 D007

(14.) This waste contains: Biological Materials [ ] Yes [X] No Pathogens [ ] Yes [X] No Etiological Agents [ ] Yes [X] No
Radioactive Materials [ ] Yes [X] No PCB's [ ] Yes [X] No Dioxin [ ] Yes [X] No

If yes, specify type (if applicable) and concentration:

(15.) Have you obtained toxicity studies of this waste material? NO If so, please attach a copy of the results.

(16.) Required personal protective equipment & procedures: 1

I certify under penalty of law that I personally have examined and am familiar with the waste through analysis and testing or through knowledge of the waste to support this certification that the waste complies with the treatment standards specified in 40 CFR Part 268 Subpart D and all the applicable prohibitions set forth in 40 CFR 268.32 or RCRA section 3004(d). I believe that the information I submitted is true, accurate and complete. I am aware that there are significant penalties for submitting a false certification, including the possibility of a fine and imprisonment.

Generator's Authorized Signatory
William Shore Title: Environmental Coordinator Date: 2/11/94

SMCRI Form 1184, 1 Nov 90

I.D. # 1052HIB2004
GROUP

WASTE PROFILE SHEETS

General Directions: In order for us to determine whether we can lawfully and safely transport, treat, and dispose of your waste material, we must obtain certain information about the chemical and physical properties of the waste and its chemical composition. Please be complete in your answers; if your response is "none" or "not available", so indicate. Answers must be printed in ink or typewritten and the completed form must be signed. Please make a copy of this form for your records.

(1.) Generator Name: Rock Island Arsenal (RIA) EPA Generator No.: IL5210021833

(2.) Generating Facility Complete Address:
Commander, Rock Island Arsenal, ATTN: SMCRI-SEM (Dr. Shore) Rock Island, IL 61299-5000

(3.) Authorized Company Representative: Dr. William Shore Title: Environmental Coordinator

(4.) Phone Number: (309) 782- 7855

(5.) Emergency Contact RIA Fire Department Title: Shift Chief Phone: (309) 782-5148

(6.) General Description of The Waste: Sodium Bichromate (dichromate) C.C. 9064

(7.) Process Generating Waste: Unused Material

(8.) Anticipated volume 3 [ ] Gallons [ ] Tons [ ] Cubic Yards [ ] Drums, or [ ] Other
Per: [ ] Day [ ] Week [ ] Month [ ] Year, or [ ] Other

(9.) Waste Properties:

(a.) Vapor pressure (in mm of Hg @ 25°C)

(b.) Flash Point NA [ ] °F [ ] °C [ ] Closed Cup [ ] Open Cup

(c.) Phases/layers: [X] Single [ ] Bilayered [ ] Multilayered

(d.) Physical State @ 20 °C: [X] Solid [ ] Liquid [ ] Semi-Solid [ ] Powder [ ] Other

(e.) pH NA (f.) Solubility (g/100g H_2O) @ 20°C:

(g.) Density: 1.2 [ ] lb./ft.^{3} [ ] lb./yd.^{3} [ ] lb./gal. [ ] g/cc

(h.) Odor: [ ] Strong [ ] Mild [X] None

(i.) Reactivity: Water [ ] Yes [X] No Autopolymerizable [ ] Yes [X] No Shock Sensitive [ ] Yes [X] No
Pyrophoric [ ] Yes [X] No Thermally Sensitive [ ] Yes [X] No Explosive [ ] Yes [X] No

(10.) Complete waste composition (with ranges—indicate % or ppm.) Attach Additional Pages if Necessary

ORGANIC

INORGANIC
Sodium bichromate

(11.) Sample Included [ ] Yes [X] No

(12.) Is this waste a "Hazardous Waste" as defined by regulations of the U.S. Environmental Protection Agency pursuant to 40 CFR § 261 of the Resource Conservation and Recovery Act? yes

(13.) Manifest Information

Proper USDOT Shipping Name	USDOT Hazard Class	UN or NA No.	USEPA Haz.Code	USEPA Haz. Waste No. (Type)
Waste Sodium Dichromate	ORM-A	NA1479	E	D007

(14.) This waste contains: Biological Materials [ ] Yes [X] No Pathogens [ ] Yes [X] No Etiological Agents [ ] Yes [X] No
Radioactive Materials [ ] Yes [X] No PCB s [ ] Yes [X] No Dioxin [ ] Yes [X] No

If yes, specify type (if applicable) and concentration:

(15.) Have you obtained toxicity studies of this waste material? NO If so, please attach a copy of the results.

(16.) Required personal protective equipment & procedures: /

I certify under penalty of law that I personally have examined and am familiar with the waste through analysis and testing or through knowledge of the waste to support this certification that the waste complies with the treatment standards specified in 40 CFR Part 268 Subpart D and all the applicable prohibitions set forth in 40 CFR 268.32 or RCRA section 3004(d). I believe that the information I submitted is true, accurate and complete. I am aware that there are significant penalties for submitting a false certification, including the possibility of a fine and imprisonment.

Generator's Authorized Signatory
William S. Shore Title Environmental Coordinator Date 2/25/91

HIN 2004 @ 1/00

GROUP _____

WASTE PROFILE SHEETS

General Directions: In order for us to determine whether we can lawfully and safely transport, treat, and dispose of your waste material, we must obtain certain information about the chemical and physical properties of the waste and its chemical composition. Please be complete in your answers; if your response is "none" or "not available", so indicate. Answers must be printed in ink or typewritten and the completed form must be signed. Please make a copy of this form for your records.

(1.) Generator Name: Rock Island Arsenal (RIA) EPA Generator No.: IL5210021833

(2.) Generating Facility Complete Address:
Commander, Rock Island Arsenal, ATTN: SMCRI-SEM (Dr. Shore) Rock Island, IL 61299-5000

(3.) Authorized Company Representative: Dr. William Shore Title: Environmental Coordinator

(4.) Phone Number: (309) 782- 7855

(5.) Emergency Contact RIA Fire Department Title: Shift Chief Phone: (309) 782-5148

(6.) General Description of The Waste: Nickel Acetate
C.C. 7910

(7.) Process Generating Waste: Unused Material

(8.) Anticipated volume 2 [ ] Gallons [ ] Tons [ ] Cubic Yards [X] Drums, or [ ] Other
Per: [ ] Day [ ] Week [ ] Month [X] Year, or [ ] Other

(9.) Waste Properties:

(a.) Vapor pressure (in mm of Hg @ 25°C) NA

(b.) Flash Point NA [ ] °F [ ] °C [ ] Closed Cup [ ] Open Cup

(c.) Phases/layers: [X] Single [ ] Bilayered [ ] Multilayered

(d.) Physical State @ 20 °C: [X] Solid [ ] Liquid [ ] Semi-Solid [ ] Powder [ ] Other

(e.) pH (f.) Solubility (g/100g H_2O) @ 20°C:

(g.) Density: 1.74 [ ] lb./ft.^{3} [ ] lb./yd.^{3} [ ] lb./gal. [X] g/cc

(h.) Odor: [ ] Strong [ ] Mild [X] None

(i.) Reactivity: Water [ ] Yes [X] No Autopolymerizable [ ] Yes [X] No Shock Sensitive [ ] Yes [X] No
Pyrophoric [ ] Yes [X] No Thermally Sensitive [ ] Yes [X] No Explosive [ ] Yes [X] No

(10.) Complete waste composition (with ranges—indicate % or ppm.) Attach Additional Pages if Necessary

ORGANIC INORGANIC
Nickel Acetate

(11.) Sample Included [ ] Yes [X] No

(12.) Is this waste a "Hazardous Waste" as defined by regulations of the U.S. Environmental Protection Agency pursuant to 40 CFR § 261 of the Resource Conservation and Recovery Act? NO

(13.) Manifest Information

Proper USDOT Shipping Name	USDOT Hazard Class	UN or NA No.	USEPA Haz. Code	USEPA Haz. Waste No. (Type)
Non-regulated	NA	NA	NA	NA

(14.) This waste contains: Biological Materials [ ] Yes [X] No Pathogens [ ] Yes [X] No Etiological Agents [ ] Yes [X] No
Radioactive Materials [ ] Yes [X] No PCB's [ ] Yes [X] No Dioxin [ ] Yes [X] No

If yes, specify type (if applicable) and concentration:

(15.) Have you obtained toxicity studies of this waste material? NO If so, please attach a copy of the results.

(16.) Required personal protective equipment & procedures: 4

I certify under penalty of law that I personally have examined and am familiar with the waste through analysis and testing or through knowledge of the waste to support this certification that the waste complies with the treatment standards specified in 40 CFR Part 268 Subpart D and all the applicable prohibitions set forth in 40 CFR 268.32 or RCRA section 3004(d). I believe that the information I submitted is true, accurate and complete. I am aware that there are significant penalties for submitting a false certification, including the possibility of a fine and imprisonment.

Generator or Authorized Signatory
William Shore Title Environmental Coordinator Date 2/11/91

Contract 91

GROUP

WASTE PROFILE SHEETS

General Directions: In order for us to determine whether we can lawfully and safely transport, treat, and dispose of your waste material, we must obtain certain information about the chemical and physical properties of the waste and its chemical composition. Please be complete in your answers; if your response is "none" or "not available", so indicate. Answers must be printed in ink or typewritten and the completed form must be signed. Please make a copy of this form for your records.

(1.) Generator Name: Rock Island Arsenal (RIA) EPA Generator No.: IL5210021833

(2.) Generating Facility Complete Address:
Commander, Rock Island Arsenal, ATTN: SMCRI-SEM (Dr. Shore) Rock Island, IL 61299-5000

(3.) Authorized Company Representative: Dr. William Shore Title: Environmental Coordinator

(4.) Phone Number: (309) 782- 7855

(5.) Emergency Contact RIA Fire Department Title: Shift Chief Phone: (309) 782-5148

(6.) General Description of The Waste: Hydrochloric Acid - spent
C.C. 7910

(7.) Process Generating Waste: Metal Stripping SLUDGE

(8.) Anticipated volume 55 [ ] Gallons [ ] Tons [ ] Cubic Yards [X] Drums, or [ ] Other
Per: [ ] Day [ ] Week [ ] Month [X] Year, or [ ] Other

(9.) Waste Properties:

(a.) Vapor pressure (in mm of Hg @ 25°C)

(b.) Flash Point 4 [ ] °F [ ] °C [ ] Closed Cup [ ] Open Cup

(c.) Phases/layers: [X] Single [ ] Bilayered [ ] Multilayered

(d.) Physical State @ 20 °C: [ ] Solid [X] Liquid [ ] Semi-Solid [ ] Powder [ ] Other

(e.) pH <1 (f.) Solubility (g/100g H_2O) @20°C:

(g.) Density: 11.5 [ ] lb./ft.^{3} [ ] lb./yd.^{3} [X] lb./gal. [ ] g/cc

(h.) Odor: [ ] Strong [X] Mild [ ] None

(i.) Reactivity: Water [ ] Yes [X] No Autopolymerizable [ ] Yes [X] No Shock Sensitive [ ] Yes [X] No
Pyrophoric [ ] Yes [X] No Thermally Sensitive [ ] Yes [X] No Explosive [ ] Yes [X] No

(10.) Complete waste composition (with ranges—indicate % or ppm.) Attach Additional Pages if Necessary

ORGANIC

INORGANIC
Fe - 50,000 ppm / Ni - 490 ppm
Cd - 450 ppm / Zn - 510 ppm
CR - 9200 ppm / Cu - 1300 ppm
Mn - 990 ppm
Pb - 55 ppm

(11.) Sample Included [X] Yes [X] No Lab analysis attached

(12.) Is this waste a "Hazardous Waste" as defined by regulations of the U.S. Environmental Protection Agency pursuant to 40 CFR § 261 of the Resource Conservation and Recovery Act? yes

(13.) Manifest Information

Proper USDOT Shipping Name	USDOT Hazard Class	UN or NA No.	USEPA Haz. Code	USEPA Haz. Waste No. (Type)
Waste Corrosive Liquid, NOS	Corrosive	UN1760	C,T	D002

D006, D007, D008

(14.) This waste contains: Biological Materials [ ] Yes [X] No Pathogens [ ] Yes [X] No Etiological Agents [ ] Yes [X] No
Radioactive Materials [ ] Yes [X] No PCB's [ ] Yes [X] No Diazin [ ] Yes [X] No

If yes, specify type (if applicable) and concentration:

(15.) Have you obtained toxicity studies of this waste material? no If so, please attach a copy of the results.

(16.) Required personal protective equipment & procedures: /

I certify under penalty of law that I personally have examined and am familiar with the waste through analysis and testing or through knowledge of the waste to support this certification that the waste complies with the treatment standards specified in 40 CFR Part 268 Subpart D and all the applicable prohibitions set forth in 40 CFR 268.32 or RCRA section 3004(d). I believe that the information I submitted is true, accurate and complete. I am aware that there are significant penalties for submitting a false certification, including the possibility of a fine and imprisonment.

Generator's Authorized Signatory
William Shore Title Environmental Coordinator Date 2/5/91

TCT Note: Not clear which Drum Control NOS. This includes.

HIN 1304 - 0.75/LB
25 Feb 91

MANIFESTS FOR WASTES REFERRED TO IN TABLE 3-10

27 JUN 1991

HAZARDOUS WASTE MANIFEST

Department of the Environment
Hazardous & Solid Waste Management Administration
2500 Broening Highway Baltimore, MD 21224

Hazardous Waste Program

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039 Expires 9/30/91

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. IL521002183 Manifest Document No. 91058
2. Page 1 of 1
Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Rock Island Arsenal
Building 154
Rock Island, IL 61299-5000

4. Generator's Phone (309) 782-1619

A. State Manifest Document Number MDC 0298527
B. State Generator's ID 1618130001
C. State Transporter's ID HWH [illegible] DC [illegible]
D. Transporter's Phone 513-222-1109
E. State Transporter's ID HWH [illegible] DC [illegible]
F. Transporter's Phone
G. State Facility ID
H. Facility's Phone 301 685 3910

5. Transporter 1 Company Name: Leston Corporation
6. US EPA ID Number: OHD072864390
7. Transporter 2 Company Name: LESTON CORPORATION
8. US EPA ID Number: OHD072864390

9. Designated Facility Name and Site Address
Clean Harbors of Baltimore, Inc.
1910 Russell Street
Baltimore, MD 21230

10. US EPA ID Number: MDD980555189

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	Waste No.
a. RQ, Waste Corrosive Liquid, n.o.s. WCF 15 mm ✓ Corrosive Material UN1760 (D002, D008, D002) (Lead Chromic Sludge)	003	DM	02034	P	D002
b. Non-Regulated Liquid ✓ (Water/Glycerol)	001	DF	00526	P	NR
c. RQ, Hazardous Waste Solid, n.o.s. ✓ ORM-E NA9189 (D006, D007, D008) (Plating Waste)	006	DM	03043	P	D006
d. RQ, Hazardous Waste Solids, n.o.s. ✓ ORM-E NA9189 (D007) (Wooden Pallets/ Oil Dry Chromic Acid)	007	DM	00968	P	D007

J. Additional Descriptions for Materials Listed Above
a. T S 524753 RCR 60 RCR 31
b. 524753 RCR 4 NR
c. T S 524754 RCR 31
d. 524754

K. Handling Codes for Wastes Listed Above
a. c.

15. Special Handling Instructions and Additional Information
Emergency Phone: (309) 788-6534
DLA200-91-D-0007; D.O. #5, Item 66-68/D.O. #11, Items 35, 45-50, 71-76, 82

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations, and Maryland Statutes or Regulations.
If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: DAVID A. FOSS / William L. Lafrenz
Signature: David A. Foss / William L. Lafrenz
Month Day Year: 05 15 91

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: JIM VITATE
Signature: Jim Vitate
Date: 05 15 91

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name: ROGER COTTRELL
Signature: Roger Cottrell
Date: 05 29 91

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: James N. Dilts Jr.
Signature: James N. Dilts Jr.
Date: Month Day Year

EPA Form 8700-22 (9-88)

MDC 0298527

GENERATOR

TRANSPORTER

FACILITY

Call the National Response Center at (301) 624-8802 and the MDE at (301) 631-3386. Nights and Holidays at (301) 974-3551

DNR
MICHIGAN DEPARTMENT OF NATURAL RESOURCES

DO NOT WRITE IN THIS SPACE
ATT. ☐ DIS. ☐ REJ. ☐ PR. ☐

Required under authority of Act 64, P.A. 1979, as amended and Act 136, P.A. 1969.

Failure to file is punishable under section 299.548 MCL or Section 10 of Act 136, P.A. 1969.

5 JUL 1991

Please print or type.

Form Approved. OMB No. 2050-0039 Expires 9-30-91

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. IL5210021833 Manifest Document No. 9105
2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Rock Island Arsenal
Building 154
Rock Island, IL 61299-5000

4. Generator's Phone (309) 782-1619

A. State Manifest Document Number MI 2309496

B. State Generator's ID 1618130000

5. Transporter 1 Company Name: Laston Corporation
6. US EPA ID Number: OHD072864390

C. State Transporter's ID

D. Transporter's Phone 513-222-1109

7. Transporter 2 Company Name
8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address
Michigan Disposal, Inc.
49350 North I-94 Service Drive
Belleville, MI 48111

10. US EPA ID Number: MID000724831

G. State Facility's ID

H. Facility's Phone 313-699-7120

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID NUMBER). HM	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	1. Waste No.	N/H
a. X NA9189 (D006, D007, D008) (Rifle Range Sand)	012	DM	09114	P	D006	H
b. X NA9189 (D006, D007) (Spill Oil Dry)	011	DM	04110	P	D006	H
c.						
d.						

J. Additional Descriptions for Materials Listed Above
a) [illegible] EGB # ; Also D007, D008
b) [illegible] EGB # 31; Also D007
Emergency #: [illegible]

K. Handling Codes for Wastes Listed Above
a/ /
b/ /
c/ /
d/ /

15. Special Handling Instructions and Additional Information
[illegible]; D.O. # 11, Items 60-70, 77-88

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name [illegible] Signature [illegible] Date Month Day Year 05 15 91

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name [illegible] Signature [illegible] Date Month Day Year 05 15 91

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name Signature Date Month Day Year

19. Discrepancy Indication Space
#92091 #9302

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name [illegible] Signature [illegible] Date Month Day Year 06 28 91

ALL SPILLS MUST BE REPORTED TO THE MICHIGAN POLLUTION EMERGENCY ALERTING SYSTEM, IN MICHIGAN AT 1-800-292-4706 OR OUT OF STATE AT 517-373-7660 AND THE NATIONAL RESPONSE CENTER AT 1-800-424-8802 24 HOURS PER DAY

EPA Form 8700-22 (Rev. 9/88) PR-5110

ANALYSIS OF WATER IN AOC 86

U.S. GOVERNMENT PRINTING OFFICE

PAGE OF

ROCK ISLAND ARSENAL

REQUEST FOR TEST AND LABORATORY RESULTS

LAB. NUMBER	DATE RECEIVED:	PURCHASE ORDER NUMBER:	ITEM NUMBER:	DATE:
92-0640	2/27/92			2/27/92

QA NUMBER:	EX. ORDER NUMBER:	REQN NUMBER:	CHARGE TO:
			003820-1210835

CHECK APPLICABLE BLOCK:

☐ PARTICULATE CONTAMINATION ☒ CHEMICAL ANALYSIS ☐ FAILURE ANALYSIS ☐ OTHER

MATERIAL: Please analyze water sample from the pit in Bldg 64 Plating shop. Analyze for CR, Cd & Pb and check pH.

SIZE:	QTY:	SPEC NUMBER:	REC'D FROM:	INSP/PHONE:
	1		Fran W-Pleman	7907

pH : 6.5

Total Metals (mg/L)

Cr	Cd	Lead
0.12	<0.05	0.15

AOC 86 Secondary Pit (Southwest Corner)

cm 3/2/92

LABORATORY RECOMMENDATION: ☐ Accept ☐ Reject ☒ For Information Only

(SIGNATURE)

APPENDIX F

ILLINOIS EPA LETTER
DATED DECEMBER 27, 1991

217/782-6762

Log No. C-600
Received: September 30, 1991

Refer to: 1618130001 -- Rock Island County
Rock Island Arsenal
IL52100221833
RCRA Closure - Building 64

December 27, 1991

Commander
Rock Island Arsenal
Attn: SMCRI-CO (Dr. David Foss)
Rock Island, Illinois 61299-5000

Dear Dr. Foss:

The closure plan for the Building 64 hazardous waste tank storage (S02) and treatment (T01) units at the above referenced facility, submitted by Rock Island Arsenal (RIA) and prepared by TCT-St. Louis, has been reviewed. Due to the following deficiencies the plan has been disapproved:

1. RIA identifies Building 64 as a hazardous waste management unit in this closure plan. While the Agency agrees with RIA's approach for the closure of Building 64 in its entirety rather than in a piecemeal manner, it is still necessary to identify the specific areas were hazardous waste was managed and describe how it was managed, as this information is very important in determining the required closure activities for the building. A description of how the material in Building 64 was managed following cessation of the electroplating operations in 1988 must be included in the closure plan. This description must include as much information as possible regarding (1) the location of all tanks/vats and secondary containment systems associated with the electroplating operations; the capacity of all tanks/vats and secondary containmer systems; (3) the amount of material currently present each tank/vat (the plan indicates that some but not the material once present in these units was removed the characteristics and regulatory status of the m currently or once present in each tank/vat (e.g., the material be considered hazardous waste, when of?); (5) when and how the material in each tan transferred within and/or out of the building; the material in each tank/vat was ultimately (e.g., treatment/storage/disposal within the within the facility and/or off-site).

2. DETAILED DRAWING OF THE UNIT(S) - Submit plan view drawings of the unit(s), showing dimensions, appurtenant structures and relationship to other points or structures on the facility property, at a minimum. The scale of the drawing(s) must be specified.

   RIA has provided several scale drawings of Building 64 which represent its configuration in the past. However, the present configuration of the building cannot be determined from the drawings provided. Specifically, the drawings provided do not appear to represent the present condition of Building 64 based on a comparison of Figure 3-1 (a sketch of Building 64) and the scale drawings provided. RIA must identify which of the scale drawings, if any, represent the present condition of the structure. RIA must provide additional scale drawing(s), as necessary, of Building 64 which represent its present configuration and identify, at a minimum:

   - the location of all secondary containment systems, their drainage pathways, all associated piping, curbs, sumps, floor drains, etc.;

   - the location of all vats, plating tanks and associated equipment and piping, containers, and air pollution control equipment.

3. STORAGE AREA PAVEMENT/SURFACE DESCRIPTION - Provide a description of the type of pavement surface in Building 64, its structural integrity (i.e., cracks, joints, deterioration) and any containment structures (curbs) present. If containment structures are not present, describe the drainage features of the Building 64 and its surroundings, and identify where spilled waste would flow. Additional sampling and analysis must be proposed if there are no containment structures present to contain any possible releases which may have occurred in the building. The locations of any cracks, joints, deterioration, and containment structures (curbs), etc. must be shown on a scale drawing.

4. LIST OF HAZARDOUS WASTE - Provide a complete, detailed list of hazardous wastes (chemical name, EPA hazardous waste number, and hazardous constituents) treated, stored or disposed of at each unit. Trade names or common names should not be used when generic chemical names are available. Provide the maximum inventory of wastes treated, stored or disposed of at each unit/area.

   Based on the description of the operations that occurred at Building 64, it would appear that the following wastestreams may have also been generated, stored, and/or

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treated at Building 64 in addition to those identified in the plan:

- F007 -- Spent cyanide plating bath solutions from electroplating operations.

- F008 -- Plating bath solutions from the bottom of plating baths from electroplating operations where cyanides are used in the process.

- F009 -- Spent stripping and cleaning bath solutions from electroplating operations where cyanides are used in the process.

- F010 -- Quenching bath residues from oil baths from metal heat treating operations where cyanides are used in the process.

- F011 -- Spent cyanide solutions from salt bath pot cleaning from metal heat treating operations.

5. DECONTAMINATION OF TANKS, STRUCTURES AND SOILS (35 IAC 725.212 and 725.214) - The owner/operator must provide a detailed description of all efforts to clean or decontaminate hazardous waste and its residues and constituents from tanks, paved areas, containment areas, equipment, structures, pipes, pumps, sumps and any other appurtenances to the hazardous waste management unit. The description must include the method of decontamination for equipment and structures of the building. This would include the removal of the "Category I through V" waste from the structures (see pages 3-8 through 3-10 of the September 1991 closure plan). A description must also be provided of how waste material (rinse water, etc.) from the decontamination efforts will be collected, stored, and/or treated. Please note that residue from listed hazardous waste must be managed as a hazardous waste unless it is delisted under the provisions of 35 IAC 720.120 and 720.122 or is exempt under 721.103(a)(2)(D).

   Section 11 of the plan indicates that liquid waste from Building 64 may be treated in the on-site wastewater treatment plants (Building 65 and/or 212). RIA must demonstrate that these treatment plants are permitted to treat this waste; at a minimum this would include copies of any pertinent permit(s) for the treatment plants.

6. SAMPLING PLAN AND ANALYTICAL METHODS - Closure of hazardous waste management units must include sampling of soil to demonstrate clean closure or to determine the nature and extent of soil contamination. If possible, your sampling program should be extensive enough to

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determine the lateral and vertical extent of contamination to the level of the Practical Quantitation Limit (PQL) identified in Test Methods for Evaluating Solid Wastes, Third Edition (SW-846) for the constituents of the waste(s) managed.

All samples which are to be taken must be handled in accordance with 40 CFR, Part 261, Appendix III and the soil volatile sampling procedures which are included in the Agency's closure plan instructions as Attachment 7. The analytical methods which will be used must be specified and must be EPA-approved.

The following comments specifically pertain to the proposed sampling plan:

a. RIA must provide a detailed description of how the material which is generated as a result of the closure of Building 64 will be properly characterized as hazardous or non-hazardous. This would include characterization of the Category I through V waste defined in Section 3.2 of the closure plan.

b. Pages 3-10 and 3-11 of the closure plan refer to "Sampling Plans 1, 2, and 3" that are said to be included in Sections 11 and 13 of the plan. These sampling plans are not included in these sections.

c. All analyses for metals should be conducted on the extract from the TCLP test (Method 1311 of SW-846).

d. The Agency cannot evaluate the adequacy of the proposed soil sampling locations without the additional information identified in Item 3 above. RIA may want to delay proposing soil sampling locations until the equipment has been removed from the building and decontamination of the building has taken place. At that time any cracks, joints, deterioration, etc. should be easily identified.

e. Page 13-5 of the closure plan indicates that soil samples will be composited from each soil boring location. The compositing of soil samples to demonstrate "clean" closure is not acceptable. At a minimum, one soil sample from each proposed boring should be collected from the backfill/natural soil interface to a depth of 6 inches as measured from the interface for analysis to demonstrate clean closure.

7. <u>DESCRIPTION OF EQUIPMENT CLEANING</u> - Any equipment, including heavy earth-movers or smaller tools, should be scraped and washed to remove waste residues. In addition,

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the residues generated by this cleaning effort should be managed as hazardous waste. The procedures for equipment cleaning and residue management should be described in the closure plan. The plan only identifies the procedures for the cleanup of the soil sampling equipment.

8. The Category I through V wastes described in Section 3.2 of the closure plan must be handled as hazardous waste until: (1) adequate analytical testing and/or generator knowledge demonstrates that the waste does not meet the definition of hazardous waste as defined in 35 IAC Part 721 or (2) the material, (concrete, piping, sheet metal, etc.), has been decontaminated in a manner which has been approved in writing by the Agency specifically for this site.

9. The Agency will not evaluate the adequacy of the groundwater monitoring wells, identified in Section 13.2 of the closure plan, until it is determined that groundwater has been impacted by Building 64.

10. The Agency will not evaluate the adequacy of any contaminated soil removal plan until it is determined that removal of contaminated soil is necessary.

11. STATEMENT OF FACILITY STATUS AFTER CLOSURE - The closure plan should clearly state the status of the hazardous waste facility after closure is completed. For example, it should state if a storage facility is to be operated as a generator (less-than-90-day storage), and it should describe whether closure is partial or complete. If the closure is only partial in nature, the plan should name the units covered by the closure plan as well as those remaining in operation. The plan should also indicate whether the facility will continue to be a generator and transporter (if applicable).

    Indicate which of the following categories describes the intended use of the facility:

    a. No treatment, storage or disposal will occur at this facility.

    b. Disposal will continue at this facility.

    c. This facility will continue to store and/or treat hazardous wastes.

    d. Less than 1,000 kg/month will be generated, and storage will be for less than 90 days.

    e. The facility will generate and store more than 1,000

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kg/month for less than 90 days.

f. The facility will generate and store more than 1,000 kg/month for more than 90 days.

g. The facility will generate and store more than 100 kg/month, but less than 1,000 kg/month for less than 180 days (270 days if applicable).

h. The facility will be exempt from treatment storage and disposal (TSD) regulation under RCRA.

i. The facility will be a transporter of hazardous waste.

12. SOIL CLEANUP LEVELS - Clean closure of a storage/treatment unit requires removal or decontamination of all wastes, leachate, liners and soils (including groundwater) contaminated with waste or leachate that pose a substantial present or potential threat to human health or the environment. The owner/operator has the options of removing or decontaminating soil to Agency approved detection limits/background levels of the contaminant or to propose a site-specific, health-based cleanup level.

A site-specific cleanup level proposal must document that the contaminants left in the soil will not adversely impact any environmental media (groundwater, surface water or atmosphere), and that direct contact through dermal exposure, inhalation or ingestion will not result in a threat to human health or the environment. USEPA is currently developing a guidance document for clean closure. Until this document becomes available, owner/operators should refer to 52 FR 8706 (March 19, 1987) for demonstration references. If a model will be used to justify site-specific cleanup criteria, site conditions must match the assumptions of the model. Toxicity information for hazardous constituents (35 IAC Part 721, Appendix H) can be obtained from EPA's Office of Solid Waste, Characterization and Assessment Branch, 202/382-4761. Soil cleanup levels, as well as groundwater cleanup levels, will depend to a great extent on the existing and potential use of groundwater and/or surface water in the area surrounding the facility. Information and documentation regarding existing and potential use of groundwater and/or surface water in the area surrounding the facility should be provided to justify a proposed site-specific, health-based cleanup level. More specifically, the owner/operator should contact the IEPA Division of Public Water Supplies (DPWS) at 217/785-8653, Illinois Department of Public Health (Springfield) at 217/782-5830, the Illinois State Water Survey (Champaign)

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at 217/333-8497, and the Illinois State Geological Survey (Champaign) at 217/333-4747 to gather information to determine the existing and potential type and extent of groundwater and/or surface water use in the area. Local water use restrictions or zoning rules that restrict or regulate the use of groundwater and/or surface water should also be identified.

The proposed cleanup level will not be evaluated until results of analyses conducted on soil samples from beneath/around Building 64 are available for review. Such results must be obtained utilizing procedures contained in an approved closure plan.

13. SCHEDULE FOR CLOSURE - 35 IAC 725.213 requires the owner/operator treat, remove or dispose of all hazardous waste in accordance with the approved closure plan within 90 days after receiving the final volume of hazardous waste or 90 days after approval of the closure plan by the IEPA. The owner/operator must complete all closure activities in accordance with the approved closure plan within 180 days after receiving the final volume of hazardous waste or 180 days after approval of the closure plan by the IEPA.

    Closures requiring time periods longer than the above, including extensions after the closure plan approval, must be reviewed and approved by the IEPA (refer to 725.213). RIA must provide justification regardingo the need for additional time to start and complete the closure of Building 64.

    The plan should contain a timetable which shows all critical dates for closure activities, including waste removal, sampling, soil removal, critical points when the independent engineer or his representative will be present, backfilling, survey plat preparation, independent engineer's certification and other relevant activities. This time table should generally start at the point of approval or some other definable date (i.e., award of contract, etc.), and not rely on calendar dates.

14. CERTIFICATION STATEMENT - All partial or final (full) closures of hazardous waste management units must be certified by both the owner/operator and an independent registered professional engineer (725.215). The closure plan must include a statement acknowledging this requirement. Certification is due sixty (60) days after completion of closure and no more than 240 days from the date of closure plan approval (unless otherwise approved).

    The Illinois Professional Engineering Act (Ill. Rev.

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Stat., Ch. 111, par. 5101 et. seq.) requires that any person who practices professional engineering in the State of Illinois or implies that he (she) is a professional engineer must be registered under the Illinois Professional Engineering Act (par. 5101, Sec. 1). Therefore, any certification or engineering services which are performed for a closure plan in the State of Illinois must be done by an Illinois P.E. The closure plan must include a statement acknowledging this requirement.

Plans and specifications, designs, drawings, reports, and other documents rendered as professional engineering services, and revisions of the above must be sealed and signed by a professional engineer in accordance with par. 5119, sec. 13.1 of the Illinois Professional Engineering Act.

The independent engineer should be present during all major closure activities. These might include soil sampling, soil removal, backfilling, decontamination, final cover placement, etc. The frequency of inspections by the independent engineer must be sufficient to determine the adequacy of each critical activity.

Pursuant to 35 IAC 725.212(d)(4), you must submit a complete, revised closure plan (i.e., not just revised or additional pages) (one original and 3 copies) within thirty (30) days which adequately responds to the above noted comments. Failure to submit a revised plan within thirty (30) days of the date of your receipt of this letter will be considered non-compliance with the interim standards of 35 IAC, Part 725, Subpart G--Closure and Post-closure and Subpart H--Financial Requirements.

Should you have any questions regarding this matter, please contact Kevin D. Lesko at 217/782-6762.

Very truly yours,

Lawrence W. Eastep, P.E., Manager
Permit Section
Division of Land Pollution Control

LWE:KDL

cc: Peoria Region
Division File - RCRA Closure
USEPA Region V -- George Hamper
Planning and Reporting Section -- Joe Miller

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ROCK ISLAND ARSENAL
FINAL CLOSURE PLAN
FOR THE
HAZARDOUS WASTE ACCUMULATION AREA
IN THE
SIMULATION TEST BRANCH

Prepared by William S. Shore
Dr. William S. Shore
Environmental Coordinator
SMCRI-SEM

Approved by Richard W. Bregard
Richard W. Bregard
Colonel, U.S. Army
Commanding

RECEIVED
JUL 30 1990
IEPA-DLPC

A. List of Maps

1. Map A Map of Rock Island Arsenal
2. Map B Simulation and Test Area
3. Map C Soil Survey Map of Rock Island
4. Map D Area Topographic Map
5. Map E U.S. Geological Survey Map
6. Map F Area Storm Drains and Sanitary System

B. List of Exhibits

1. Exhibit 1 Original RCRA Part A Application, 1980
2. Exhibit 2 Current RCRA Part A Application, 1990
3. Exhibit 3 Building 33 Detail Drawing
4. Exhibit 4 Daily and Associates, Engineers, Inc., Appendix A
5. Exhibit 5 Daily and Associates, Engineers, Inc., Appendix B

C. List of Tables

1. Table I Rock Island Arsenal Soils (U.S. Soil Conservation Service Classifications)

ROCK ISLAND ARSENAL
FINAL CLOSURE PLAN FOR
THE BUILDING 33, ACCUMULATION AREA (AA)
IN THE SIMULATION AND TEST BRANCH

1. PURPOSE AND DEFINITIONS: The purpose of the plan is to provide for the closure of the building 33 Hazardous Waste Accumulation Area as requested in the Illinois EPA Division of Land Pollution Control, Peoria, IL, letter dated June 19, 1990.

2. DESCRIPTION OF THE FACILITY: The Simulation and Test Branch function test weapons systems including machine guns, howitzer recoil mechanisms, small arms, and some components manufactured under SIC Code 3489.

3. DESCRIPTION OF WASTE MANAGEMENT UNITS: The facility generated used cleaning compounds, cleaning solvents, hydraulic oil, small arms ammunition, and nitrocellulose propellants.

The Branch is located at the east end of Arsenal Island and covers about 20 acres (see Map A). The accumulation area comprised 143 sq. ft. and was situated under an overhanging portion of the building (See below).

The wastes managed at the site were as follows:

RIA Waste Name	USEPA Process Code	USEPA Hazardous Waste Number	Line in RCRA RCRA Part A Permit Application	
			1980	1990
Degreaser Solvent (used 1,1,1-Trichloroethane)	S01-220 gal	F001	Line 1	Line 5
Petroleum Naphtha, used	S01-110 gal	D001	NA	Line 16
Range Dust (containing lead)	S01-330 gal	D008	NA	Line 4

Time period of use extended from 1980 to 1990.

The facility is located in east end of Arsenal Island.

See Maps A and B.

The soil types are shown on Map C.

The topography is shown in Map D with contour intervals of one foot.

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The facility will be closed by removing all hazardous waste, which was done April 90, and final closure will occur by performing all tests necessary to determine whether any release of hazardous waste has taken place and contaminated the environment. Remedial actions will be planned as needed and submitted to IEPA when testing is completed as scheduled below, paragraph 8.

A working copy of the original Part A permit application is Exhibit 1. The only response from the USEPA was to inform the Environmental Coordinator of the correct USEPA number as IL5210021833. A version of the Part A application was issued along with the Part B application 1 Apr 90 and the IEPA responded that the only deficiency was that the document required original signature. The enclosed Part A application has the original signature (Attachment 2).

4. MAP OF FACILITY: U.S. Geological Survey Map is provided in Map E.

5. DETAILED DRAWING OF HAZARDOUS WASTE MANAGEMENT UNIT(S): Building 33 with the facility outline is shown in Exhibit 3.

6. STORAGE AREA PAVEMENT DESCRIPTION: The storage area pavement is typical concrete floor. It is structurally unsound with cracks from side to side and a twelve inch wide patch cutting across diagonally from south to east. There is concrete surrounding all sides with bituminous pavement ten feet on the north with a slot trench running down the center to a storm drainage system and eventually to the river. The storm drainage and sanitary system are shown in Map F. The area to the east is concrete for about twenty feet and then it is bituminous pavement. The entire area is flat except on the north where it slopes to the slot trench. Daily & Associates, Peoria, Il, has proposed a test plan as shown in Exhibit 4.

7. INVENTORY OF HAZARDOUS WASTE: The wastes stored at the site are listed in paragraph 3 above. The maximum inventory at the site of any one type of waste would have been nine 55 gallon drums (495 gallons) or any combination of the three types of wastes listed totaling 495 gallons. However, Rock Island Arsenal policy was to allow no more than three drums of any given type of waste to accumulate prior to ordering the removal of the waste to the Part A facility, building 242. As a further constraint on the inventory of waste retained at the site, generation rates were less than 55 gallons per month for each type of waste. Consequently, inventories were always less than 495 gallons total throughout the lifetime of the facility. As stated in paragraph 3, above, all waste has been removed form the site in preparation for completing final closure actions.

8. SCHEDULE FOR CLOSURE: As stated above, all waste has been removed from the site. The Rock Island Arsenal, on approval of the closure plan will

issue contracts specifying the program of testing prepared by Daily and Associates. Award of the contract will require about 90 days. As no remedial action is anticipated, performance will take place within the required 180 days, and certification included.

However, if remedial action proves to be necessary additional time will be needed to prepare the specification, award a contract, and allow a contractor to perform the work. In which case, Rock Island Arsenal will submit a proposal to revise the schedule.

Rock Island Arsenal will keep the Agency informed of progress in the project so that their site surveillance may take place, if desired.

9. AIR EMISSIONS: Containers of all wastes were kept closed at all times except when the drums were being filled. Consequently, air emissions were minimized.

10. PERSONNEL SAFETY AND FIRE PROTECTION: The Rock Island Arsenal Safety Office and Fire Department maintain surveillance over all its employee activities and the performance of all contractors.

11. DECONTAMINATION OF TANKS, STRUCTURES AND SOILS: No tanks were involved at the building 33 facility. Structure and soils decontamination will take place as needed based upon the contractor test results.

12. SOIL CLEANUP LEVELS: See Exhibit 4, paragraph 1.

13. SAMPLING PLAN AND ANALYTICAL METHODS: See Exhibit 4, paragraph 2.

14. CONTAMINATED SOIL REMOVAL: See Exhibit 4, paragraph 3.

15. DISPOSAL OF HAZARDOUS WASTES AND CLEANUP RESIDUES: See Exhibit 4, paragraph 4.1.

16. DISPOSAL UNIT CLOSURES: This requirement is not applicable as there is no waste left in place.

17. DESCRIPTION OF EQUIPMENT CLEANING: See Exhibit 4, paragraph 4.3.

18. SIGNATORY REQUIREMENT: The Rock Island Arsenal's Commander has directed the Environmental Coordinator, Dr. William Shore, review the closure requirements and prepare the closure plan. See the approval block on the title page.

19. CERTIFICATIONS AND REPORTS: The certification and reports will be part of the scope of work for all contracts prepared in conjunction with the final closure.

20. STATUS OF FACILITY AFTER CLOSURE: There are no future plans to utilize the facility in the management of hazardous waste at the Simulation and Test Branch.

21. PART A MODIFICATIONS AND WITHDRAWALS: No modifications or withdrawals are required as the Part A never included the Branch facility. The waste generation will continue as long as the Branch operates and a new site has been selected as an Accumulation Area.

22. POST-CLOSURE CARE: As the Rock Island Arsenal plans a clean closure, no post closure surveillance is planned.

23. LOCATION DOCUMENTATION FOR DISPOSAL UNITS: This section is not applicable as it concerns disposal sites.

24. SUBMITTAL OF CLOSURE PLAN AND CERTIFICATIONS: Submittals will be made as needed after analysis and remedial action if any is complete.

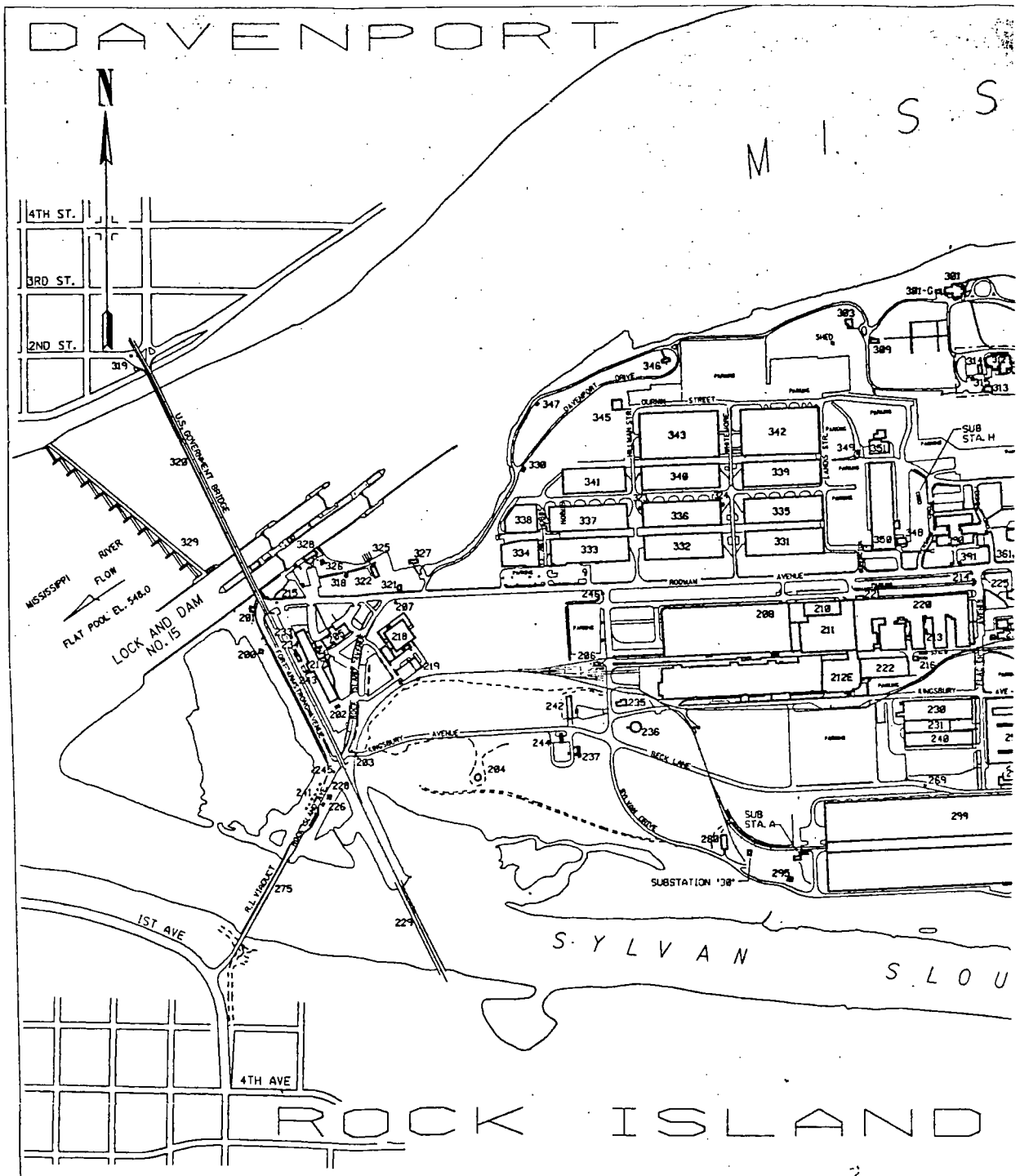
25. AGENCY REVIEW OF CLOSURE PLAN: Response will be made to all Agency recommendations.

26 CLOSURE REGULATIONS: Not applicable, building 33 is not an interim status facility.

27. CLOSURE PLAN MODIFICATIONS AND TIME EXTENSIONS DURING THE CLOSURE PERIOD: Requests will be made, if needed.

28. AGENCY REVIEW OF CLOSURE CERTIFICATIONS: Certifications will be issued as needed.

29. CERTIFICATION REGARDING POTENTIAL RELEASES FROM SOLID WASTE MANAGEMENT UNITS: The certification will be included as part of the final closure. In the meantime, Rock Island Arsenal has a Spill Contingency Plan and a Spill Prevention Control and Countermeasures Plan in effect, which will provide control over all releases of hazardous substances.



INDEX TO BUILDING.

1		25	LIGHT GUN PLT.	53	GROUND STORGE TANK	81G	DET. GARAGE	98G1	DET. STOR. BLDG	123	• PISTOL RANGE
2	F.H. - COLONEL	26	GEN.PURP.MAGAZINE	54	• DIESEL OIL STO.	82	• F.H. LT.COL. & MJ.	98G2	DET. STOR. BLDG	124	• PUBLIC TOILET
2G	DET. GARAGE	27	GEN.PURP.MAGAZINE	55	WATER PUMP	83	WAITING SHELTER	99	F.H. N.C.O. ENLISTED	125	FLAGSTAFF
3	F.H. - COLONEL	28	GEN.PURP.MAGAZINE	56	GEN. INSTR. BLDG.	84	TENNIS CT	99G1	DET. STOR. BLDG	126	FLAGSTAFF
3G	DET. GARAGE	29	SEWAGE PUMP	57	STONE BRIDGE	85	• F.H. LT.COL. & MJ.	99G2	DET. STOR. BLDG	127	FLAGSTAFF
4	F.H. - GENERAL	30	F.H. - COLONEL	58	• SMALL ARMS PLANT	86	• BACH. ENLISTED QT.	100	F.H. N.C.O. ENLISTED	128	RECREATION BLDG
4G	DET. GARAGE	30G	DET. GARAGE	59	• SMALL ARMS PLANT	87	PUBLIC TOILET	00G1	DET. STOR. BLDG	129	MONUMENT
5		31	F.H. - COLONEL	60	ADMIN. GEN. PURPOSE	88	SOFTBALL FIELD	00G2	DET. STOR. BLDG	130	TRAP RANGE
5G		31G		61	ADMIN. GEN. PURPOSE	89	FACILITY SIGN	101		131	WEAPONS QUAL. ASSU
6	F.H. - COLONEL	32	HEAVY GUN PLANT	62	ADMIN. GEN. PURPOSE	90	GEN. INSTR. BLDG.	102	ADMIN. GEN. PURPOSE	132	• OPERATIONS BLDG
6G	DET. GARAGE	33	HEAVY GUN PLANT	63		91	GAS DISTR. STATION	103	ADMIN. GEN. PURPOSE	133	• F.E. MAINT. SHOP
7	F.H. - COLONEL	34	GEN.PURP.MAGAZINE	64	SMALL ARMS PLANT	92	F.H. LT.COL. & MJ.	104	ADMIN. GEN. PURPOSE	134	PLAY GROUND
7G	DET. GARAGE	35	LIGHT GUN PLANT	65	INDUST. WASTE TRMNT PLT.	92G1	DET. STOR. BLDG	105	GEN. PURP. WHSE	135	• FLAM. MAT. STOR. HS
8	TENNIS COURT	36	SNACK BAR	66	SMALL ARMS PLANT	92G2	DET. STO. BLDG	106	FOUNDRY	136	MONUMENT
9	PUMP STATION	37	PUBLIC TOILET	67	SMALL ARMS PLANT	93	F.H. LT.COL. & MJ.	107	SELF SERV SUPPLY CTR.	137	• SALV. & SUR. BLDG
10	SOCCER FIELD	38	HEATING PLANT OIL	68	ADMIN. GEN. PURPOSE	93G1	DET. STOR. BLDG	108	ADMIN. GEN. PURPOSE	138	SALV. & SUR. BLDG
11	COMMUNITY CENTER	39	HEAVY GUN PLANT	69	• SMALL ARMS PLANT	93G2	DET. STOR. BLDG	109	ADMIN. GEN. PURPOSE	139	F.E. MAINT. SHOP
12	PLAYGROUND	40	GYMNASTICATOR BLDG.	70	• F.H. LT.COL. & MJ.	94	F.H. LT.COL. & MJ.	110	ADMIN. GEN. PURPOSE	140	GEN. PURP. WHSE
13	COMM. CNTR STORAGE BLDG	41	FACILITY SIGN	70G	• DET. GARAGE	94G1	DET. STOR. BLDG	111	FLAGPOLE	141	• TARGET STORAGE
14	GOLF CLUB SHELTER	42	SLUDGE BED	71		94G2	DET. STOR. BLDG	112	APPL. INST. BLDG	142	
15		43	HEAVY GUN PLANT	72	SMALL ARMS PLANT	95	F.H. C.G. - W.O.	113	SAND BIN	143	
16		44	HEAVY GUN PLANT	73	A/C PLANT	95G1	DET. STOR. BLDG	114	A/C PLANT	144	FLAM. MAT. STOR. HS
17	FUTURE RESTROOM	45	HEAVY GUN PLANT	74		95G2	DET. STOR. BLDG	115	• ROD-GUN CLUB	145	SALV. & SUR. BLDG.
18	MONUMENT	46	HEAVY GUN PLANT	75	RESTAURANT - KITCHEN	96	F.H. C.G. - W.O.	116	• SAL. & SUR. PROP.	146	TECH. TRAINING CENT
19	MONUMENT	47	SENTRY STATION - MOLINE	76	PLAYGROUND	96G1	DET. STOR. BLDG	117	CEMETERY STOR. BLDG.	147	BASKETBALL COURT
20		48	MOLINE BRIDGE	77	PLAYGROUND	96G2	DET. STOR. BLDG	118	NAT. CEMETERY OFFICE	148	SOFTBALL FIELD
21	GOLF CLUB MAINT. BLDG.	49	SEWAGE PUMP	78	PLAYGROUND	97	F.H. C.G. - W.O.	119	CEMETERY STOR. BLDG.	149	
22	GOLF CLUB MAINT. BLDG.	50	WATER TREATMENT PLT.	79	WAITING SHELTER	97G1	DET. STOR. BLDG	120	FLAM. MAT. STO. HSE	150	
23	ADMIN. GEN. PURPOSE	51	DEEP WELL & PUMP STA.	80	WAITING SHELTER	97G2	DET. STOR. BLDG	121	PUBLIC TOILET	151	GAS DIST. STATION
24	WATER PUMP	52	F.E. STOR. HOUSE	81	F.H. - COLONEL	98	F.H. N.C.O. ENLISTED	122	• TARGET STORAGE	152	

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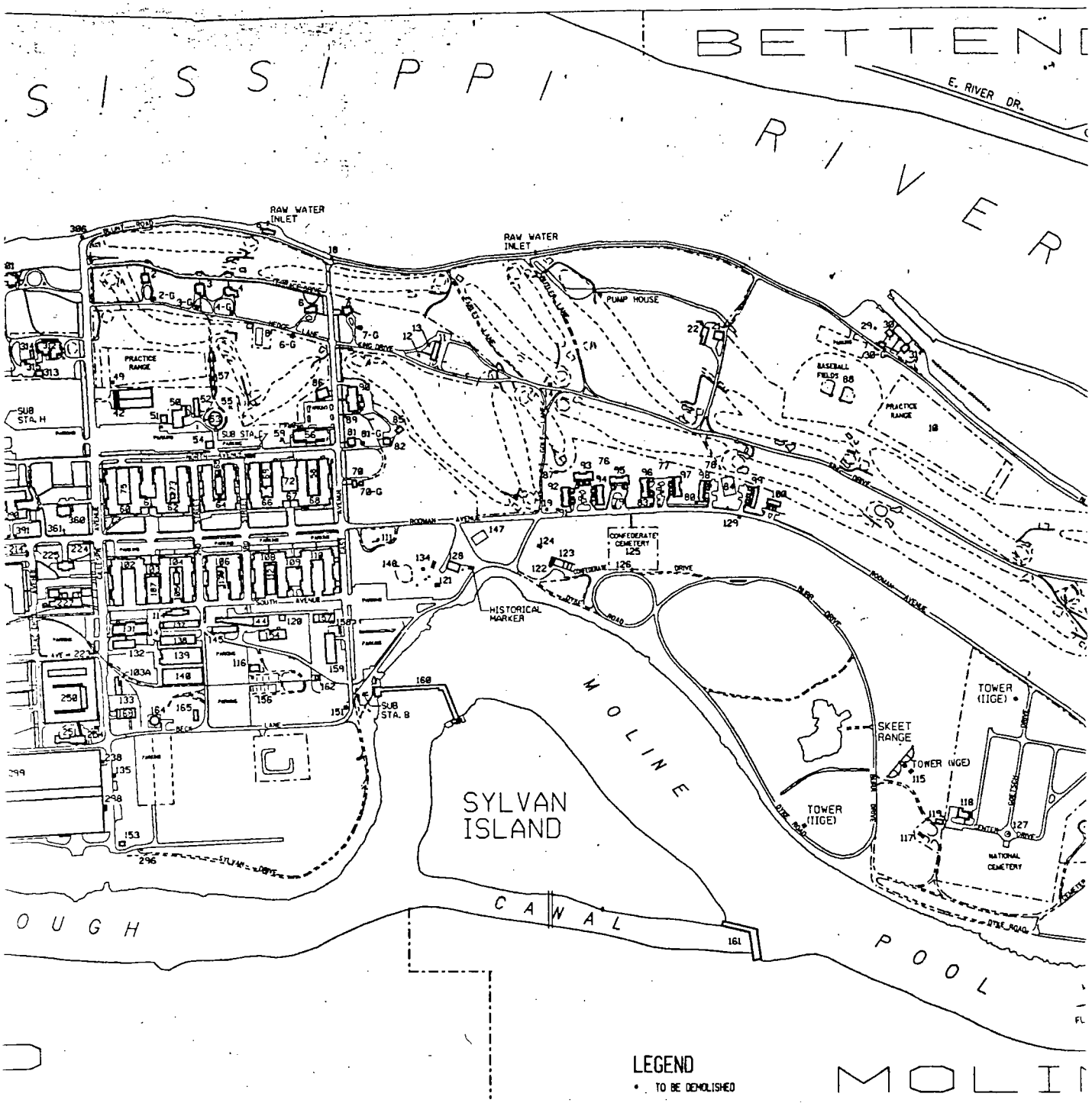
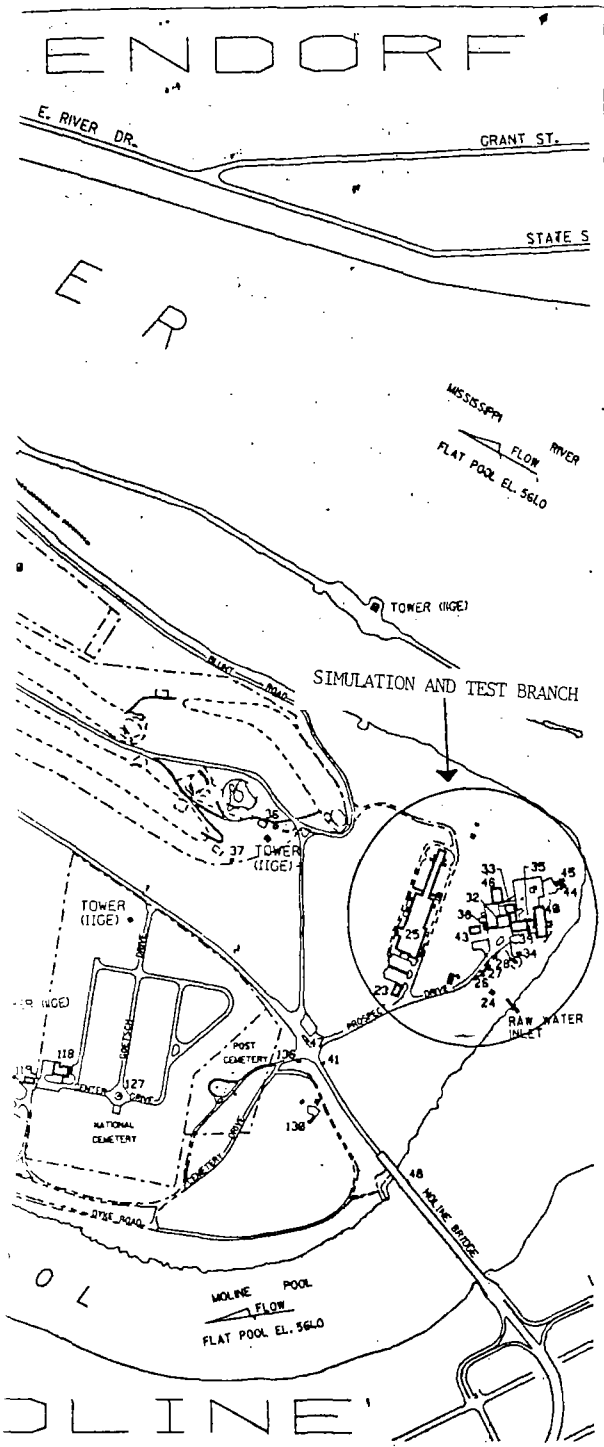


DINGS & MISCELLANEOUS STRUCTURES

STOL RANGE	153	GEN. PURP.WHSE	183		213	DEEP WELL	243	FLAM. MAT. STORAGE C.O.E.	273		302		332
LIC TOILET	154	SALV. & SUR. BLDG.	184		214	SENTRY STATION	244	GAS STATION	274		303	• F.H. C.G. - W.O.	333
AGSTAFF	155		185		215	SENTRY STATION	245		275	ROCK ISLAND VIADUCT	304		334
AGSTAFF	156	• OPEN STORAGE	186		216	LIQ. STORAGE NON-PROP.	246	SENTRY STATION	276		305		335
AGSTAFF	157	VEHICLE GAMAGE	187		217	GARAGE C.O.E.	247		277		306	MON. - SUN DIAL	336
EATION BLDG	158	• FILLING STATION	188		218	NAVY/MC RESERVE CENTER	248		278		307		337
ONUMENT	159	VCHL MAINT. SHOP	189		219	NAVY/MC GARAGE	249		279		308		338
AP RANGE	160	HYDRO-ELECTRIC PLANT	190		220	MACHINE SHOP	250	HEAVY GUN PLANT	280	GEN. PURP. MAGAZINE	309	• DET. GARAGE	339
NS QUAL. ASSUR.	161	MOLINE DAM	191		221	PLATFORM SCALE	251	• VCHL MAINT. SHOP	281		310		340
ATIONS BLDG	162	VEH. WASH FACILITY	192		222	FORGE SHOP	252		282		311		341
MAINT. SHOP	163		193		223	SENTRY STATION	253		283		312	GOLF CLUB HOUSE	342
AY GROUND	164	SALT STORAGE	194		224	WAITING SHELTER	254	• OPEN STORAGE	284		313	GOLF CLUB MAINT. BLDG.	343
. MAT. STOR. HSE	165	• FLAM. MAT. STORAGE	195		225	FIRE STATION	255		285		314	BATH HOUSE	344
MONUMENT	166		196		226	MONUMENT	256		286		315	GOLF CLUB MAINT. BLDG.	345
V. & SUR. BLDG	167		197		227	CENTRAL HEAT PLT. C.F.	257		287		316		346
V. & SUR. BLDG.	168	CENTRAL HEAT PLT. C.F.	198		228	RAILROAD BRIDGE	258		288		317		347
. MAINT. SHOP	169		199		229	RAILROAD BRIDGE	259		289		318	RADIO TOWER C.O.E.	348
N. PURP. WHSE	170		200	FORT ARMSTRONG	230	WELD SHOP	260		290		319	SENTRY STATION	349
GET STORAGE	171		201	SENTRY STATION	231	WELD SHOP	261		291		320	GOVERMENT BRIDGE	350
	172		202	GAS STATION C.O.E.	232		262		292		321	POLICE STATION	351
	173		203	R.R. VIADUCT	233	FLAM. MAT. STORAGE C.O.E.	263		293		322	MAINT. BLDG. C.O.E.	352
. MAT. STOR. HSE	174		204	SEWAGE PUMP STA.	234	A/C PLANT C.O.E.	264		294		323	FLAM. MAT. STO. HSE	353
V. & SUR. BLDG.	175		205	CLOCK TOWER BLDG. C.O.E.	235	• WASH. VEH. COVERED	265		295	PUMP HOUSE STA.	324	FLAM. MAT. STO. HSE	354
TRAINING CENTER	176		206	• SCALE HOUSE	236	ELEV. WATER STOR. TANK	266		296	SENTRY STATION	325	BOAT HOUSE C.O.E.	355
KETBALL COURT	177		207	FACILITY SIGN	237	PROPANE STORAGE	267		297		326	OIL STORAGE TANKS C.O.E.	356
FTBALL FIELD	178		208	HEAVY GUN PLANT	238	SENTRY STATION	268		298	SCALE	327	DOCK	357
	179		209		239	POL FACILITY	269	SENTRY STATION	299	GEN. PURP. WHSE	328	VISITORS CENTER C.O.E.	358
	180		210	MACHINE SHOP	240	FABRICATION SHOP	270		300		329	LOCK & DAM 15	359
DIST. STATION	181		211	MACHINE SHOP	241	MONUMENT	271		301	FH - GENERAL	330	PUMP HOUSE STA.	360
	182		212	FOUNDRY WELD PLAT	242	GEN. PURP. WHSE	272		301G	DET. GARAGE	331	GEN. PURP. WHSE	361



	332	GEN. PURP. WHSE	362	
• F.H. C.G. - W.O.	333	EXCHANGE MAIN RETAIL	363	
	334	COMMISSARY	364	
	335	GEN. PURP. WHSE	365	
MON. - SUN DIAL	336	GEN. PURP. WHSE	366	
	337	GEN. PURP. WHSE	367	
	338	GEN. PURP. WHSE	368	
• DET. GARAGE	339	GEN. PURP. WHSE	369	
	340	GEN. PURP. WHSE	370	
	341	GEN. PURP. WHSE	371	
GOLF CLUB HOUSE	342	• GEN. PURP. WHSE	372	
GOLF CLUB MAINT. BLDG.	343	• GEN. PURP. WHSE	373	
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GOLF CLUB MAINT. BLDG.	345	HELI-PORT	375	
	346	DAVENPORT HOUSE	376	
	347	BRIDGE MONUMENT	377	
RADIO TOWER C.O.E.	348	AIR CONDITIONING PLT.	378	
SENTRY STATION	349	FLAM. MAT. STO. HSE	379	
GOVERMENT BRIDGE	350	ADMIN. GEN. PURPOSE	380	
POLICE STATION	351	CRAFT SHOP	381	
MAINT. BLDG. C.O.E.	352		382	
FLAM. MAT. STO. HSE	353		383	
FLAM. MAT. STO. HSE	354		384	
BOAT HOUSE C.O.E.	355		385	
OIL STORAGE TANKS C.O.E.	356		386	
DOCK	357		387	
VISITORS CENTER C.O.E.	358		388	
LOCK & DAM 15	359		389	
PUMP HOUSE STA.	360	F.H. LT.COL. & MJ.	390	P
GEN. PURP. WHSE	361	FLAGSTAFF	391	

A

ROCK ISLAND ARSENAL

ROCK ISLAND, ILLINOIS 61299-5000

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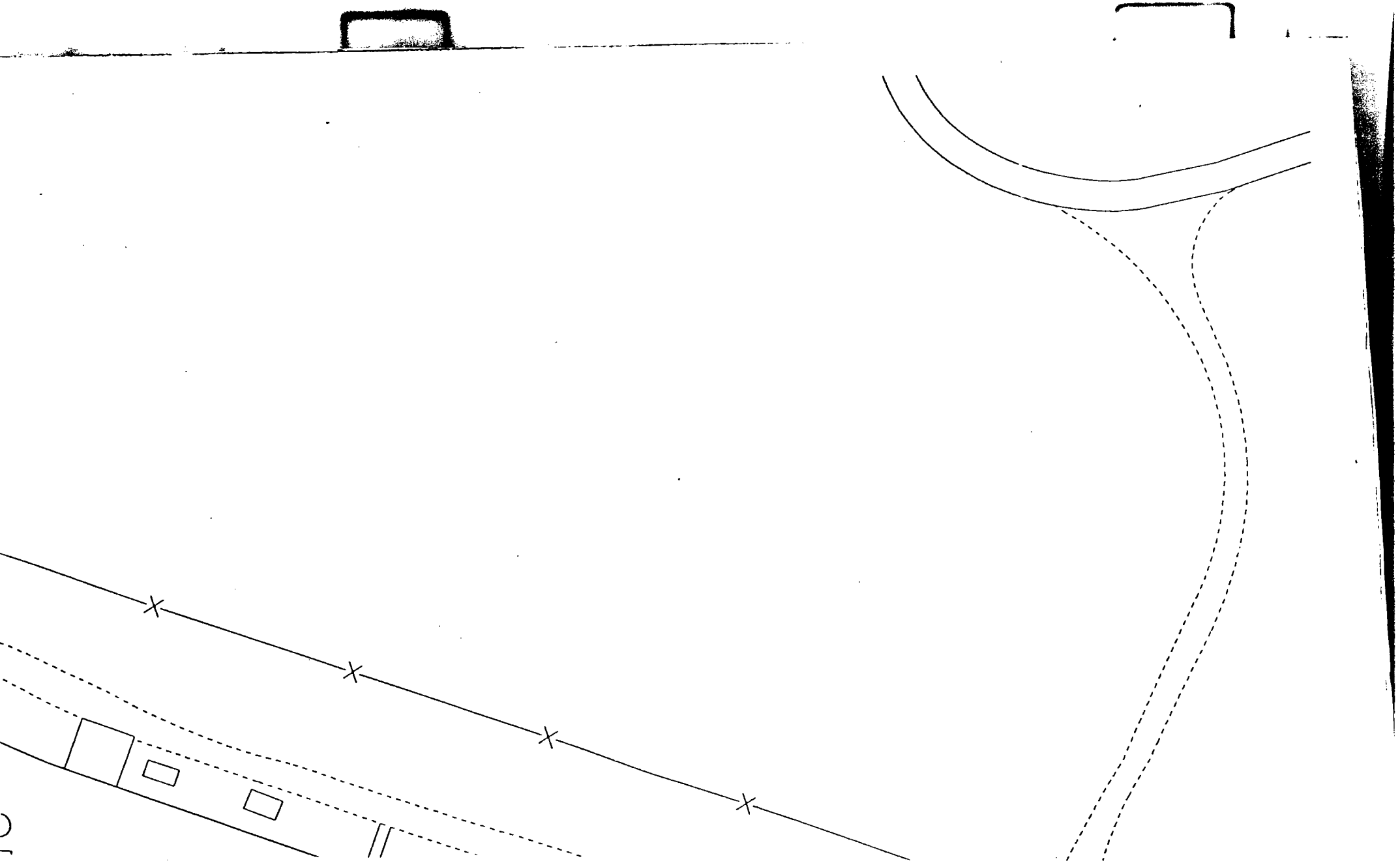
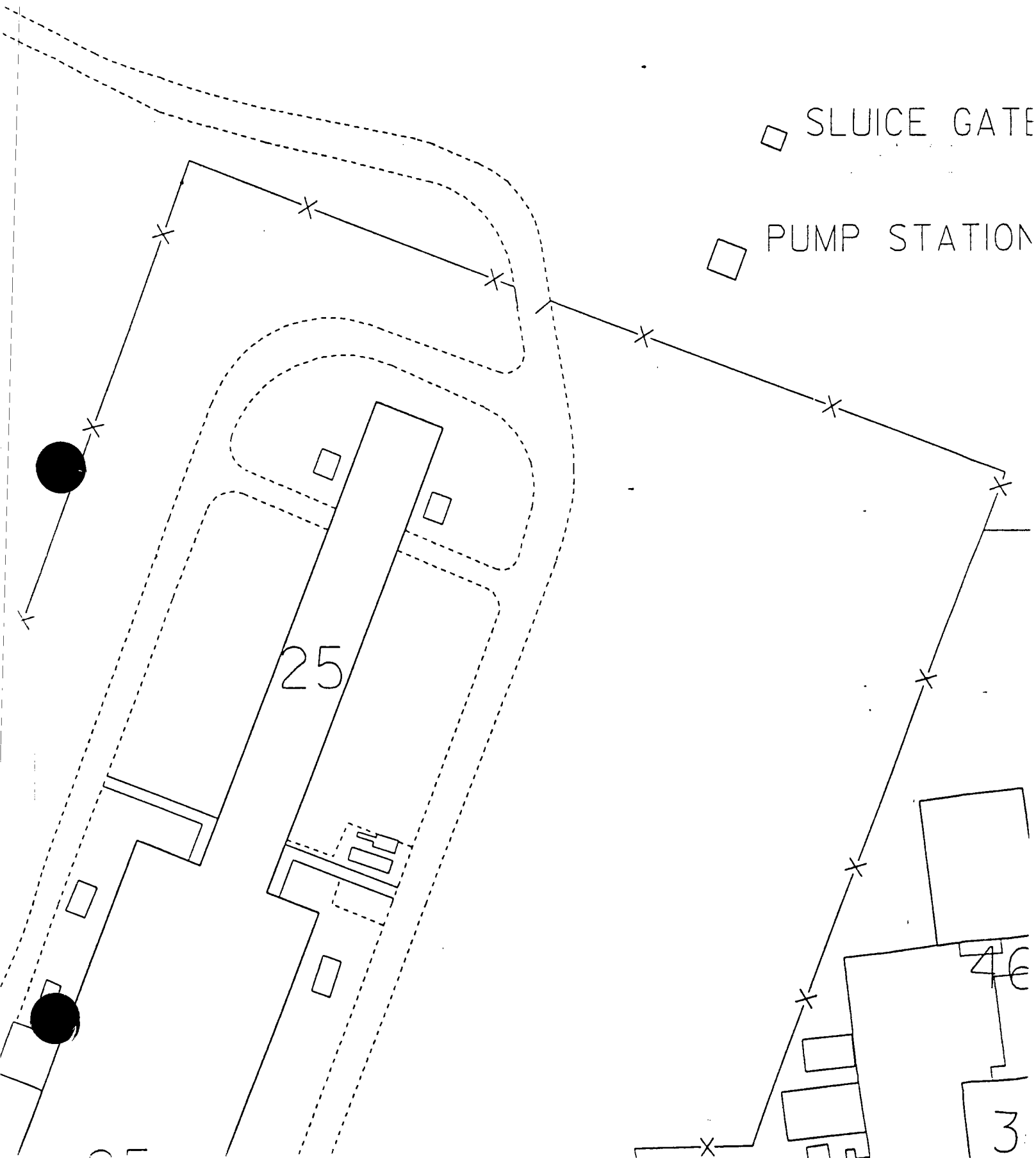
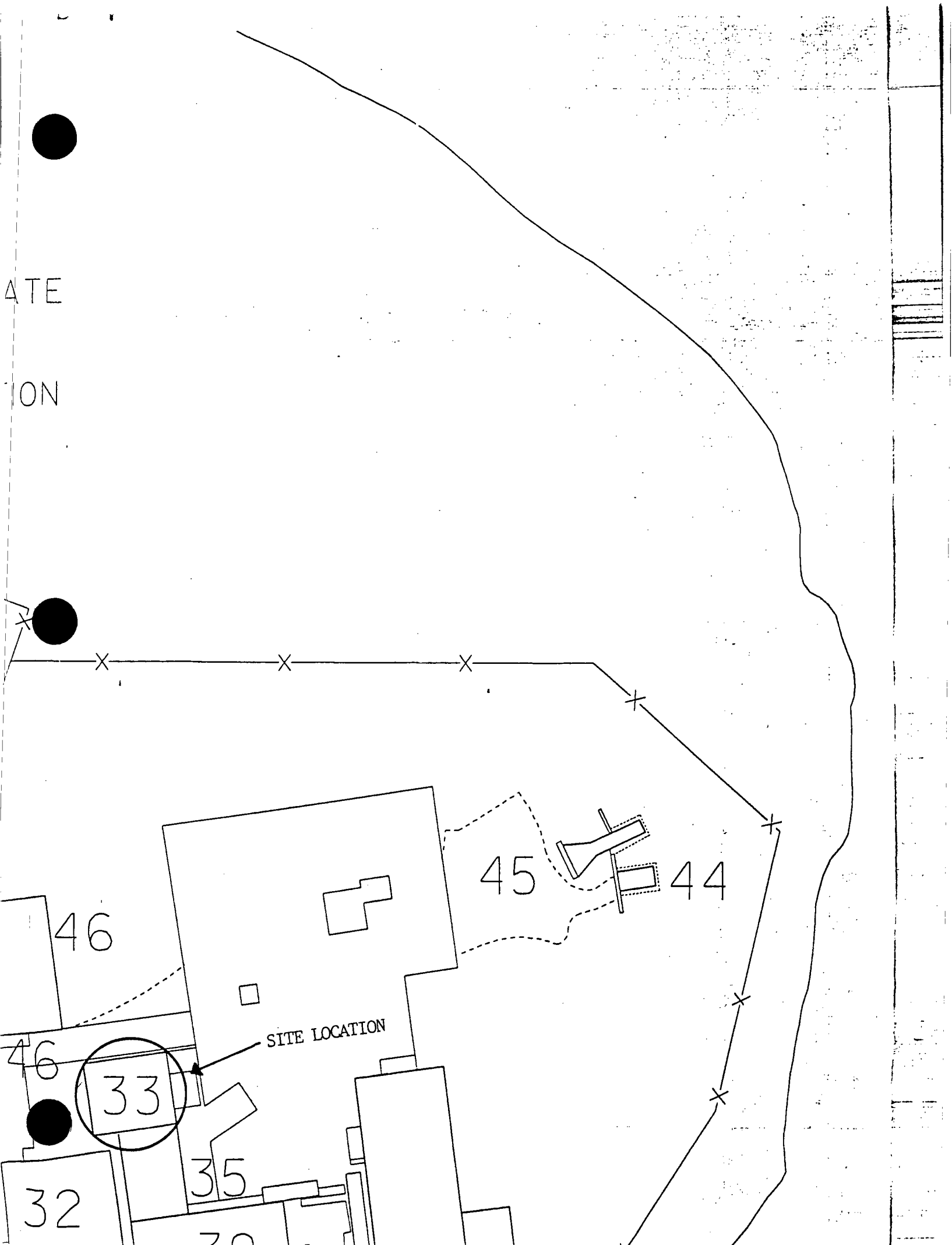
MAP A CLOSURE PLAN, SIMULATION AND TEST BRANCH, BUILDING 33

EAST END
LOCATION CIRCLED




SLUICE GATE
PUMP STATION
25
46
3


ATE
ION
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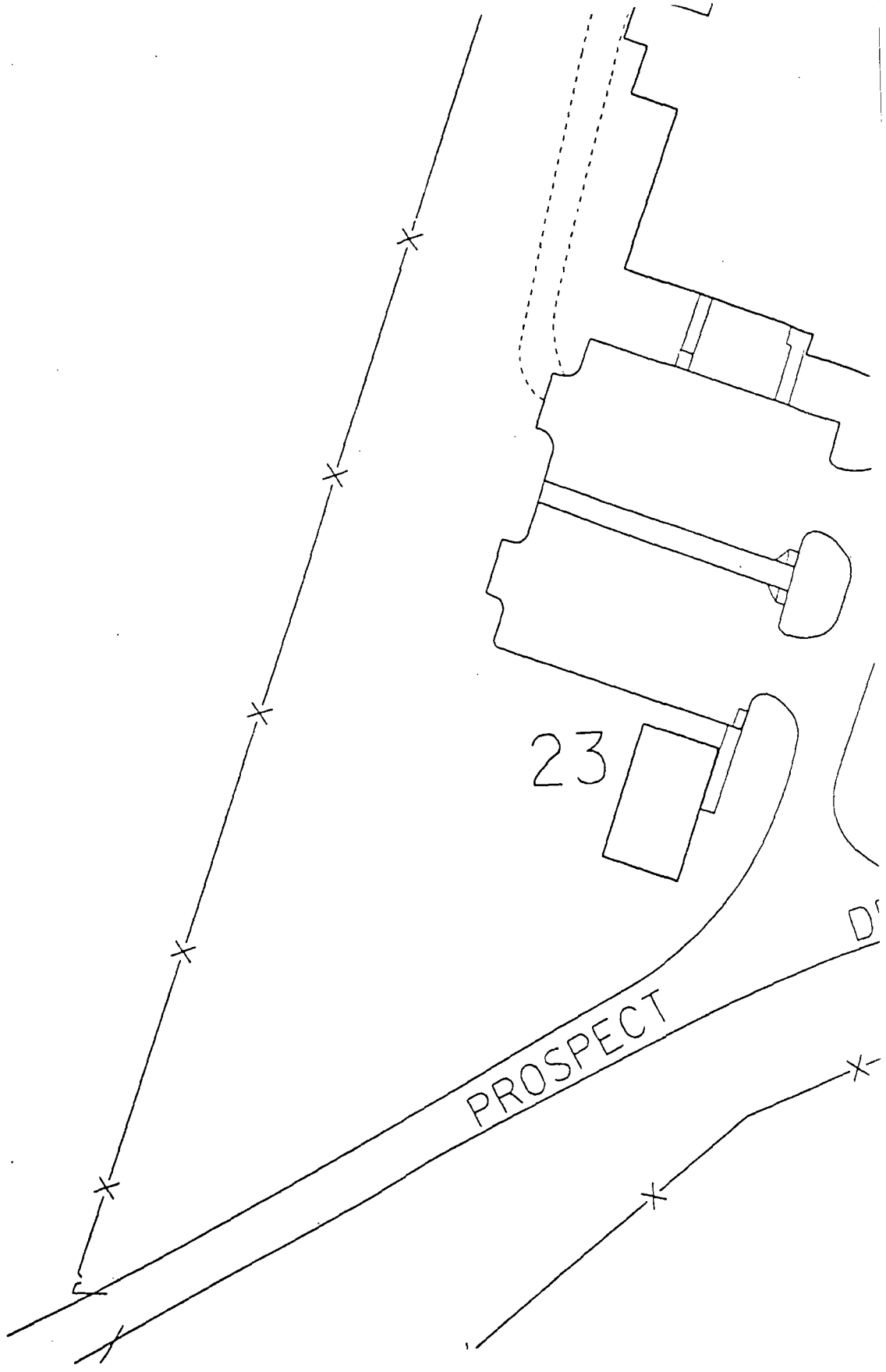
44
46
46
SITE LOCATION
33
35
32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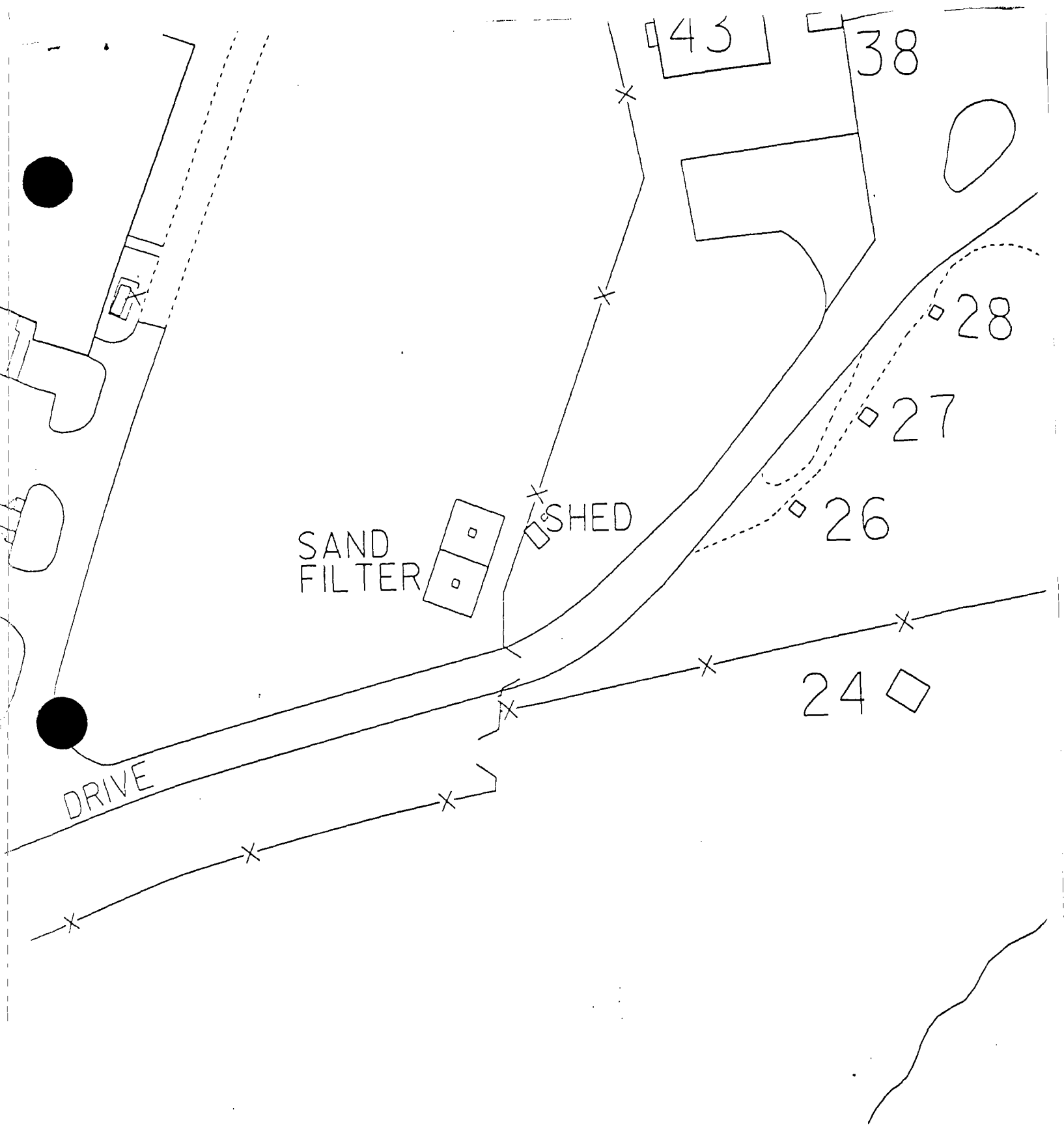
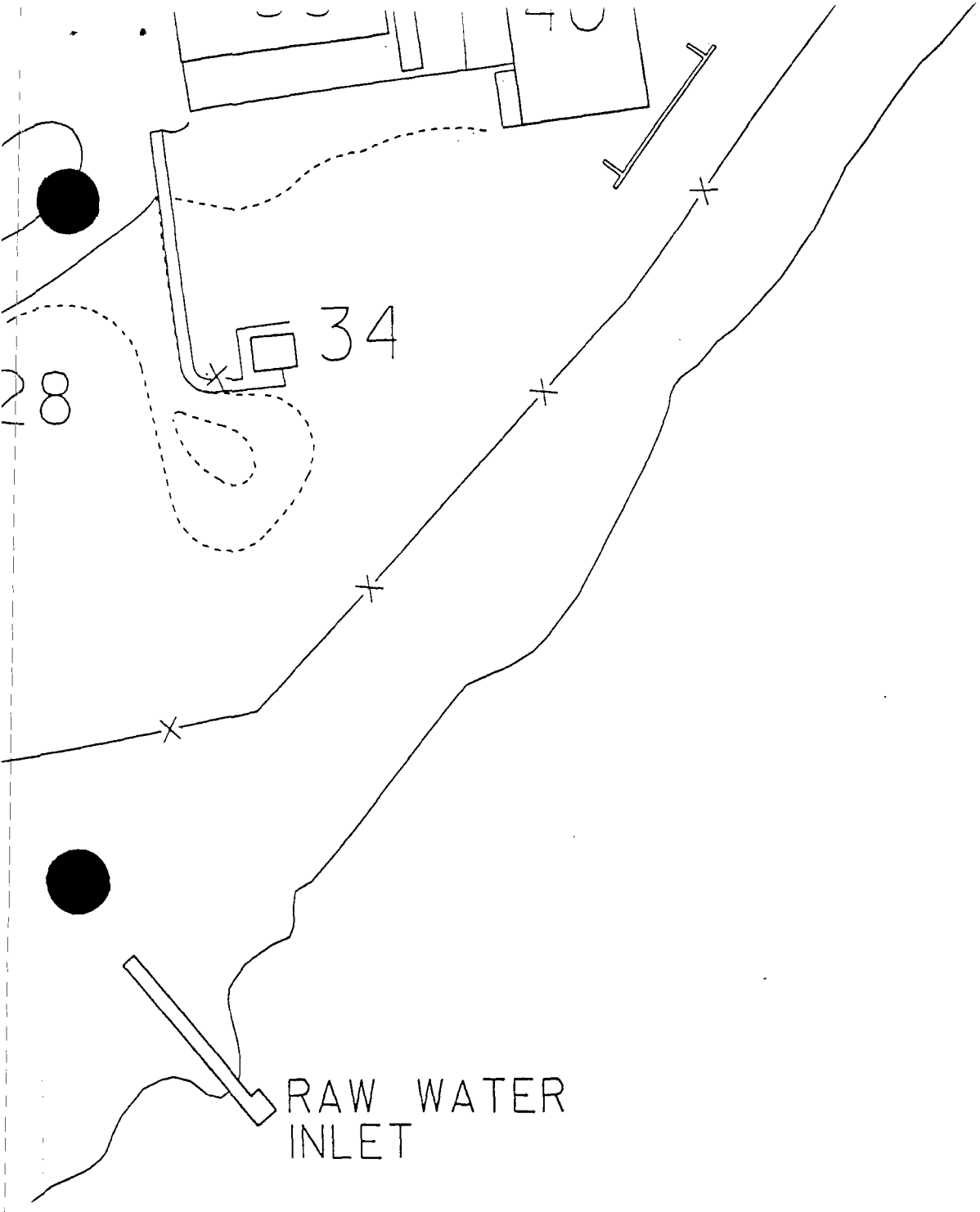
PROSPECT


43
38
28
27
26
SHED
SAND
FILTER
24
DRIVE



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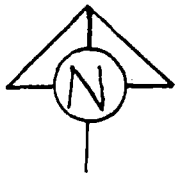
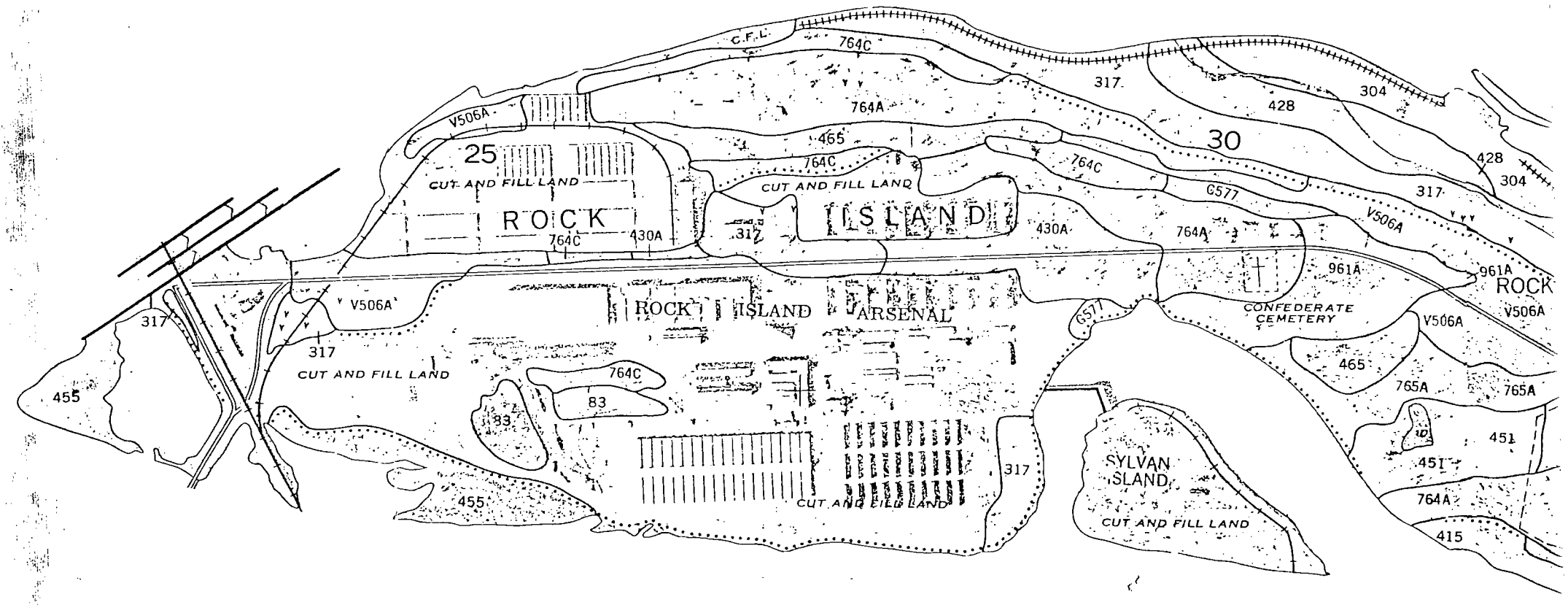


SCALE
1" = 70'

MAP B CLOSURE PLAN, SIMULATION AND TEST BRANCH, BUILDING 33

AREA MAP
LOCATION CIRCLED



SOIL SURVEY MAP OF ROCK ISLAND ARSENAL
(SCS OCTOBER 1977)

4

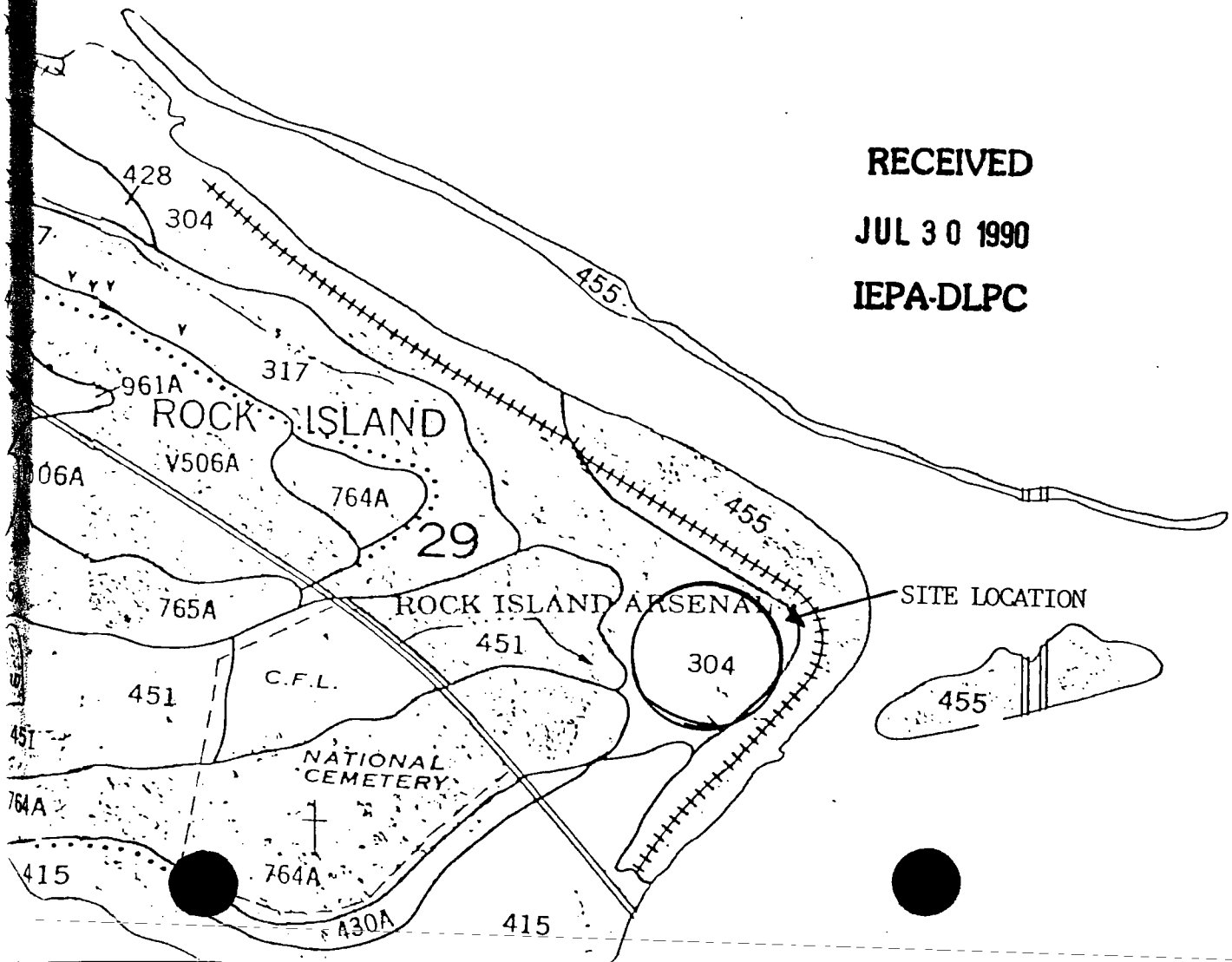


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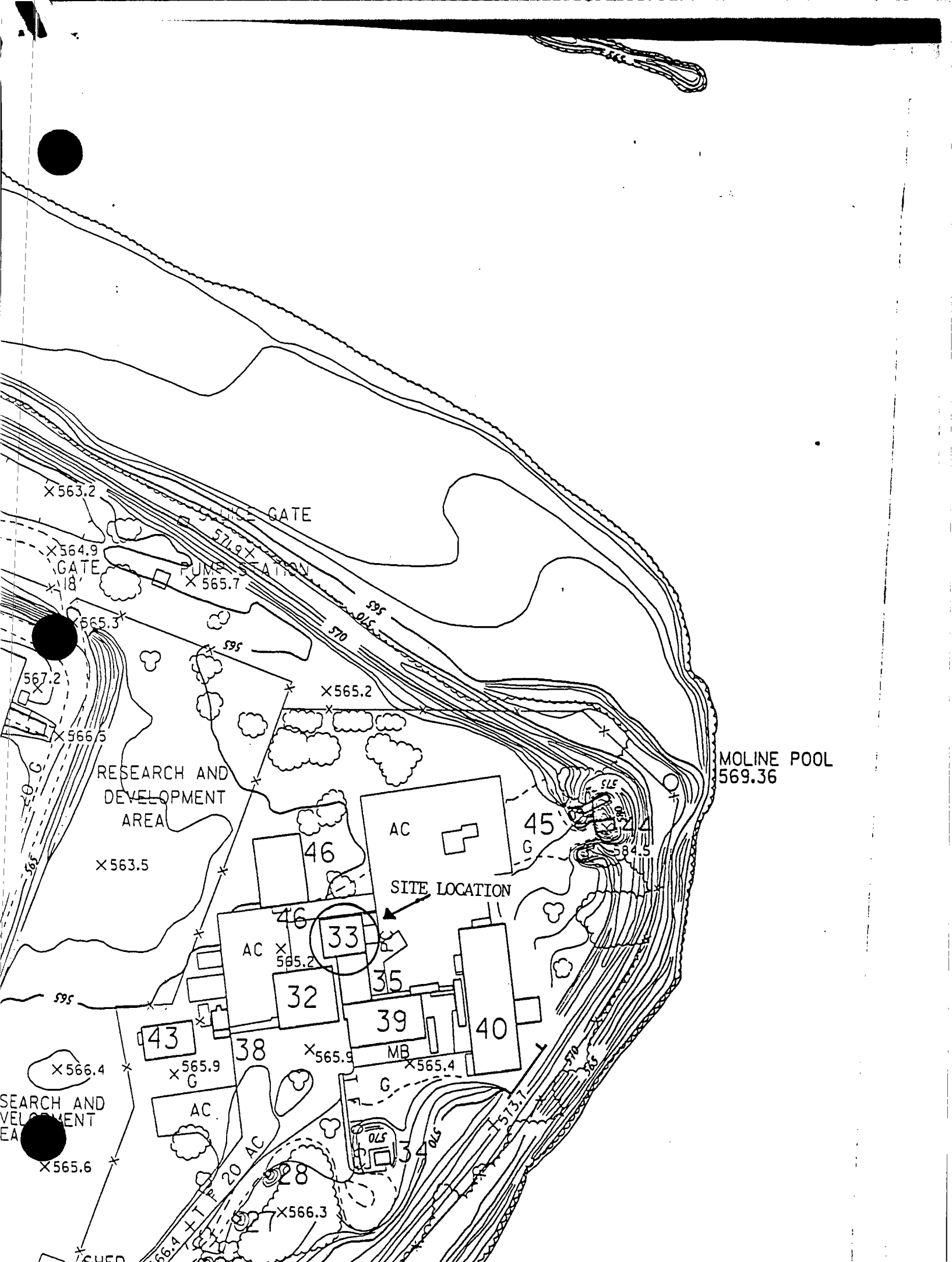
TABLE I

ROCK ISLAND ARSENAL SOILS
(U.S. SOIL CONSERVATION SERVICE
CLASSIFICATIONS)

		Capability Group	Woodland Suitability Group	Wildlife Group	Recreation Group
83	Wabash silty clay	IIIw-1	2w6	6	8
304	Landes loamy fine sand	IVs-1	2o4	5	6
317	Millsdale silty clay loam	IIIw-1	2w3	6	7
415	Orion silt loam	I-3	2o4	5	6
428	Coffeen silt loam	I-3	2o4	5	6
430A	Raddle silt loam 0 to 2% slopes	I-1	1o1	1	1
451	Lawson silt loam	I-3	2o4	5	6
455	Mixed alluvial land	IIIw-2	2o4	5	6
465	Montgomery silty clay loam	IIIw-1	2w6	6	7
V506A	Hitt loam, shallow variant, 0 to 4% slopes	IIs-1	3o1	1	1
G577	Gravelly terrace escarpments	VIs-1	3s3	7	4
764A	Coyne fine sandy loam, 0 to 4% slopes	IIs-2	3s2	1	1
764C	Coyne fine sandy loam, 4 to 12% slopes	IIIe-2	3s2	1	3
765A	Trempealeau silt loam, 0 to 4% slopes	IIs-2	2o1	1	1
961A	Burkhardt-Saude Complex, 0 to 4% slopes	IIIs-1	3s2	7	2



SLUICE GATE
PUMP STATION
GATE
18'
RESEARCH AND
DEVELOPMENT
AREA
SITE LOCATION
MOLINE POOL
569.36
AC
MB
G
563.2
564.9
565.7
565.3
567.2
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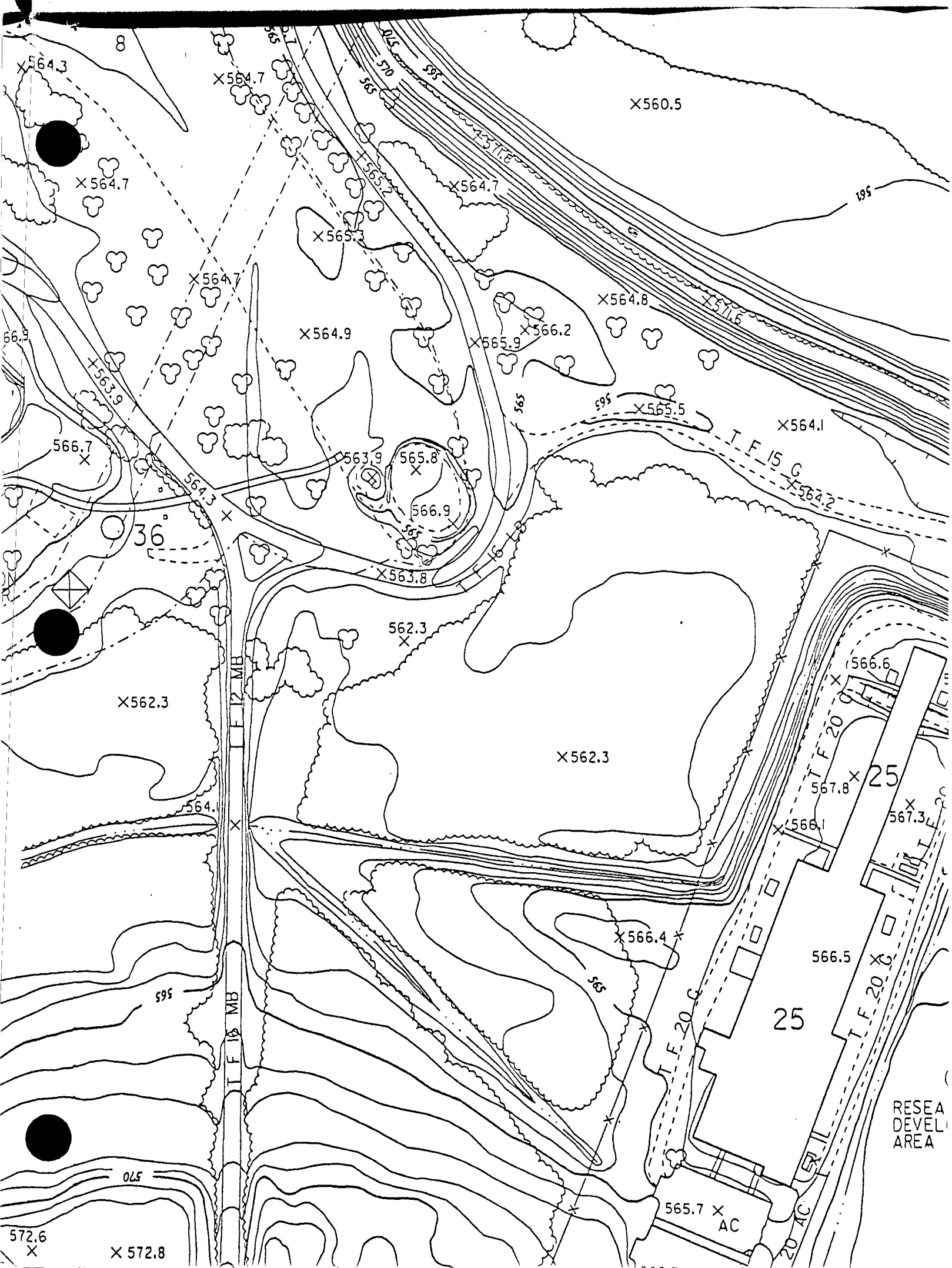

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DEVEL
AREA
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AC
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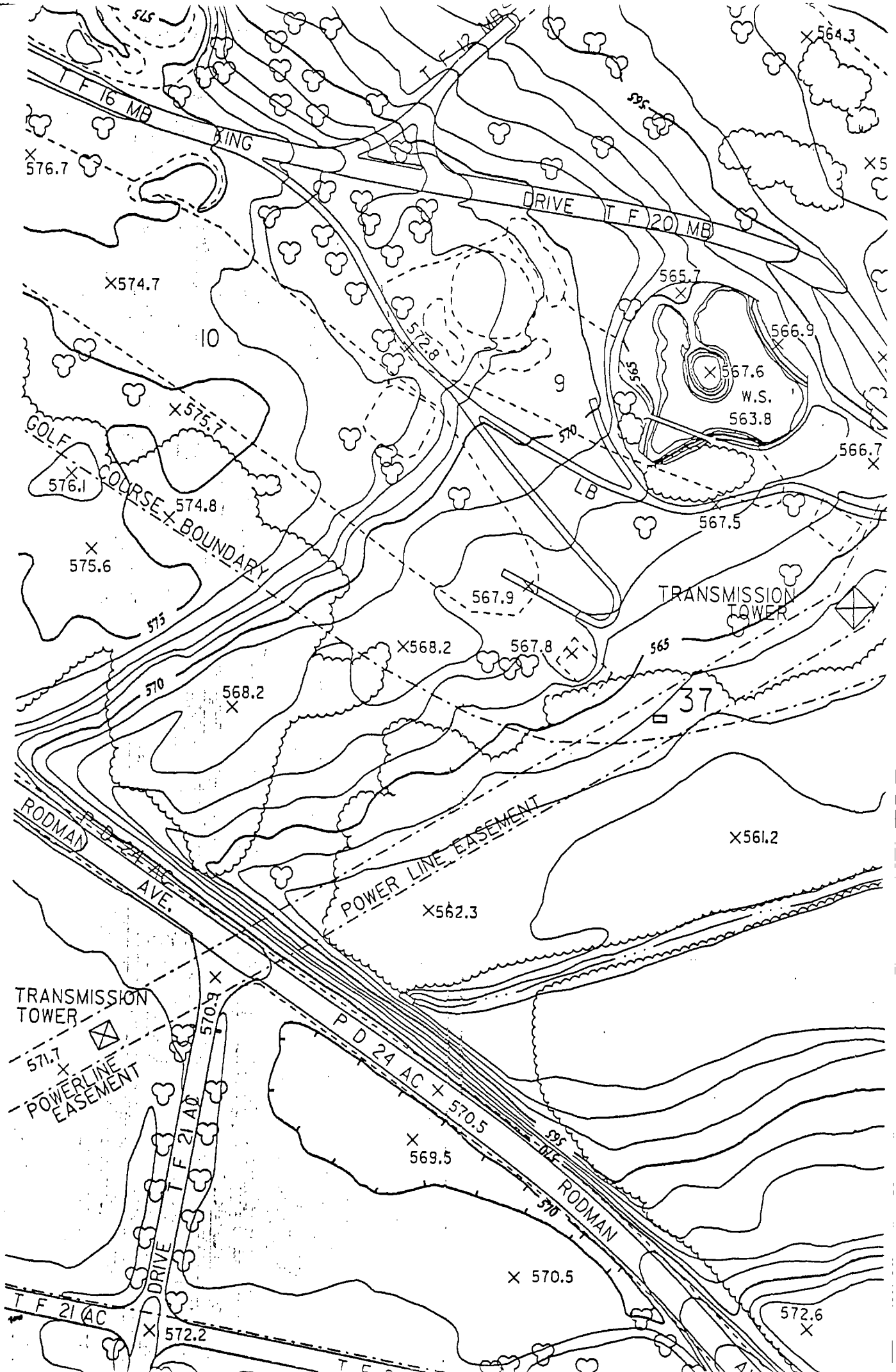
572.8


T F 16 MB
RING
DRIVE
T F 20 MB
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574.7
10
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576.1
574.8
575.6
GOLF COURSE BOUNDARY
572.8
9
565.7
566.9
567.6
W.S.
563.8
566.7
567.5
LB
567.9
TRANSMISSION TOWER
568.2
567.8
568.2
37
561.2
POWER LINE EASEMENT
562.3
RODMAN
AVE.
P D 24 AC
TRANSMISSION TOWER
571.7
POWERLINE EASEMENT
570.9
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DRIVE
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P D 24 AC
570.5
RODMAN
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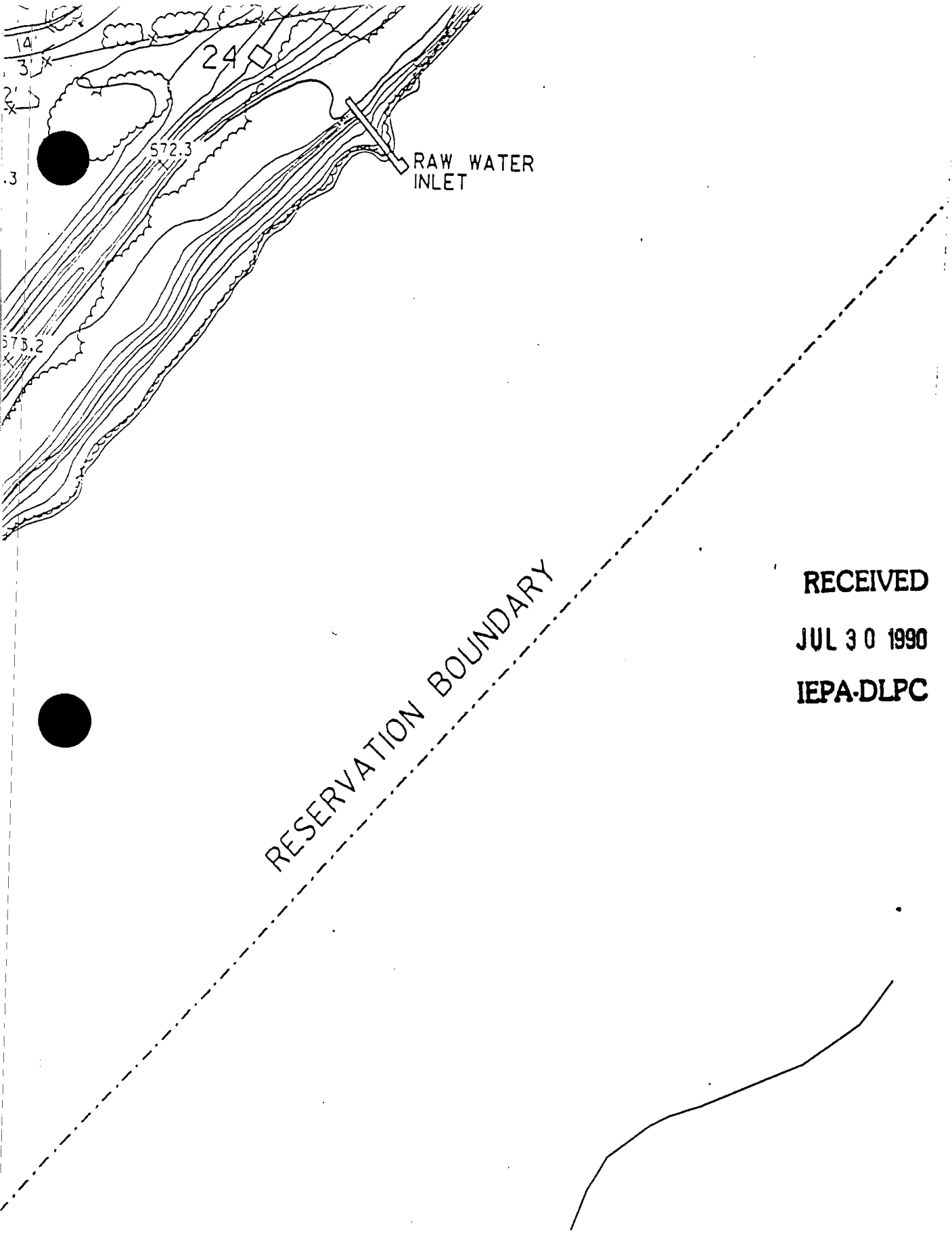
T F 21 AC
572.2
564.3



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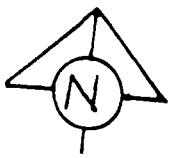

SCALE
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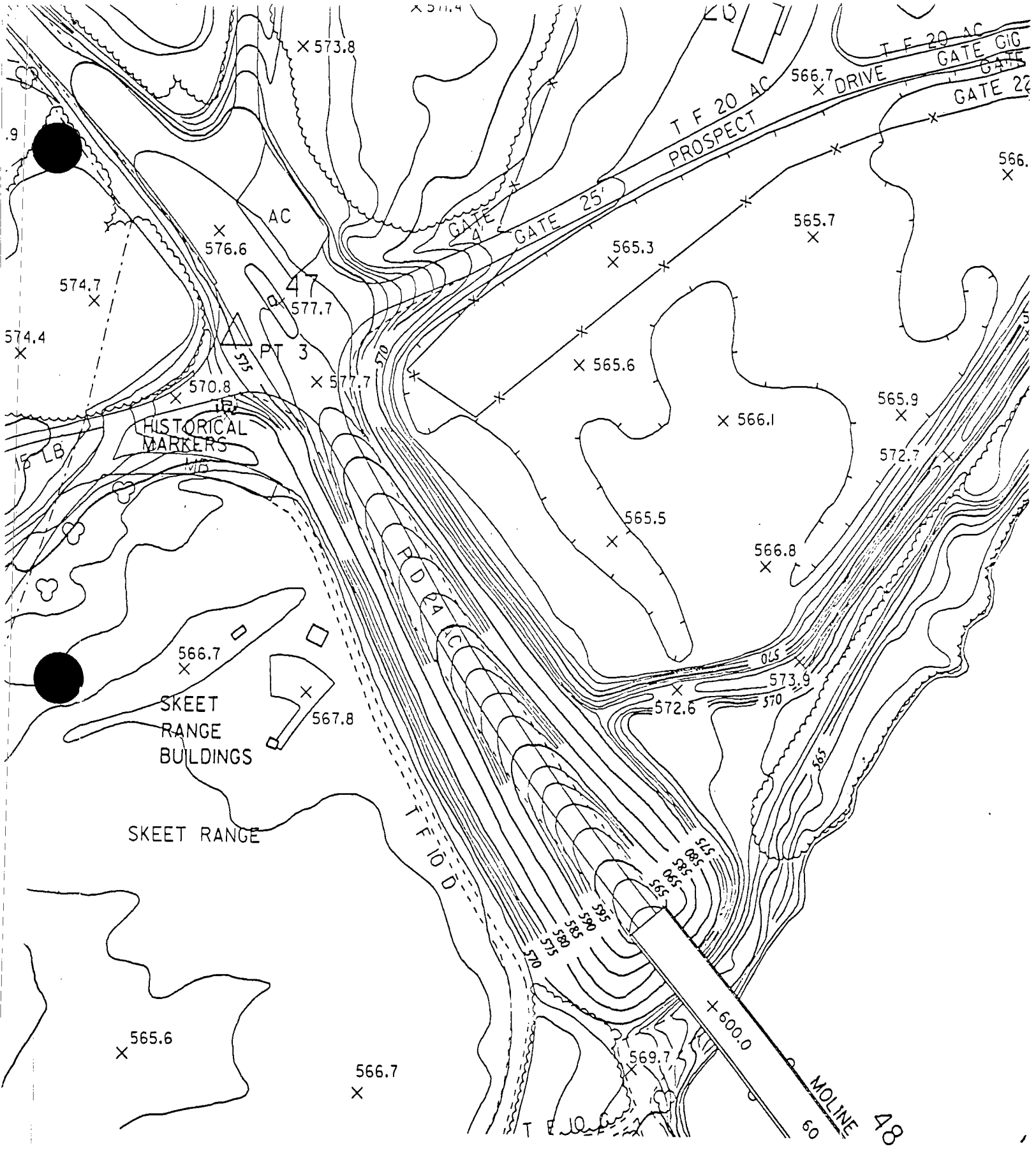
MAP D CLOSURE PLAN, SIMULATION AND TEST BRANCH, BUILDING 33

AREA TOPOGRAPHIC MAP
LOCATION CIRCLED


573.8
566.7
DRIVE
T F 20 AC
GATE GIG
GATE 22
T F 20 AC
PROSPECT
GATE 25'
GATE 4'
566.
565.7
565.3
AC
576.6
47
577.7
574.7
574.4
PT 3
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570
577.7
570.8
565.6
566.1
565.9
HISTORICAL
MARKERS
572.7
565.5
566.8
RD 24 C
566.7
570
573.9
572.6
570
SKEET
RANGE
BUILDINGS
567.8
565
SKEET RANGE
T F 10 D
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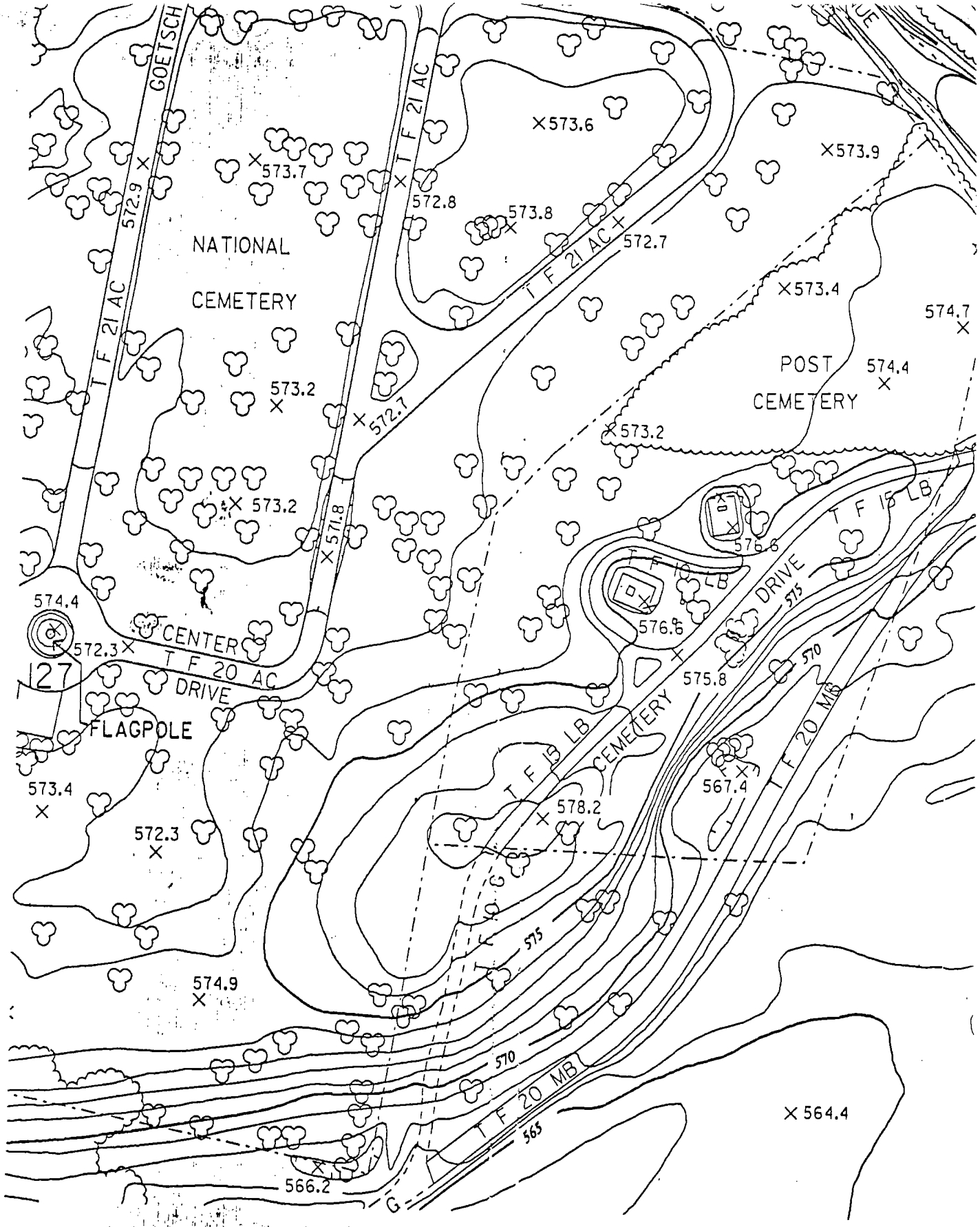
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Please print or type in the unshaded areas only
(fill-in areas are spaced for elite type, i.e., 12 characters/inch).

Form Approved OMB No. 158-R0175

U.S. ENVIRONMENTAL PROTECTION AGENCY

GENERAL INFORMATION

Consolidated Permits Program

(Read the "General Instructions" before starting.)

GENERAL

I. EPA I.D. NUMBER: F IL2138218335

GENERAL INSTRUCTIONS

If a preprinted label has been provided, affix it in the designated space. Review the information carefully; if any of it is incorrect, cross it out and enter the correct data in the appropriate fill-in area below. Also, if any of the preprinted data is absent (the area to the left of the label space lists the information that should appear), please provide it in the appropriate fill-in area(s) below. If the label is complete and correct, you need not complete Items I, III, V, and VI (except VI-B which must be completed regardless). Complete Items II and VI-B if no label has been provided. Refer to the instructions for detailed item descriptions and for the legal authorizations under which this data is collected.

I. EPA I.D. NUMBER	IL2138210335 ILD079130530 (Also assigned by US EPA)
II. FACILITY NAME	NAME: PRESS HARD WHEN FILLING IN NAME & ADDRESS. Commander Rock Island Arsenal
III. FACILITY MAILING ADDRESS	STREET ADDRESS: ATTN: SARRI-ENM-T/Dr. W. S. Shore
VI. FACILITY LOCATION	CITY, STATE, & ZIP CODE: Rock Island, IL 61299

II. POLLUTANT CHARACTERISTICS

INSTRUCTIONS: Complete A through J to determine whether you need to submit any permit application forms to the EPA. If you answer "yes" to any questions, you must submit this form and the supplemental form listed in the parenthesis following the question. Mark "X" in the box in the third column if the supplemental form is attached. If you answer "no" to each question, you need not submit any of these forms. You may answer "no" if your activity is excluded from permit requirements; see Section C of the instructions. See also, Section D of the instructions for definitions of bold-faced terms.

SPECIFIC QUESTIONS	MARK "X" YES	NO	FORM ATTACHED
A. Is this facility a publicly owned treatment works which results in a discharge to waters of the U.S.? (FORM 2A)		X	
B. Is this a facility which currently results in discharges to waters of the U.S. other than those described in A or B above? (FORM 2C)		X	
C. Does or will this facility treat, store, or dispose of hazardous wastes? (FORM 3)	X		
D. Do you or will you inject at this facility any produced water or other fluids which are brought to the surface in connection with conventional oil or natural gas production, inject fluids used for enhanced recovery of oil or natural gas, or inject fluids for storage of liquid hydrocarbons? (FORM 4)		X	
E. Is this facility a proposed stationary source which is one of the 28 industrial categories listed in the instructions and which will potentially emit 100 tons per year of any air pollutant regulated under the Clean Air Act and may affect or be located in an attainment area? (FORM 5)	X		

SPECIFIC QUESTIONS	MARK "X" YES	NO	FORM ATTACHED
F. Does or will this facility (either existing or proposed) include a concentrated animal feeding operation or aquatic animal production facility which results in a discharge to waters of the U.S.? (FORM 2B)		X	
G. Is this a proposed facility (other than those described in A or B above) which will result in a discharge to waters of the U.S.? (FORM 2D)		X	
H. Do you or will you inject at this facility industrial or municipal effluent below the lowermost stratum containing, within one quarter mile of the well bore, underground sources of drinking water? (FORM 4)		X	
I. Do you or will you inject at this facility fluids for special processes such as mining of sulfur by the Frasch process, solution mining of minerals, in situ combustion of fossil fuel, or recovery of geothermal energy? (FORM 4)		X	
J. Is this facility a proposed stationary source which is NOT one of the 28 industrial categories listed in the instructions and which will potentially emit 250 tons per year of any air pollutant regulated under the Clean Air Act and may affect or be located in an attainment area? (FORM 5)		X	

III. NAME OF FACILITY

SKIP: ROCK ISLAND ARSENAL

IV. FACILITY CONTACT

A. NAME & TITLE (last, first, & title)	B. PHONE (area code & no.)
SHORE WILLIAM S ENVIR COORD	309 794 5504

V. FACILITY MAILING ADDRESS

A. STREET OR P.O. BOX: ATTN: SARRI-ENM-T/DR. W. SHORE

B. CITY OR TOWN	C. STATE	D. ZIP CODE
ROCK ISLAND	IL	61299

VI. FACILITY LOCATION

A. STREET, ROUTE NO. OR OTHER SPECIFIC IDENTIFIER: NA

B. COUNTY NAME: ROCK ISLAND

C. CITY OR TOWN	D. STATE	E. ZIP CODE	F. COUNTY CODE
ROCK ISLAND	IL	61299	

RECEIVED
JUL 30 1990
IEPA-DLPC

CONTINUED FROM THE FRONT

II. SIC CODES (4-digit, in order of priority)

A. FIRST	B. SECOND
3489 (specify) Ordnance & Accessories	3471 (specify) Electroplating, polishing & coloring of metals
C. THIRD	**D. FOURTH**
84 (specify) Small Arms	3479 (specify) Coating and engraving metals.

III. OPERATOR INFORMATION

A. NAME: ROCK ISLAND ARSENAL

B. Is the name listed in Item VIII-A also the owner? ☐ YES ☒ NO

C. STATUS OF OPERATOR (Enter the appropriate letter into the answer box; if "Other", specify.)
F = FEDERAL, S = STATE, P = PRIVATE, M = PUBLIC (other than federal or state), O = OTHER (specify)

F (specify)

D. PHONE (area code & no.): A 309 794 5504

E. STREET OR P.O. BOX: ATTN: SARRI-ENM-T/Dr. W. Shore

F. CITY OR TOWN: ROCK ISLAND

G. STATE: IL

H. ZIP CODE: 61299

IX. INDIAN LAND: Is the facility located on Indian lands? ☐ YES ☒ NO

V. EXISTING ENVIRONMENTAL PERMITS

A. NPDES (Discharges to Surface Water)	D. PSD (Air Emissions from Proposed Sources)
N	9 P
B. UIC (Underground Injection of Fluids)	**E. OTHER (specify)**
U	9 (specify)
C. RCRA (Hazardous Wastes)	**E. OTHER (specify)**
	9 (specify)

VI. MAP

Attach to this application a topographic map of the area extending to at least one mile beyond property boundaries. The map must show the outline of the facility, the location of each of its existing and proposed intake and discharge structures, each of its hazardous waste treatment, storage, or disposal facilities, and each well where it injects fluids underground. Include all springs, rivers and other surface water bodies in the map area. See instructions for precise requirements.

VII. NATURE OF BUSINESS (provide a brief description)

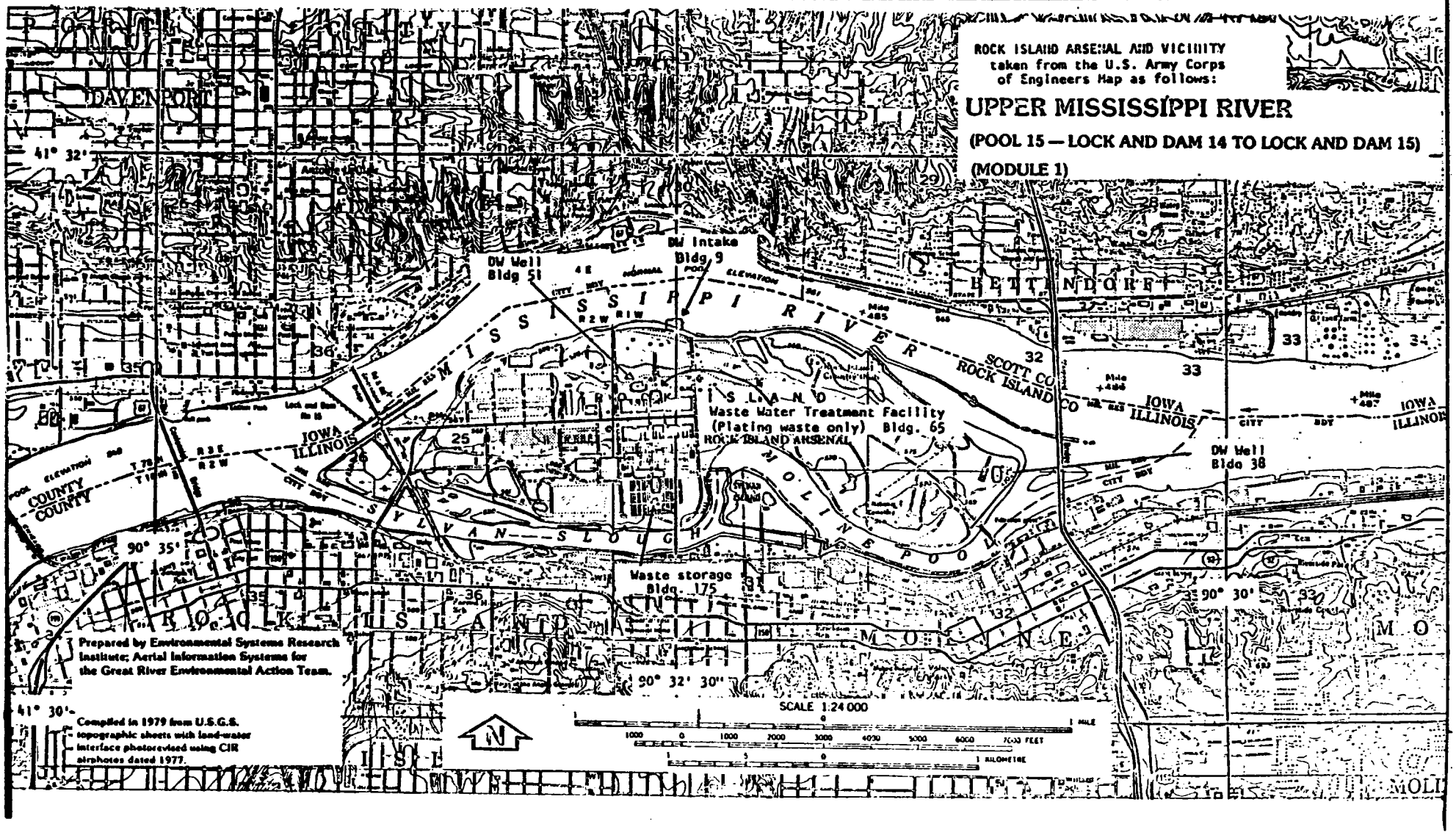
RIA performs manufacturing, fabrication, engineering support and product assurance of assigned materiel which includes aircraft weapons, infantry weapons, air defense weapons, gun mounts, recoil mechanisms and carriages for tanks and artillery, armaments for tanks, special tools, tool sets and common tools and maintenance equipment. Prototype and advanced engineering models are manufactured in support of US Army Armament Research & Development Command (ARRADCOM RIA provides the Armed Forces with manufacturing and support services not readily available from private industry. RIA demilitarizes small arms and prints targets for DoD. Congress approved RIA as a western armory 11 July 1862.

VIII. CERTIFICATION (see instructions)

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this application and all attachments and that, based on my inquiry of those persons immediately responsible for obtaining the information contained in the application, I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

A. NAME & OFFICIAL TITLE (type or print)	B. SIGNATURE	C. DATE SIGNED
JOHN KRONKAITIS, Colonel, OrdC Commanding		

COMMENTS FOR OFFICIAL USE ONLY


ROCK ISLAND ARSENAL AND VICINITY
taken from the U.S. Army Corps
of Engineers Map as follows:
UPPER MISSISSIPPI RIVER
(POOL 15 — LOCK AND DAM 14 TO LOCK AND DAM 15)
(MODULE 1)
DAVENPORT
BETTENDORF
ROCK ISLAND
MOLINE
DW Well
Bldg 51
DW Intake
Bldg 9
MISSISSIPPI RIVER
SCOTT CO
ROCK ISLAND CO
IOWA
ILLINOIS
ISLAND
Waste Water Treatment Facility
(Plating waste only) Bldg. 65
ROCK ISLAND ARSENAL
DW Well
Bldg 38
SYLVAN SLOUGH
MOLINE POOL
Waste storage
Bldg. 175
41° 32'
90° 35'
90° 32' 30"
90° 30'
41° 30'
Prepared by Environmental Systems Research
Institute; Aerial Information Systems for
the Great River Environmental Action Team.
Compiled in 1979 from U.S.G.S.
topographic sheets with land-water
interface photorevised using CIR
airphotos dated 1977.
SCALE 1:24 000
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Please print or type in the unshaded areas only
(fill-in areas are spaced for elite type, i.e., 12 characters/inch).

ILD079130530 (Also assigned by US

Form Approved OMB No. 158-S80004

FORM 3 RCRA

EPA

U.S. ENVIRONMENTAL PROTECTION AGENCY

HAZARDOUS WASTE PERMIT APPLICATION

Consolidated Permits Program

(This information is required under Section 3005 of RCRA.)

I. EPA I.D. NUMBER

F I L 2 1 3 8 2 1 8 3 3 5

FOR OFFICIAL USE ONLY

APPLICATION APPROVED	DATE RECEIVED (yr., mo., & day)	COMMENTS

II. FIRST OR REVISED APPLICATION

Place an "X" in the appropriate box in A or B below *(mark one box only)* to indicate whether this is the first application you are submitting for your facility revised application. If this is your first application and you already know your facility's EPA I.D. Number, or if this is a revised application, enter your facilit EPA I.D. Number in Item I above.

A. FIRST APPLICATION *(place an "X" below and provide the appropriate date)*

[X] 1. EXISTING FACILITY *(See instructions for definition of "existing" facility. Complete item below.)*

FOR EXISTING FACILITIES, PROVIDE THE DATE (yr., mo., & day) OPERATION BEGAN OR THE DATE CONSTRUCTION COMMENCED *(use the boxes to the left)*

C	YR.	MO.	DAY
8	1862	07	11

[ ] 2. NEW FACILITY *(Complete item below.)*

FOR NEW FACILI PROVIDE THE DA (yr., mo., & day) OP TION BEGAN OR I EXPECTED TO BE

YR.	MO.	DAY

B. REVISED APPLICATION *(place an "X" below and complete Item I above)*

[ ] 1. FACILITY HAS INTERIM STATUS

[ ] 2. FACILITY HAS A RCRA PERMIT

III. PROCESSES – CODES AND DESIGN CAPACITIES

A. PROCESS CODE – Enter the code from the list of process codes below that best describes each process to be used at the facility. Ten lines are provided f entering codes. If more lines are needed, enter the code(s) in the space provided. If a process will be used that is not included in the list of codes below, t describe the process *(including its design capacity)* in the space provided on the form *(Item III-C)*.

B. PROCESS DESIGN CAPACITY – For each code entered in column A enter the capacity of the process.

1. AMOUNT – Enter the amount.
2. UNIT OF MEASURE – For each amount entered in column B(1), enter the code from the list of unit measure codes below that describes the unit of measure used. Only the units of measure that are listed below should be used.

PROCESS	PROCESS CODE	APPROPRIATE UNITS OF MEASURE FOR PROCESS DESIGN CAPACITY
Storage:		
CONTAINER *(barrel, drum, etc.)*	S01	GALLONS OR LITERS
TANK	S02	GALLONS OR LITERS
WASTE PILE	S03	CUBIC YARDS OR CUBIC METERS
SURFACE IMPOUNDMENT	S04	GALLONS OR LITERS
Disposal:		
INJECTION WELL	D79	GALLONS OR LITERS
LANDFILL	D80	ACRE-FEET *(the volume that would cover one acre to a depth of one foot)* OR HECTARE-METER
LAND APPLICATION	D81	ACRES OR HECTARES
OCEAN DISPOSAL	D82	GALLONS PER DAY OR LITERS PER DAY
SURFACE IMPOUNDMENT	D83	GALLONS OR LITERS

PROCESS	PROCESS CODE	APPROPRIATE UNITS OF MEASURE FOR PROCESS DESIGN CAPACITY
Treatment:		
TANK	T01	GALLONS PER DAY OR LITERS PER DAY
SURFACE IMPOUNDMENT	T02	GALLONS PER DAY OR LITERS PER DAY
INCINERATOR	T03	TONS PER HOUR OR METRIC TONS PER HOUR; GALLONS PER HOUR OR LITERS PER HOUR
OTHER *(Use for physical, chemical, thermal or biological treatment processes not occurring in tanks, surface impoundments or incinerators. Describe the processes in the space provided; Item III-C.)*	T04	GALLONS PER DAY OR LITERS PER DAY

UNIT OF MEASURE	UNIT OF MEASURE CODE	UNIT OF MEASURE	UNIT OF MEASURE CODE	UNIT OF MEASURE	UNIT MEASU COD
GALLONS	G	LITERS PER DAY	V	ACRE-FEET	A
LITERS	L	TONS PER HOUR	D	HECTARE-METER	F
CUBIC YARDS	Y	METRIC TONS PER HOUR	W	ACRES	B
CUBIC METERS	C	GALLONS PER HOUR	E	HECTARES	G
GALLONS PER DAY	U	LITERS PER HOUR	H		

EXAMPLE FOR COMPLETING ITEM III *(shown in line numbers X-1 and X-2 below)*: A facility has two storage tanks, one tank can hold 200 gallons and t other can hold 400 gallons. The facility also has an incinerator that can burn up to 20 gallons per hour.

C DUP 1

LINE NUMBER	A. PROCESS CODE (from list above)	B. PROCESS DESIGN CAPACITY 1. AMOUNT (specify)	B. PROCESS DESIGN CAPACITY 2. UNIT OF MEASURE (enter code)	FOR OFFICIAL USE ONLY	LINE NUMBER	A. PROCESS CODE (from list above)	B. PROCESS DESIGN CAPACITY 1. AMOUNT	B. PROCESS DESIGN CAPACITY 2. UNIT OF MEASURE (enter code)	FOR OFFICIAL USE ONLY
X-1	S02	600	G		5				
X-2	T03	20	E		6				
1	S01	200	Y		7				
2	D80	43,000	U		8				
3					9				
4					10				

Continued from the front.

III. PROCESSES *(continued)*

SPACE FOR ADDITIONAL PROCESS CODES OR FOR DESCRIBING OTHER PROCESSES *(code "T04")*. FOR EACH PROCESS ENTERED HERE INCLUDE DESIGN CAPACITY.

V. DESCRIPTION OF HAZARDOUS WASTES

EPA HAZARDOUS WASTE NUMBER – Enter the four–digit number from 40 CFR, Subpart D for each listed hazardous waste you will handle. If you handle hazardous wastes which are not listed in 40 CFR, Subpart D, enter the four–digit number*(s)* from 40 CFR, Subpart C that describes the characteristics and/or the toxic contaminants of those hazardous wastes.

ESTIMATED ANNUAL QUANTITY – For each listed waste entered in column A estimate the quantity of that waste that will be handled on an annual basis. For each characteristic or toxic contaminant entered in column A estimate the total annual quantity of all the non–listed waste*(s)* that will be handled which possess that characteristic or contaminant.

UNIT OF MEASURE – For each quantity entered in column B enter the unit of measure code. Units of measure which must be used and the appropriate codes are:

ENGLISH UNIT OF MEASURE	CODE	METRIC UNIT OF MEASURE	CODE
POUNDS	P	KILOGRAMS	K
TONS	T	METRIC TONS	M

If facility records use any other unit of measure for quantity, the units of measure must be converted into one of the required units of measure taking into account the appropriate density or specific gravity of the waste.

PROCESSES

1. PROCESS CODES:
   For listed hazardous waste: For each listed hazardous waste entered in column A select the code*(s)* from the list of process codes contained in Item III to indicate how the waste will be stored, treated, and/or disposed of at the facility.
   For non–listed hazardous wastes: For each characteristic or toxic contaminant entered in column A, select the code*(s)* from the list of process codes contained in Item III to indicate all the processes that will be used to store, treat, and/or dispose of all the non–listed hazardous wastes that possess that characteristic or toxic contaminant.
   Note: Four spaces are provided for entering process codes. If more are needed: (1) Enter the first three as described above; (2) Enter "000" in the extreme right box of Item IV-D(1); and (3) Enter in the space provided on page 4, the line number and the additional code*(s)*.
2. PROCESS DESCRIPTION: If a code is not listed for a process that will be used, describe the process in the space provided on the form.

OTE: HAZARDOUS WASTES DESCRIBED BY MORE THAN ONE EPA HAZARDOUS WASTE NUMBER – Hazardous wastes that can be described by ore than one EPA Hazardous Waste Number shall be described on the form as follows:

1. Select one of the EPA Hazardous Waste Numbers and enter it in column A. On the same line complete columns B,C, and D by estimating the total annual quantity of the waste and describing all the processes to be used to treat, store, and/or dispose of the waste.
2. In column A of the next line enter the other EPA Hazardous Waste Number that can be used to describe the waste. In column D(2) on that line enter "included with above" and make no other entries on that line.
3. Repeat step 2 for each other EPA Hazardous Waste Number that can be used to describe the hazardous waste.

XAMPLE FOR COMPLETING ITEM IV *(shown in line numbers X-1, X-2, X-3, and X-4 below)* – A facility will treat and dispose of an estimated 900 pounds r year of chrome shavings from leather tanning and finishing operation. In addition, the facility will treat and dispose of three non–listed wastes. Two wastes e corrosive only and there will be an estimated 200 pounds per year of each waste. The other waste is corrosive and ignitable and there will be an estimated 00 pounds per year of that waste. Treatment will be in an incinerator and disposal will be in a landfill.

LINE NO.	A. EPA HAZARD. WASTE NO. (enter code)	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEASURE (enter code)	D. PROCESSES 1. PROCESS CODES (enter)	D. PROCESSES 2. PROCESS DESCRIPTION (If a code is not entered in D(1))
X-1	K054	900	P	T03 D80	
X-2	D002	400	P	T03 D80	
X-3	D001	100	P	T03 D80	
X-4	D002				included with above

CONTINUE ON PAGE 3

Continued from page 2.

NOTE: Photocopy this page before completing if you have more than 26 wastes to list.

Form Approved OMB No. 158-S80004

EPA I.D. NUMBER (enter from page 1)	FOR OFFICIAL USE ONLY
W L 2 1 3 8 2 1 8 3 3 5 T/A C 1	W DUP T/A C 2 DUP

DESCRIPTION OF HAZARDOUS WASTES (continued)

LINE NO.	A. EPA HAZARD. WASTE NO. (enter code)	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEASURE (enter code)	D. PROCESSES 1. PROCESS CODES (enter)				2. PROCESS DESCRIPTION (if a code is not entered in D(1))
1	F001	12,000	G	S01				
2	F002	1,000	G	S01	T05			
3	F003	500	G	S01				
4	F005	500	G	S01				
5	F006	35	Y	T01	S01			
6	F007	250	G	S01				
7	F008	600	G	S01				
8	F009	250	G	S01				
9	F010	4	G	S01				
10	F011	1,600	G	T01	S01			
11	F012	110	G	S01				
	K061	60	Y	S01				
13	K062	4,400	G	T01				
14								
15								
16	F004	12 GAL/mo						CHANGES F[illegible]
17	F005	[illegible]						F007 [illegible]
18	F012	200 GAL/mo						[illegible]
19								[illegible]
20								
21								TOC [illegible]
22								here
23								
24								
25								
26								

ontinued from the front.

/. DESCRIPTION OF HAZARDOUS WASTES *(continued)*

.. USE THIS SPACE TO LIST ADDITIONAL PROCESS CODES FROM ITEM D(1) ON PAGE 3.

ILD079130530 (Also assigned by US EPA)

EPA I.D. NO. *(enter from page 1)*												T/A	C
I	L	2	1	3	8	2	1	8	3	3	5		6

FACILITY DRAWING

l existing facilities must include in the space provided on page 5 a scale drawing of the facility *(see instructions for more detail).*

. PHOTOGRAPHS

.ll existing facilities must include photographs *(aerial or ground—level)* that clearly delineate all existing structures; existing storage, ent and disposal areas; and sites of future storage, treatment or disposal areas *(see instructions for more detail).*

CILITY GEOGRAPHIC LOCATION

LATITUDE *(degrees, minutes & seconds)*	LONGITUDE *(degrees, minutes, & seconds)*
41 31 6	90 32 56

III. FACILITY OWNER

☐ A. If the facility owner is also the facility operator as listed in Section VIII on Form 1, "General Information", place an "X" in the box to the left and skip to Section IX below.

B. If the facility owner is not the facility operator as listed in Section VIII on Form 1, complete the following items:

1. NAME OF FACILITY'S LEGAL OWNER	2. PHONE NO. *(area code & no.)*
US Govt. by John Kronkaitis, Colonel, OrdC, Commanding	309-794-6035

3. STREET OR P.O. BOX	4. CITY OR TOWN	5. ST.	6. ZIP CODE
SARRI-CO	G Rock Island	IL	61299

K. OWNER CERTIFICATION

certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached ocuments, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the ubmitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, cluding the possibility of fine and imprisonment.

A. NAME *(print or type)*	B. SIGNATURE	C. DATE SIGNED
JOHN KRONKAITIS, Colonel, OrdC Commanding		

, OPERATOR CERTIFICATION

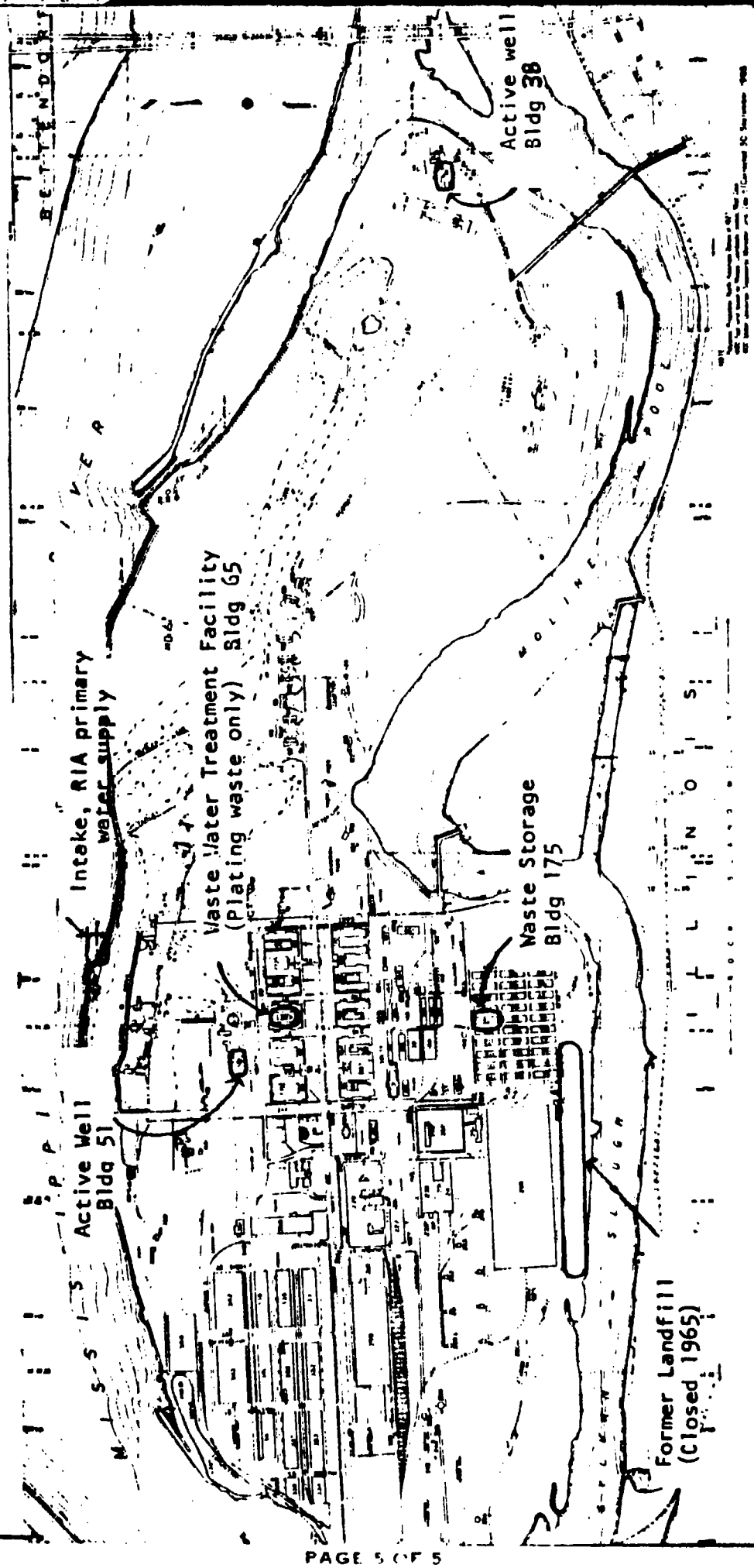
certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached ents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the ted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, ing the possibility of fine and imprisonment.

A. NAME *(print or type)*	B. SIGNATURE	C. DATE SIGNED

CONTINUE ON PAGE 5

Form Approved OMB No. 158 S80004

V. FACILITY DRAWING (see page 4)



Please print or type in the unshaded areas only
(fill-in areas are spaced for elite type, i.e., 12 characters/inch).

Form Approved OMB No. 158-R0175

FORM 1 GENERAL

EPA

U.S. ENVIRONMENTAL PROTECTION AGENCY

GENERAL INFORMATION

Consolidated Permits Program

(Read the "General Instructions" before starting.)

I. EPA I.D. NUMBER

F IL 5 2 1 0 0 2 1 8 3 3 D

LABEL ITEMS

- EPA I.D. NUMBER
- III. FACILITY NAME
- V. FACILITY MAILING ADDRESS
- VI. FACILITY LOCATION

IL 5210021833
Rock Island Arsenal
PLEASE PLACE LABEL IN THIS SPACE
ATTN: SMCRI-SEM
Rock Island, IL 61299-5000

GENERAL INSTRUCTIONS

If a preprinted label has been provided, affix it in the designated space. Review the information carefully; if any of it is incorrect, cross through it and enter the correct data in the appropriate fill-in area below. Also, if any of the preprinted data is absent *(the area to the left of the label space lists the information that should appear)*, please provide it in the proper fill-in area(s) below. If the label is complete and correct, you need not complete Items I, III, V, and VI *(except VI-B which must be completed regardless)*. Complete all items if no label has been provided. Refer to the instructions for detailed item descriptions and for the legal authorizations under which this data is collected.

II. POLLUTANT CHARACTERISTICS

INSTRUCTIONS: Complete A through J to determine whether you need to submit any permit application forms to the EPA. If you answer "yes" to any questions, you must submit this form and the supplemental form listed in the parenthesis following the question. Mark "X" in the box in the third column if the supplemental form is attached. If you answer "no" to each question, you need not submit any of these forms. You may answer "no" if your activity is excluded from permit requirements; see Section C of the instructions. See also, Section D of the instructions for definitions of bold-faced terms.

SPECIFIC QUESTIONS	MARK 'X' YES	NO	FORM ATTACHED
A. Is this facility a publicly owned treatment works which results in a discharge to waters of the U.S.? (FORM 2A)		X	
B. Does or will this facility *(either existing or proposed)* include a concentrated animal feeding operation or aquatic animal production facility which results in a discharge to waters of the U.S.? (FORM 2B)		X	
C. Is this a facility which currently results in discharges to waters of the U.S. other than those described in A or B above? (FORM 2C)			N/A
D. Is this a proposed facility *(other than those described in A or B above)* which will result in a discharge to waters of the U.S.? (FORM 2D)			N/A
E. Does or will this facility treat, store, or dispose of hazardous wastes? (FORM 3)	X		
F. Do you or will you inject at this facility industrial or municipal effluent below the lowermost stratum containing, within one quarter mile of the well bore, underground sources of drinking water? (FORM 4)		X	
G. Do you or will you inject at this facility any produced water or other fluids which are brought to the surface in connection with conventional oil or natural gas production, inject fluids used for enhanced recovery of oil or natural gas, or inject fluids for storage of liquid hydrocarbons? (FORM 4)		X	
H. Do you or will you inject at this facility fluids for special processes such as mining of sulfur by the Frasch process, solution mining of minerals, in situ combustion of fossil fuel, or recovery of geothermal energy? (FORM 4)		X	
I. Is this facility a proposed stationary source which is one of the 28 industrial categories listed in the instructions and which will potentially emit 100 tons per year of any air pollutant regulated under the Clean Air Act and may affect or be located in an attainment area? (FORM 5)		X	
J. Is this facility a proposed stationary source which is NOT one of the 28 industrial categories listed in the instructions and which will potentially emit 250 tons per year of any air pollutant regulated under the Clean Air Act and may affect or be located in an attainment area? (FORM 5)		X	

III. NAME OF FACILITY

1 SKIP ROCK ISLAND ARSENAL

IV. FACILITY CONTACT

A. NAME & TITLE *(last, first, & title)*	B. PHONE *(area code & no.)*
2 SHORE, WILLIAM S. ENV COORDINA	309 782 7855

V. FACILITY MAILING ADDRESS

A. STREET OR P.O. BOX

3 ATTN: SMCRI-SEM

B. CITY OR TOWN	C. STATE	D. ZIP CODE
4 ROCK ISLAND	IL	61299-5000

VI. FACILITY LOCATION

A. STREET, ROUTE NO. OR OTHER SPECIFIC IDENTIFIER

5 ROCK ISLAND ARSENAL

B. COUNTY NAME

ROCK ISLAND

C. CITY OR TOWN	D. STATE	E. ZIP CODE	F. COUNTY CODE *(if known)*
6 ROCK ISLAND	IL	61299	

A. FIRST	B. SECOND
7 9 7 1 (specify) Military Installation	7 (specify)
C. THIRD	**D. FOURTH**
7 (specify)	7 (specify)

VIII. OPERATOR INFORMATION

A. NAME

8 MULTIPLE OPERATORS, SEE ATTTACHED FORMS

B. Is the name listed in Item VIII-A also the owner? ☐ YES ☒ NO

C. STATUS OF OPERATOR *(Enter the appropriate letter into the answer box; if "Other", specify.)*

F = FEDERAL
S = STATE
P = PRIVATE
M = PUBLIC *(other than federal or state)*
O = OTHER *(specify)*

F (specify)

D. PHONE *(area code & no.)*

A

E. STREET OR P.O. BOX

F. CITY OR TOWN

8

G. STATE

H. ZIP CODE

IX. INDIAN LAND

Is the facility located on Indian lands? ☐ YES ☐ NO

X. EXISTING ENVIRONMENTAL PERMITS

A. NPDES *(Discharges to Surface Water)*	**D. PSD** *(Air Emissions from Proposed Sources)*
9 N	9 P
B. UIC *(Underground Injection of Fluids)*	**E. OTHER** *(specify)*
9 U	9 (specify)
C. RCRA *(Hazardous Wastes)*	**E. OTHER** *(specify)*
9 R I L 5 2 1 0 0 2 1 8 3 3	9 (specify)

XI. MAP

Attach to this application a topographic map of the area extending to at least one mile beyond property bounderies. The map must show the outline of the facility, the location of each of its existing and proposed intake and discharge structures, each of its hazardous waste treatment, storage, or disposal facilities, and each well where it injects fluids underground. Include all springs, rivers and other surface water bodies in the map area. See instructions for precise requirements.

XII. NATURE OF BUSINESS *(provide a brief description)*

This permit is for the following Hazardous Waste storage building (drums) located on Rock Island Arsenal. Building 242 is located west of the Project REARM area (building 212W) off of Sylvan Drive. This site will be used for the storage of drummed hazardous wastes which are disposed of off-site by permitted outside contractors.

XIII. CERTIFICATION *(see instructions)*

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this application and all attachments and that, based on my inquiry of those persons immediately responsible for obtaining the information contained in the application, I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

A. NAME & OFFICIAL TITLE *(type or print)*	B. SIGNATURE	C. DATE SIGNED
Richard W. Bregard, Colonel U.S. Army, Commanding	[signature]	27 Jul 90

COMMENTS FOR OFFICIAL USE ONLY

FORM 3 RCRA

EPA

U.S. ENVIRONMENTAL PROTECTION AGENCY

HAZARDOUS WASTE PERMIT APPLICATION

Consolidated Permits Program

(This information is required under Section 3005 of RCRA.)

I. EPA I.D. NUMBER

C	F	I	L	5	2	1	0	0	2	1	8	8	3	T/A	C
															1

FOR OFFICIAL USE ONLY

APPLICATION APPROVED	DATE RECEIVED (yr., mo., & day)	COMMENTS

II. FIRST OR REVISED APPLICATION

Place an "X" in the appropriate box in A or B below *(mark one box only)* to indicate whether this is the first application you are submitting for your facility or a revised application. If this is your first application and you already know your facility's EPA I.D. Number, or if this is a revised application, enter your facility's EPA I.D. Number in Item I above.

A. FIRST APPLICATION *(place an "X" below and provide the appropriate date)*

☐ 1. EXISTING FACILITY *(See instructions for definition of "existing" facility. Complete item below.)*

C 8 — YR. | MO. | DAY — FOR EXISTING FACILITIES, PROVIDE THE DATE (yr., mo., & day) OPERATION BEGAN OR THE DATE CONSTRUCTION COMMENCED *(use the boxes to the left)*

☐ 2. NEW FACILITY *(Complete item below.)*

YR. | MO. | DAY — FOR NEW FACILITIES, PROVIDE THE DATE (yr., mo., & day) OPERATION BEGAN OR IS EXPECTED TO BEGIN

B. REVISED APPLICATION *(place an "X" below and complete Item I above)*

☒ 1. FACILITY HAS INTERIM STATUS

☐ 2. FACILITY HAS A RCRA PERMIT

III. PROCESSES – CODES AND DESIGN CAPACITIES

A. PROCESS CODE – Enter the code from the list of process codes below that best describes each process to be used at the facility. Ten lines are provided for entering codes. If more lines are needed, enter the code(s) in the space provided. If a process will be used that is not included in the list of codes below, then describe the process *(including its design capacity)* in the space provided on the form *(Item III-C)*.

B. PROCESS DESIGN CAPACITY – For each code entered in column A enter the capacity of the process.

1. AMOUNT – Enter the amount.
2. UNIT OF MEASURE – For each amount entered in column B(1), enter the code from the list of unit measure codes below that describes the unit of measure used. Only the units of measure that are listed below should be used.

PROCESS	PROCESS CODE	APPROPRIATE UNITS OF MEASURE FOR PROCESS DESIGN CAPACITY
Storage:		
CONTAINER *(barrel, drum, etc.)*	S01	GALLONS OR LITERS
TANK	S02	GALLONS OR LITERS
WASTE PILE	S03	CUBIC YARDS OR CUBIC METERS
SURFACE IMPOUNDMENT	S04	GALLONS OR LITERS
Disposal:		
[illegible]TION WELL	D79	GALLONS OR LITERS
[illegible]FILL	D80	ACRE-FEET *(the volume that would cover one acre to a depth of one foot)* OR HECTARE-METER
LAND APPLICATION	D81	ACRES OR HECTARES
OCEAN DISPOSAL	D82	GALLONS PER DAY OR LITERS PER DAY
SURFACE IMPOUNDMENT	D83	GALLONS OR LITERS

PROCESS	PROCESS CODE	APPROPRIATE UNITS OF MEASURE FOR PROCESS DESIGN CAPACITY
Treatment:		
TANK	T01	GALLONS PER DAY OR LITERS PER DAY
SURFACE IMPOUNDMENT	T02	GALLONS PER DAY OR LITERS PER DAY
INCINERATOR	T03	TONS PER HOUR OR METRIC TONS PER HOUR: GALLONS PER HOUR OR LITERS PER HOUR
OTHER *(Use for physical, chemical, thermal or biological treatment processes not occurring in tanks, surface impoundments or incinerators. Describe the processes in the space provided; Item III-C.)*	T04	GALLONS PER DAY OR LITERS PER DAY

UNIT OF MEASURE	UNIT OF MEASURE CODE	UNIT OF MEASURE	UNIT OF MEASURE CODE	UNIT OF MEASURE	UNIT OF MEASURE CODE
GALLONS	G	LITERS PER DAY	V	ACRE-FEET	A
LITERS	L	TONS PER HOUR	D	HECTARE-METER	F
CUBIC YARDS	Y	METRIC TONS PER HOUR	W	ACRES	B
CUBIC METERS	C	GALLONS PER HOUR	E	HECTARES	Q
GALLONS PER DAY	U	LITERS PER HOUR	H		

EXAMPLE FOR COMPLETING ITEM III *(shown in line numbers X-1 and X-2 below)*: A facility has two storage tanks, one tank can hold 200 gallons and the other can hold 400 gallons. The facility also has an incinerator that can burn up to 20 gallons per hour.

C DUP T/A C 1

LINE NUMBER	A. PROCESS CODE (from list above)	B. PROCESS DESIGN CAPACITY 1. AMOUNT (specify)	B. PROCESS DESIGN CAPACITY 2. UNIT OF MEASURE (enter code)	FOR OFFICIAL USE ONLY	LINE NUMBER	A. PROCESS CODE (from list above)	B. PROCESS DESIGN CAPACITY 1. AMOUNT	B. PROCESS DESIGN CAPACITY 2. UNIT OF MEASURE (enter code)	FOR OFFICIAL USE ONLY
X-1	S02	600	G		5				
X-2	T03	20	E		6				
1	S01	27,000	G		7				
2					8				
[illegible]					9				
4					10				

III. PROCESSES *(continued)*

C. SPACE FOR ADDITIONAL PROCESS CODES OR FOR DESCRIBING OTHER PROCESSES *(code "T04")*. FOR EACH PROCESS ENTERED HERE INCLUDE DESIGN CAPACITY.

IV. DESCRIPTION OF HAZARDOUS WASTES

A. **EPA HAZARDOUS WASTE NUMBER** – Enter the four–digit number from 40 CFR, Subpart D for each listed hazardous waste you will handle. If you handle hazardous wastes which are not listed in 40 CFR, Subpart D, enter the four–digit number*(s)* from 40 CFR, Subpart C that describes the characteristics and/or the toxic contaminants of those hazardous wastes.

B. **ESTIMATED ANNUAL QUANTITY** – For each **listed waste** entered in column A estimate the quantity of that waste that will be handled on an annual basis. For each **characteristic** or **toxic contaminant** entered in column A estimate the total annual quantity of all the non–listed waste*(s)* that will be handled which possess that characteristic or contaminant.

C. **UNIT OF MEASURE** – For each quantity entered in column B enter the unit of measure code. Units of measure which must be used and the appropriate codes are:

ENGLISH UNIT OF MEASURE	CODE	METRIC UNIT OF MEASURE	CODE
POUNDS	P	KILOGRAMS	K
TONS	T	METRIC TONS	M

If facility records use any other unit of measure for quantity, the units of measure must be converted into one of the required units of measure taking into account the appropriate density or specific gravity of the waste.

D. **PROCESSES**

1. PROCESS CODES:
   For listed hazardous waste: For each **listed** hazardous waste entered in column A select the code*(s)* from the list of process codes contained in Item III to indicate how the waste will be stored, treated, and/or disposed of at the facility.
   For non–listed hazardous wastes: For each characteristic or toxic contaminant entered in column A, select the code*(s)* from the list of process codes contained in Item III to indicate all the processes that will be used to store, treat, and/or dispose of all the non–listed hazardous wastes that possess that characteristic or toxic contaminant.
   Note: Four spaces are provided for entering process codes. If more are needed: (1) Enter the first three as described above; (2) Enter "000" in the extreme right box of Item IV-D(1); and (3) Enter in the space provided on page 4, the line number and the additional code*(s)*.

2. PROCESS DESCRIPTION: If a code is not listed for a process that will be used, describe the process in the space provided on the form.

NOTE: HAZARDOUS WASTES DESCRIBED BY MORE THAN ONE EPA HAZARDOUS WASTE NUMBER – Hazardous wastes that can be described by more than one EPA Hazardous Waste Number shall be described on the form as follows:

1. Select one of the EPA Hazardous Waste Numbers and enter it in column A. On the same line complete columns B,C, and D by estimating the total annual quantity of the waste and describing all the processes to be used to treat, store, and/or dispose of the waste.
2. In column A of the next line enter the other EPA Hazardous Waste Number that can be used to describe the waste. In column D(2) on that line enter "included with above" and make no other entries on that line.
3. Repeat step 2 for each other EPA Hazardous Waste Number that can be used to describe the hazardous waste.

EXAMPLE FOR COMPLETING ITEM IV *(shown in line numbers X-1, X-2, X-3, and X-4 below)* – A facility will treat and dispose of an estimated 900 pounds per year of chrome shavings from leather tanning and finishing operation. In addition, the facility will treat and dispose of three non–listed wastes. Two wastes are corrosive only and there will be an estimated 200 pounds per year of each waste. The other waste is corrosive and ignitable and there will be an estimated 100 pounds per year of that waste. Treatment will be in an incinerator and disposal will be in a landfill.

LINE NO.	A. EPA HAZARD. WASTE NO. *(enter code)*	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEASURE *(enter code)*	D. PROCESSES 1. PROCESS CODES *(enter)*	D. PROCESSES 2. PROCESS DESCRIPTION *(if a code is not entered in D(1))*
X-1	K 0 5 4	900	P	T 0 3 D 8 0	
X-2	D 0 0 2	400	P	T 0 3 D 8 0	
X-3	D 0 0 1	100	P	T 0 3 D 8 0	
X-4	D 0 0 2				*included with above*

 CONTINUE ON PAGE 3

ntinued from page 2.
TE: Photocopy this page before completing if you have more than 26 wastes to list.

Form Approved OMB No. 158-S80004

EPA I.D. NUMBER (enter from page 1)		FOR OFFICIAL USE ONLY	
W	F/A C 1	W DUP	T/A C 2 DUP

IV. DESCRIPTION OF HAZARDOUS WASTES (continued)

LINE NO.	A. EPA HAZARD. WASTE NO. (enter code)	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEASURE (enter code)	D. PROCESSES 1. PROCESS CODES (enter)	D. PROCESSES 2. PROCESS DESCRIPTION (If a code is not entered in D(1))
1	D002	7,850			
2	D006	1,500			
3	D007	3,600			
4	D008	28,000			
5	F001	45,000			
6	F002	11,500			
7	F003	9,000			
8	F004	10,000			
9	F005	4,300			
10	F006	50,000			
11	F010	1,500			
12	[illegible]012	3,100			
13	D003	20,000			
14	D007	25,000			
15	D006	51,000			
16	D001	150,000			
17	D011	3,300			
18					
19					
20					
21					
22					
23					
24					
25					
26					

Continued from the front.

IV. DESCRIPTION OF HAZARDOUS WASTES *(continued)*

E. USE THIS SPACE TO LIST ADDITIONAL PROCESS CODES FROM ITEM D(1) ON PAGE 3.

EPA I.D. NO. *(enter from page 1)*

S												T/A	C
F	I	L	5	2	1	0	0	2	1	8	3	3	6

V. FACILITY DRAWING

All **existing** facilities must include in the space provided on page 5 a scale drawing of the facility *(see instructions for more detail).*

VI. PHOTOGRAPHS

All existing facilities must include photographs *(aerial or ground–level)* that clearly delineate all existing structures; existing storage, treatment and disposal areas; and sites of future storage, treatment or disposal areas *(see instructions for more detail).*

VII. FACILITY GEOGRAPHIC LOCATION

LATITUDE *(degrees, minutes, & seconds)*	LONGITUDE *(degrees, minutes, & seconds)*
41 31 006	090 32 56

VIII. FACILITY OWNER

☒ A. If the facility owner is also the facility operator as listed in Section VIII on Form 1, "General Information", place an "X" in the box to the left and skip to Section IX below.

B. If the facility owner is not the facility operator as listed in Section VIII on Form 1, complete the following items:

1. NAME OF FACILITY'S LEGAL OWNER	2. PHONE NO. *(area code & no.)*
E	

3. STREET OR P.O. BOX	4. CITY OR TOWN	5. ST.	6. ZIP CODE
F	G		

IX. OWNER CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

A. NAME *(print or type)*	B. SIGNATURE	C. DATE SIGNED
Richard W. Bregard, Colonel U.S. Army, Commanding		27 Jul 90

X. OPERATOR CERTIFICATION

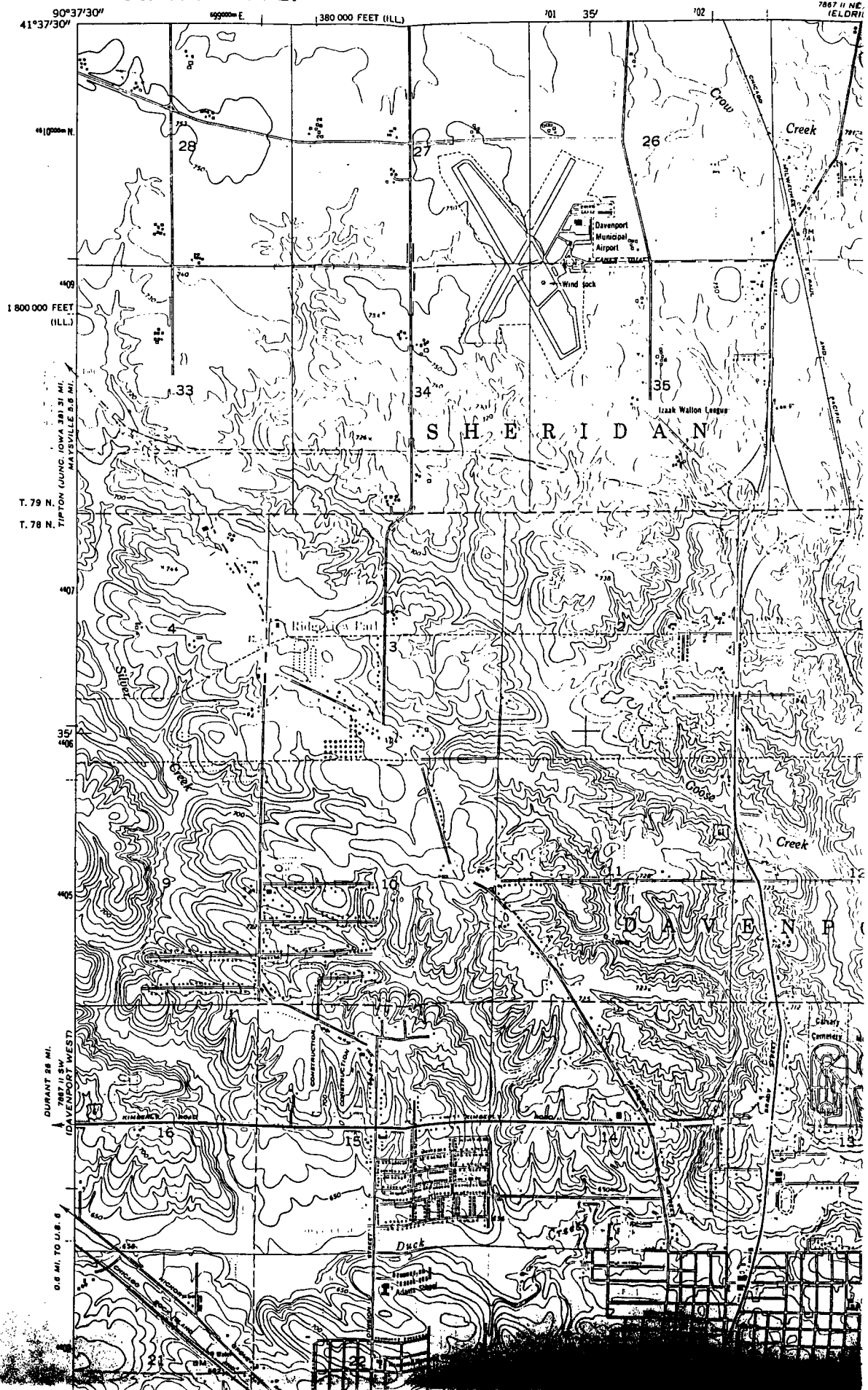
I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

A. NAME *(print or type)*	B. SIGNATURE	C. DATE SIGNED
Richard W. Bregard, Colonel U.S. Army, Commanding		27 Jul 90

CONTINUE ON PAGE 5

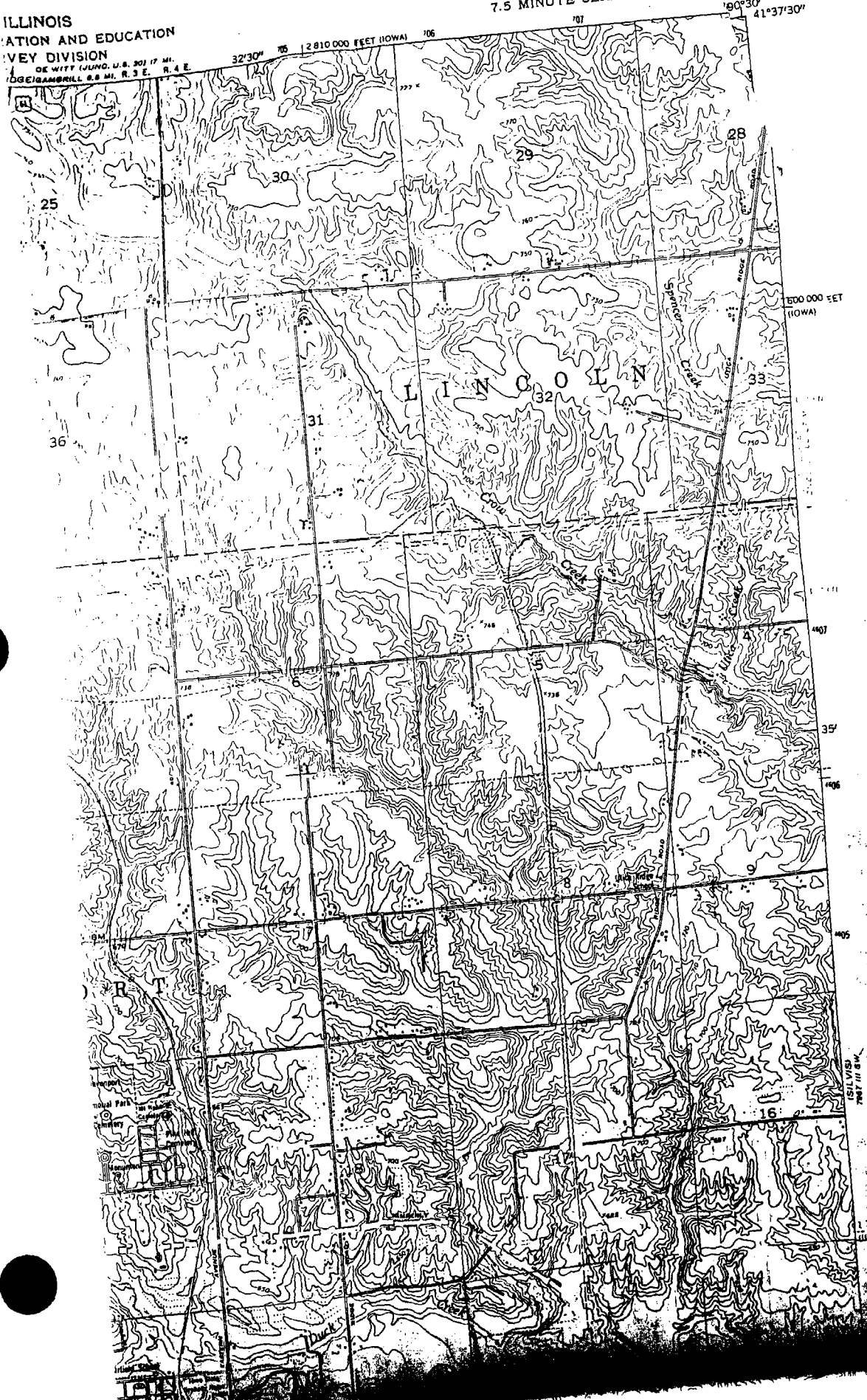
UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

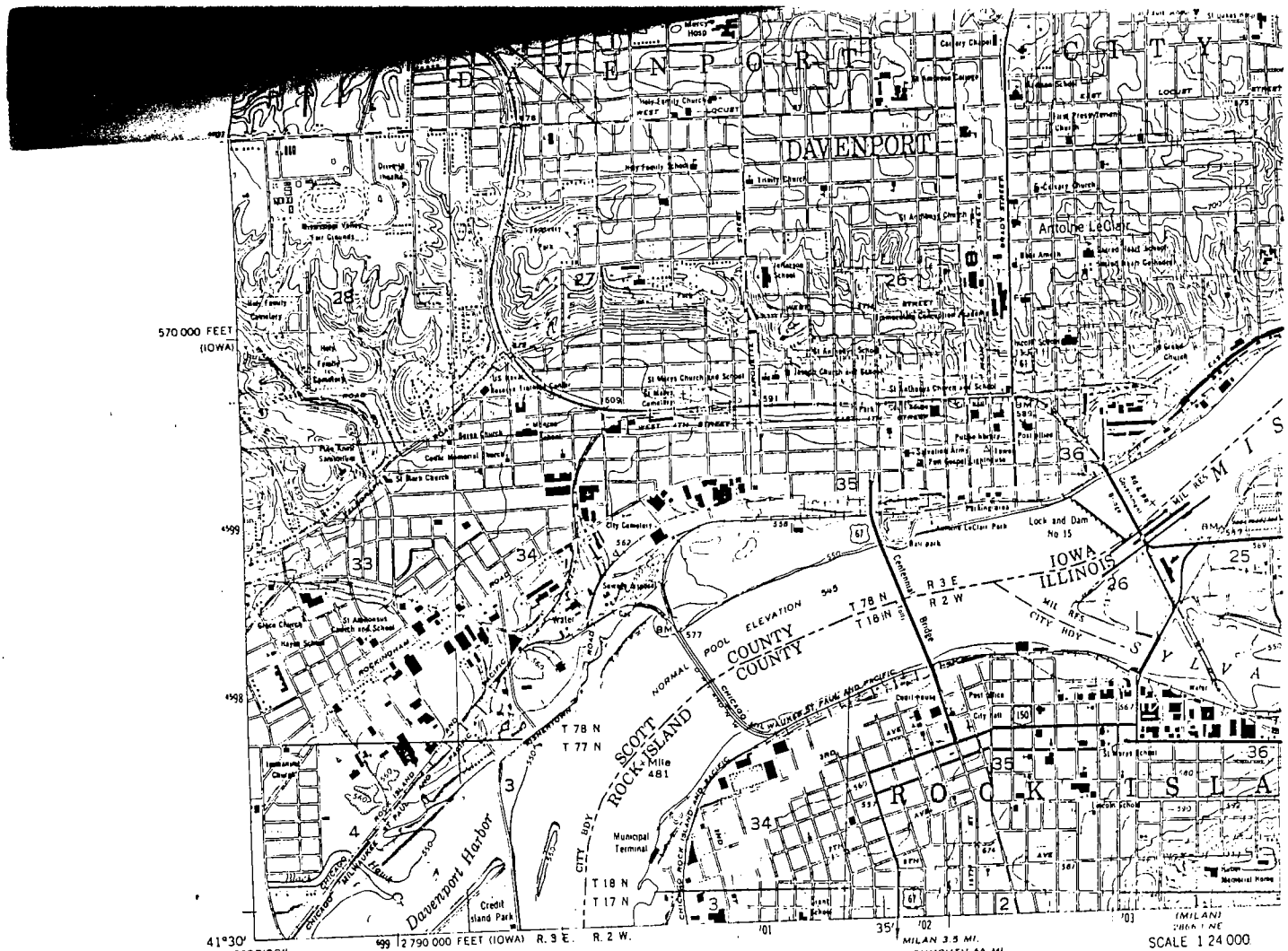
STATE OF
DEPARTMENT OF REGISTE
GEOLOGICAL SUR



ILLINOIS
ATION AND EDUCATION
VEY DIVISION

DAVENPORT EAST QUADRANGLE
IOWA-ILLINOIS
7.5 MINUTE SERIES (TOPOGRAPHIC)





Illinois area mapped by the Geological Survey
Iowa area mapped by the Army Map Service
Edited and published by the Geological Survey

Control by USGS, USC&GS, USCE, and
Mississippi River Commission

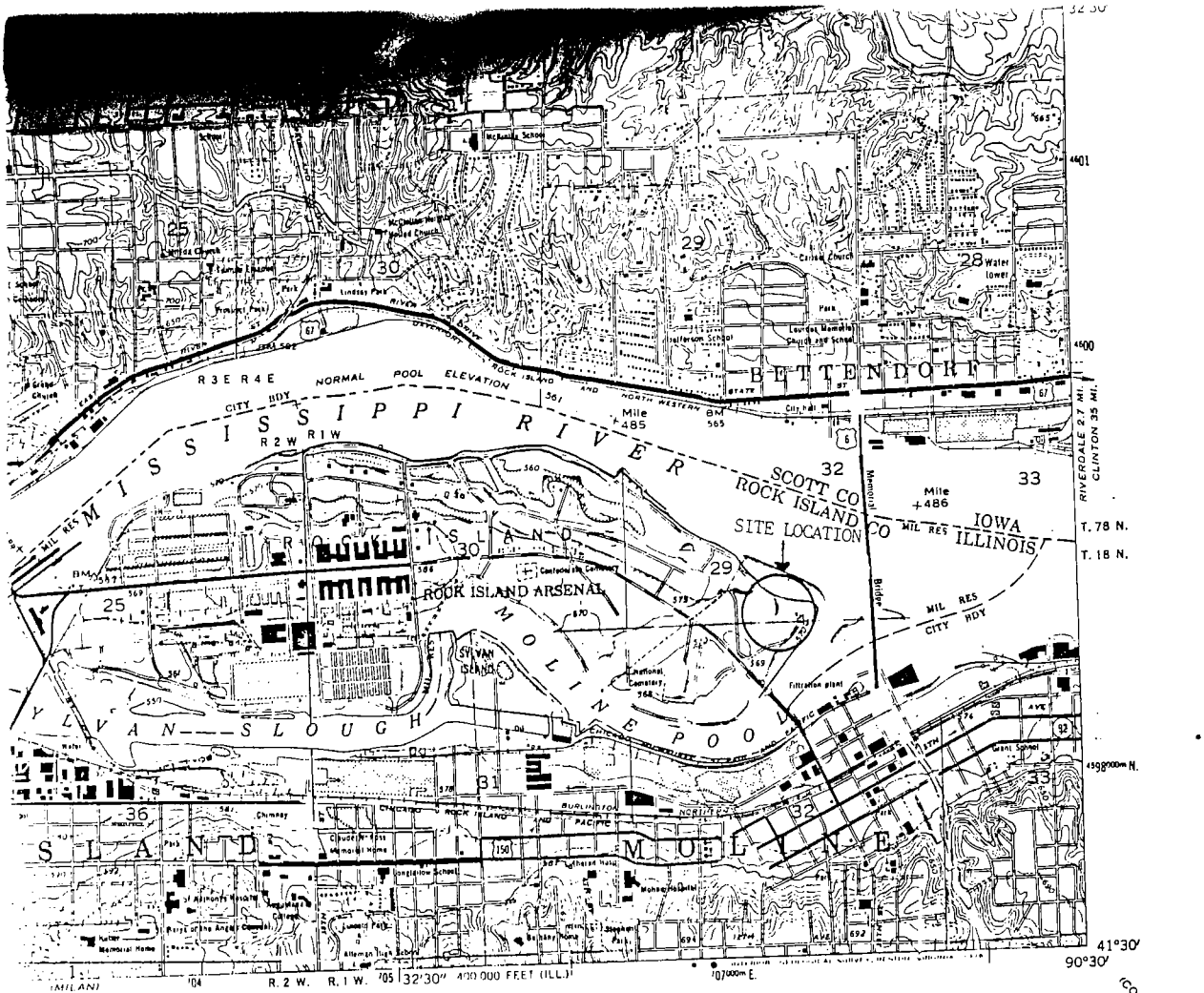
Topography from aerial photographs by photogrammetric methods
Entire map revised and field checked by AMS 1953

Polyconic projection. 1927 North American datum
10,000-foot grids based on Iowa coordinate system,
south zone, and Illinois coordinate system, west zone
1000-metre Universal Transverse Mercator grid ticks,
zone 15, shown in blue

Red tint indicates areas in which only landmark buildings are shown

UTM GRID AND 1975 MAGNETIC NORTH
DECLINATION AT CENTER OF SHEET

THIS MAP COMPLIES WITH NATIONAL MAP AC
FOR SALE BY U. S. GEOLOGICAL SURVEY, DENVER, COLORADO
IOWA GEOLOGICAL SURVEY, IOWA CITY
AND STATE GEOLOGICAL SURVEY, URBAN/
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMB



SCALE 1:24 000

1 MILE

5000 6000 7000 FEET

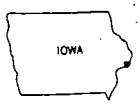
1 KILOMETRE

CONTOUR INTERVAL 10 FEET
DATUM IS MEAN SEA LEVEL DATUM OF 1929

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U.S. GEOLOGICAL SURVEY, DENVER, COLORADO 80225, OR RESTON, VIRGINIA 22092
OR THE U.S. GEOLOGICAL SURVEY, IOWA CITY, IOWA 52240,
OR THE STATE GEOLOGICAL SURVEY, URBANA, ILLINOIS 61801
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

ROAD CLASSIFICATION

Heavy-duty — Light-duty
Medium-duty — Unimproved dirt
U. S. Route — State Route



QUADRANGLE LOCATION

DAVENPORT EAST, IOWA-ILL.
N4130—W9030/7.5

1953

AMS 7867 II SE—SERIES V876

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MAP E CLOSURE PLAN, SIMULATIO
BRANCH, BUILDING 33
U.S. GEOLOGICAL SURVEY
EAST END OF ROCK ISLAND
ARSENAL AREA CIRCLED

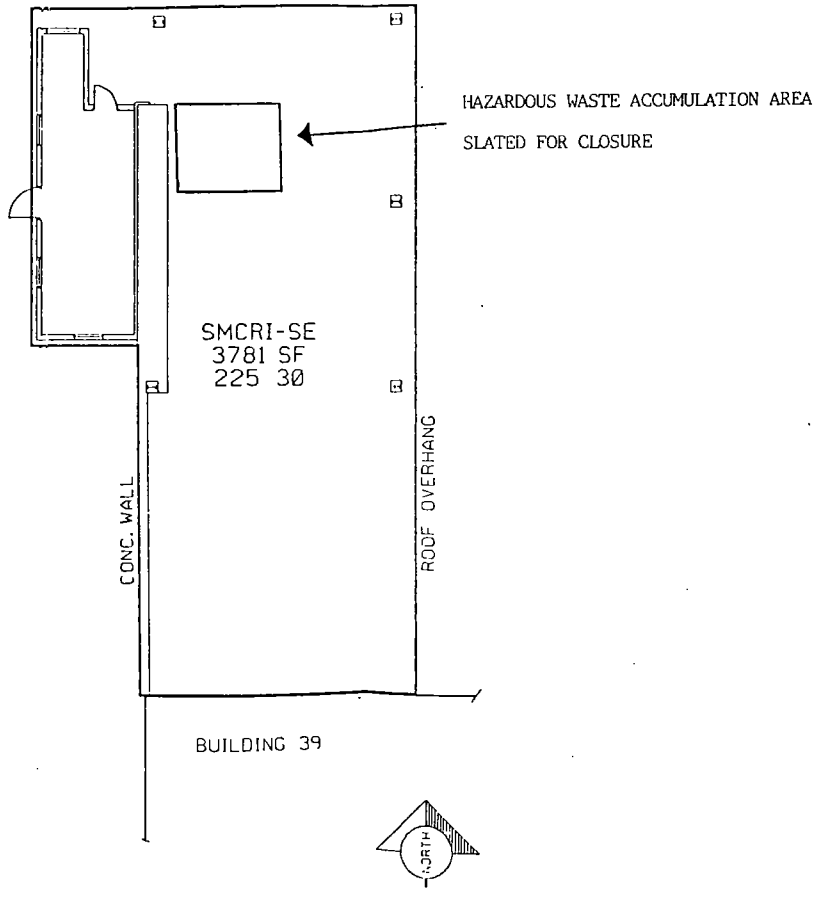


EXHIBIT 3

CLOSURE PLAN, SIMULATION AND TEST BRANCH, BUILDING 33

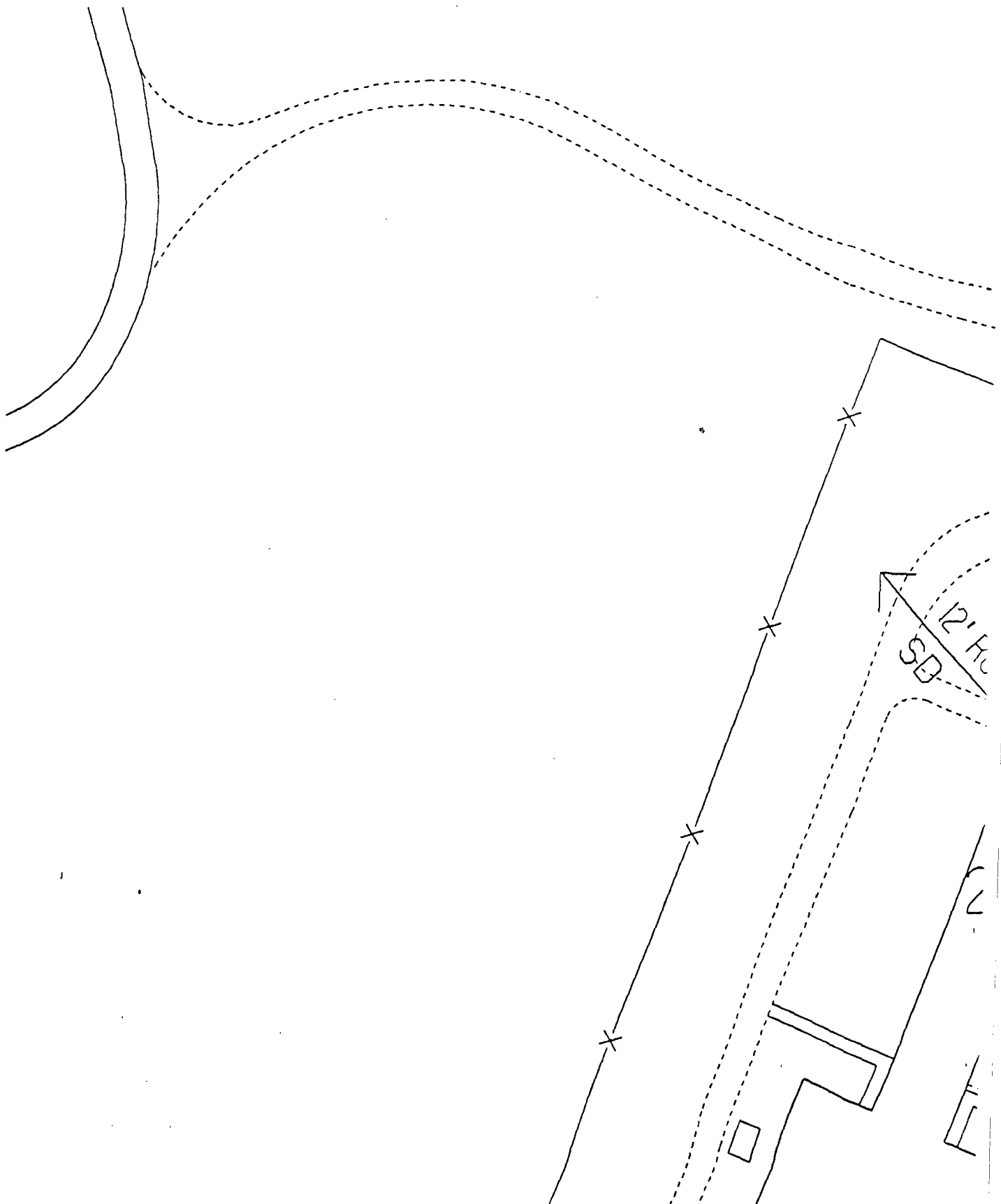
GROSS AREA = 3781 SF
OCT 89

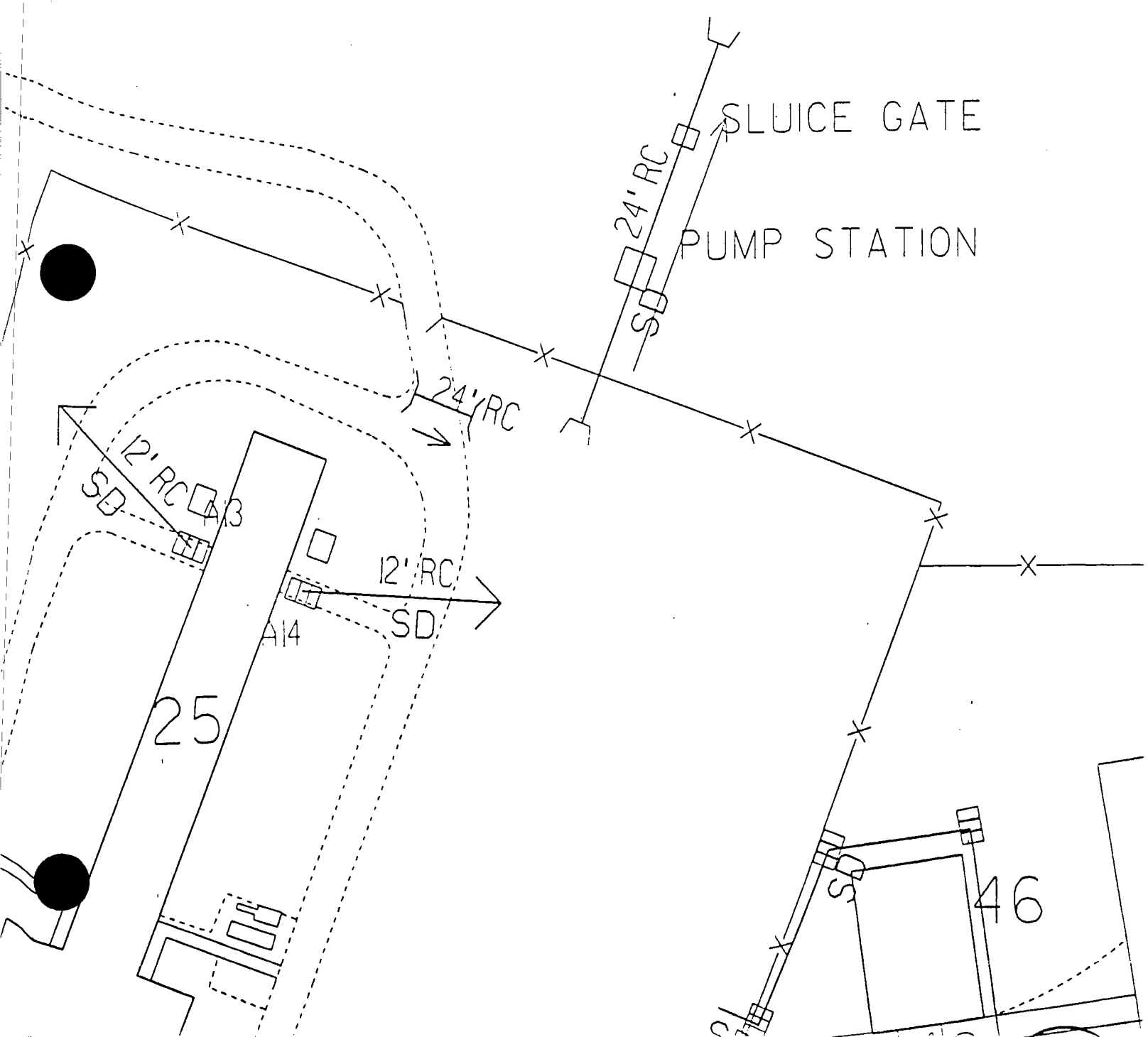
ROCK ISLAND ARSENAL
DIRECTORATE OF ENGINEERING & HOUSING
ENGINEERING & SERVICES BRANCH

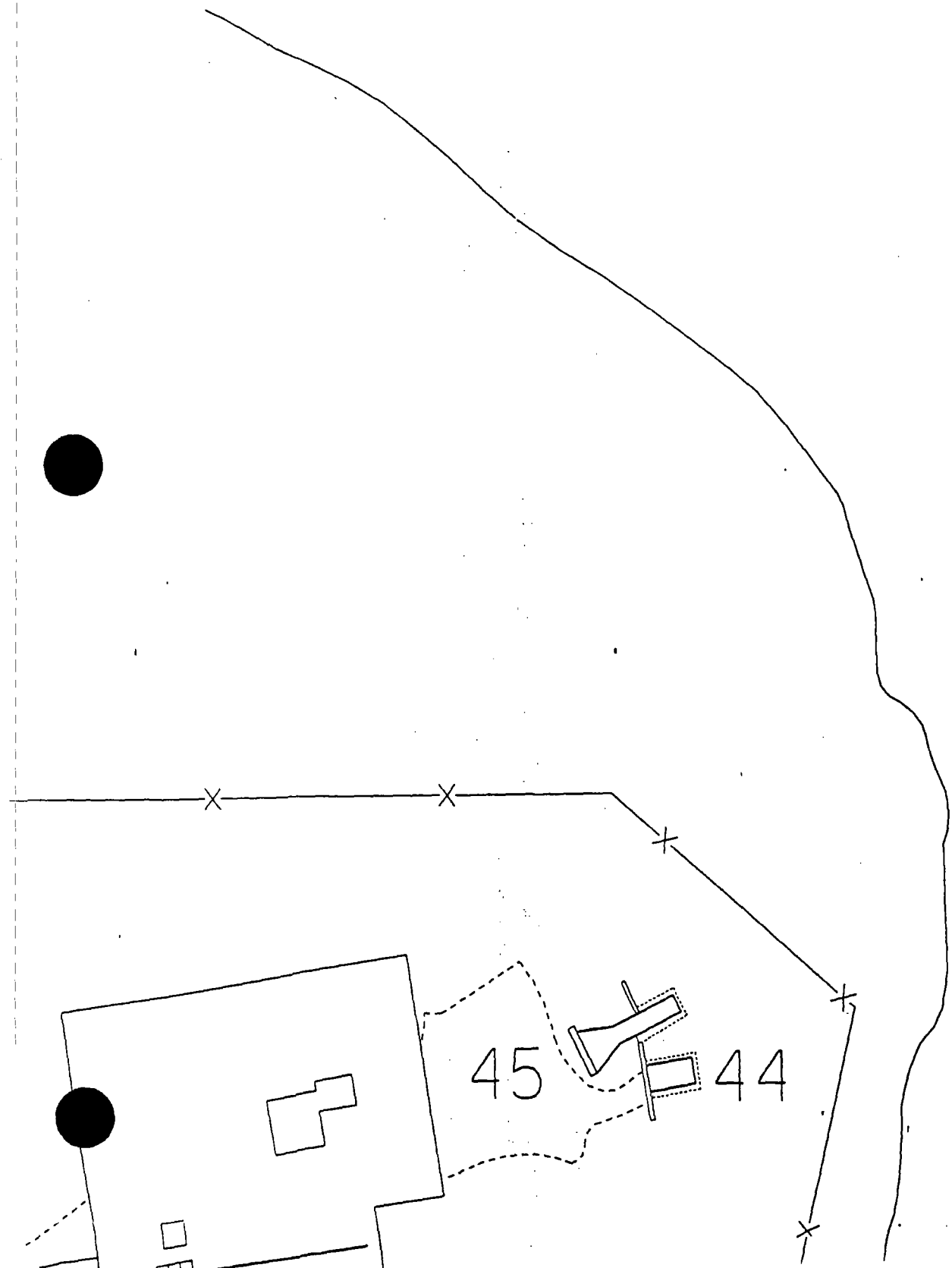
BUILDING 33
FIRST FLOOR

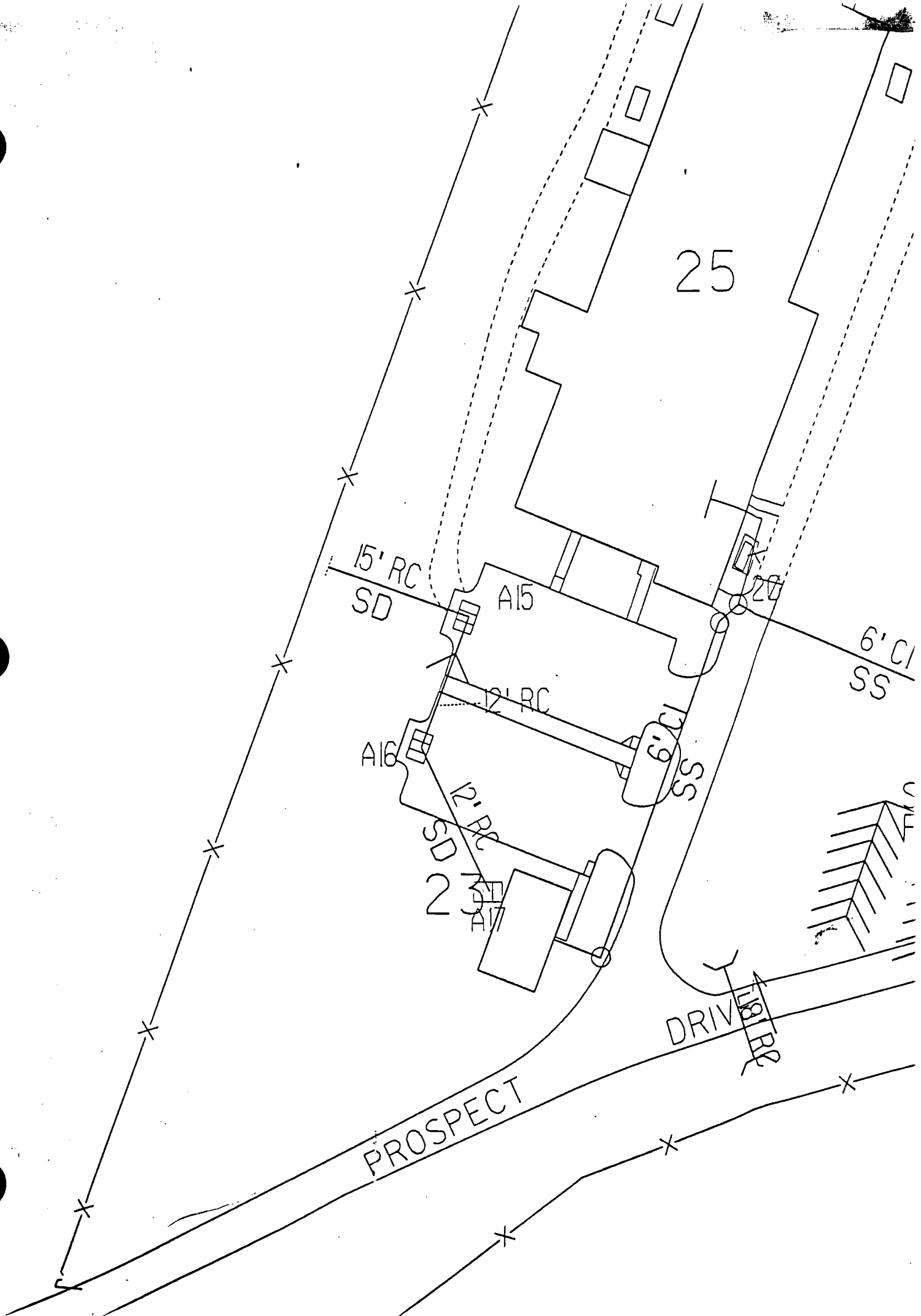
SCALE : 1/16" = 1'-0"

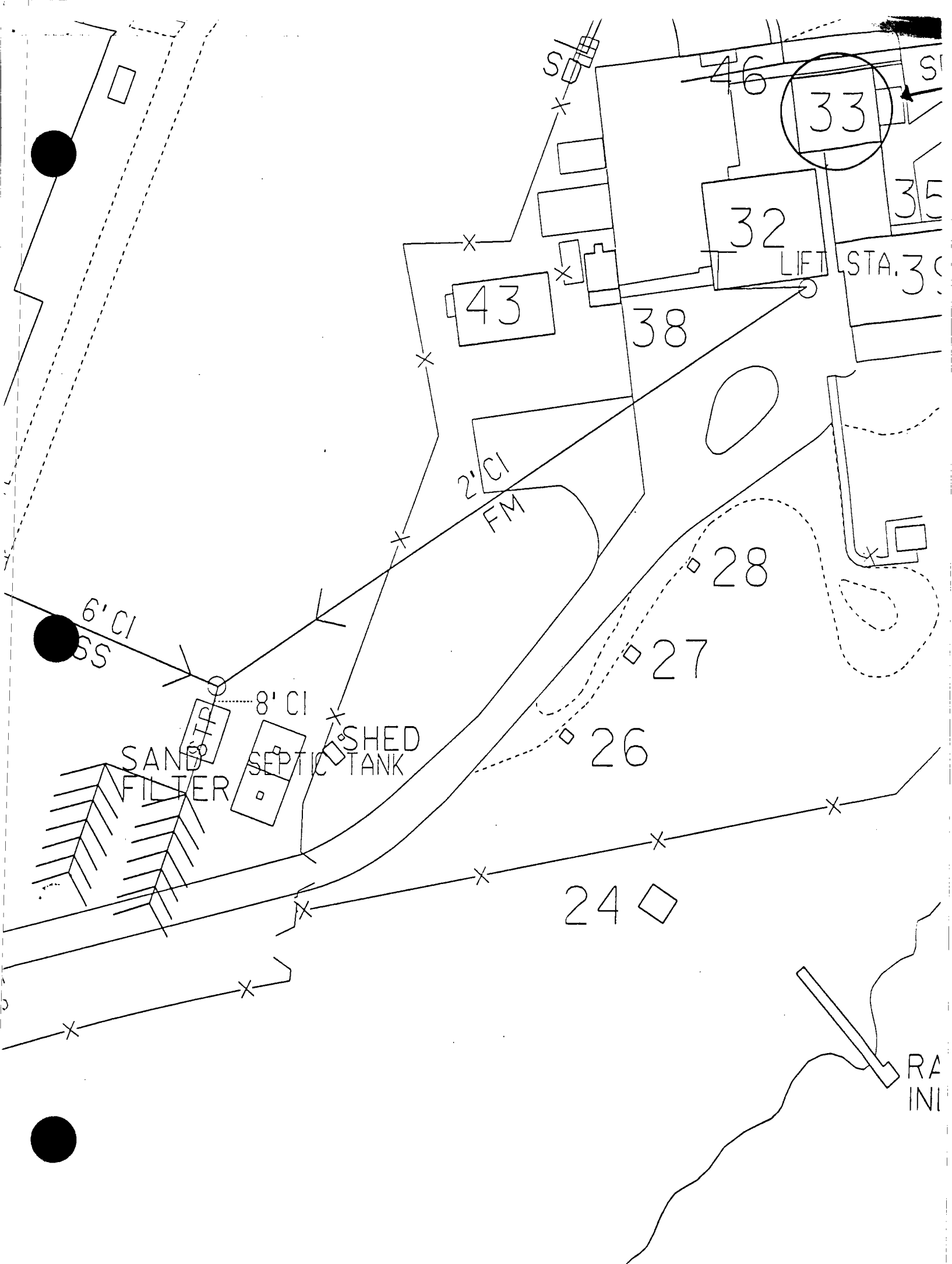
REV. JAN 1983

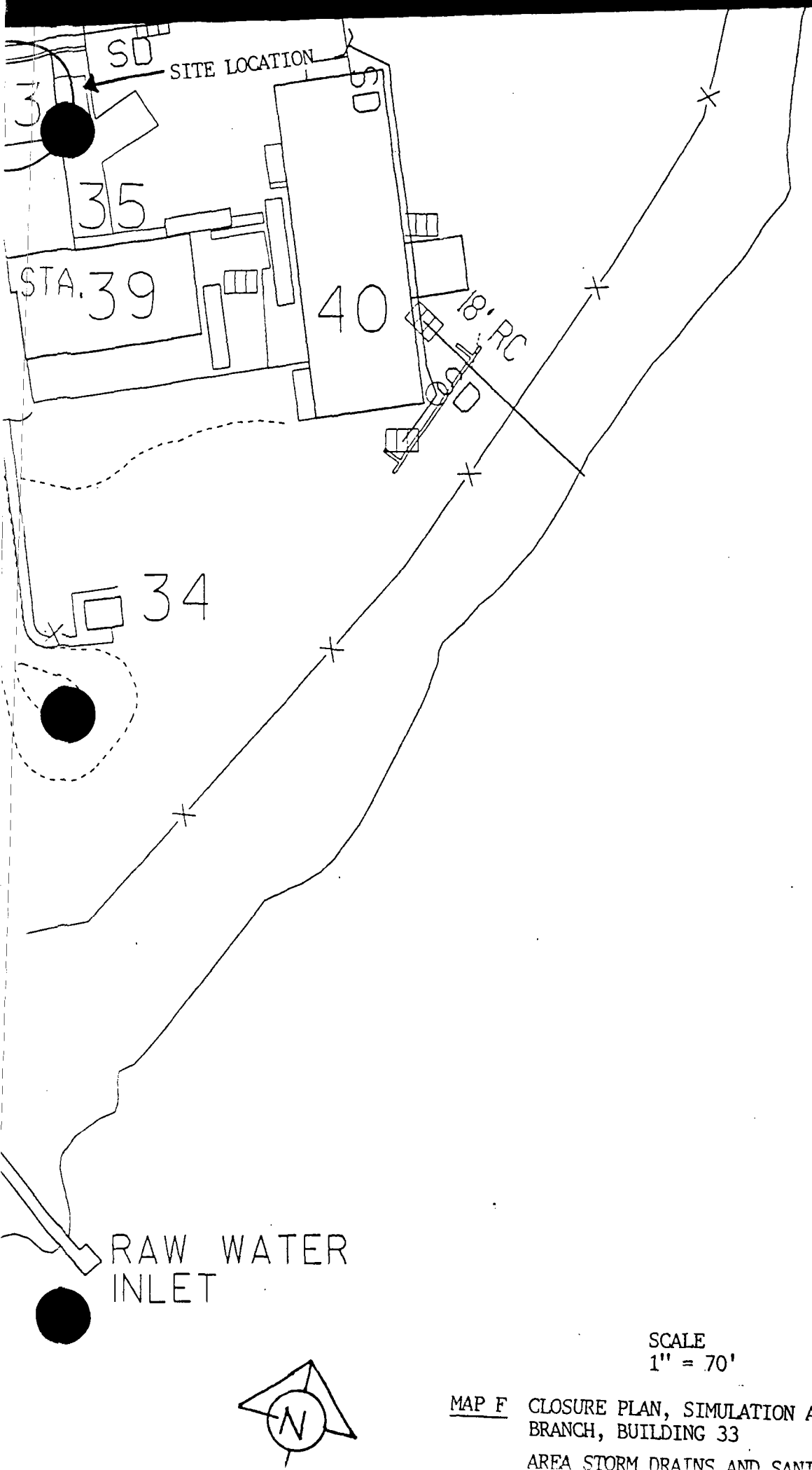

12' H
SD


SLUICE GATE
PUMP STATION
24" RC
SD
24" RC
12" RC
SD
A13
12" RC
SD
A14
25
46
SD


45
44


25
15' RC
SD
A15
20
6' CI
SS
12' RC
A16
6' CI
SS
12' RC
SD
23
A17
DRIVE
PROSPECT


46
33
32
LIFT STA.
43
38
2' CI
FM
28
27
26
24
6' CI
SS
8' CI
SAND
FILTER
SEPTIC TANK
SHED



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SCALE
1" = 70'

MAP F CLOSURE PLAN, SIMULATION AND TEST BRANCH, BUILDING 33

AREA STORM DRAINS AND SANITARY

EXHIBIT 4

DAILY AND ASSOCIATES, ENGINEERS, INC.
APPENDIX A

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APPENDIX A

SOIL CLEANUP LEVELS
SAMPLING PLAN AND ANALYTICAL METHODS
DESCRIPTION OF CONTAMINATED SOIL REMOVAL
DISPOSAL UNIT CLOSURES
DESCRIPTION OF EQUIPMENT CLEANING

Building 33 Satellite/Accumulation Site
Rock Island Arsenal

1 SOIL CLEANUP LEVELS

The cleanup level for each parameter identified as a constituent of a hazardous waste used at the facility will be the greatest of the highest background concentration or the method quantification limit. In the case of benzene, toluene, ethylbenzene and xylenes (BTEX), the generic cleanup objectives specified by the Leaking Underground Storage Tank program will be used. The cleanup levels for the metals will be the regulated TCLP concentrations. Appendix B contains the method quantification limits for all the parameters that may be tested. Based on current knowledge of the site, the levels can be partially described:

	Concentrations (ug/l or ug/kg)		
Parameter	Method Quanit. Limit	Background	Cleanup Level
1,1,1-Trichloroethane	5	*	*
Benzene	5		25
BTEX	20		16,025
Lead, TCLP **			5,000
Cadmium, TCLP **			1,000
Chromium, TCLP **			5,000

* To be determined by background sampling.

** Regulated level for hazardous waste.

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2 SAMPLING PLAN AND ANALYTICAL METHODS

2.1 Introduction

This sampling and analysis plan identifies sampling protocols, analytical methods, and quality assurance/quality control aspects for the Rock Island Arsenal Building 33 Satellite/Accumulation Site closure. The purpose of the plan is to determine the presence (or absence) of contaminants surrounding the hazardous waste storage area. The horizontal and vertical extent of contamination will be defined if any contamination is found.

The site was used for storage of spent "degreasing" solvents, namely 1,1,1-Trichloroethane. Other products that have been stored at Building 33 include used petroleum naphtha and baghouse dust from weapons manufacturing operations. Compounds of environmental concern associated with these waste materials include volatile aromatic hydrocarbons in the petroleum naphtha, and lead, cadmium, chromium, and cyanide from the baghouse dust. Also, the site was previously used as a machine gun firing range. Unspent propellant (gun powder) containing nitrate/nitrite compounds may be present. This plan will determine levels of nitrate/nitrite but not the extent of contamination, since nitrate/nitrite cleanup is beyond the scope of this site closure.

Soil samples will be collected from exploratory boreholes and from the surface runoff/storm sewer outfall which discharges approximately 125 west-northwest of the site. Also, solvent "wipe" samples of the concrete pad surrounding the designated hazardous waste storage area will be collected and analyzed. If encountered, groundwater samples will be collected from the borehole sampling locations.

2.2 Soil Sampling

2.2.1 Exploratory Drilling

Soil sampling will be by eight (8) borings around the accumulation site (see Exhibit 3) and one background soil boring (see Exhibit 2). Previous soil borings in this area indicate that there is an alluvial deposit of silt-clay-sand approximately six feet thick overlying limestone of the Devonian age. Previous soil borings at the Building 33 site found no groundwater.

Soil borings will be conducted using hollow-stem auger methods. Continuous sampling using a split spoon sampler will be used to retrieve soil samples. Because 1,1,1-Trichloroethane is a dense, non-aqueous phase liquid, boreholes will be advanced to bedrock. If pure product has been released to the subsurface through

cracks in the concrete pad, the liquid will move vertically until retained by a confining formation. Movement of any product on the confining layer will be largely governed by the slope of the confining layer. Movement of dissolved product will be dependent on groundwater movement.

Soil samples will be collected every 2.5 feet in each boring and/or at changes in the soil strata. Samples will be collected just above any soil layers, which could be acting as confining layers for product flow or infiltration. A driller's log and visual classification will be provided on each soil boring.

Samples will be placed in two 4-oz. and one 8-oz. I-Chem glass jars with teflon-lined closures. Disposable PVC gloves will be worn by all personnel handling soil samples. Each sample container will be labeled and placed in an ice-packed cooler for transport to the laboratory. The label for each soil boring sample will contain the following information:

US Army Rock Island Arsenal Building 33 Site Closure

Boring No. _____ Depth _____
Date Collected _____
Analysis: _____

Following the completion of each borehole, the augers will be decontaminated with a portable, hot water sprayer. Split spoon samplers will be cleaned with a soapy water scrub, followed by a reagent grade Methanol rinse. If contamination is encountered during drilling, the split spoon sampler will be decontaminated as described above after every use. Borings will be completed beginning with the background and downgradient (west) locations and proceed towards the waste storage area.

Since the site is subject to later removal of contaminated soils, all drill cuttings will be placed in the soil boring holes and compacted with the drill stem. Each bore hole will be capped with 6 inches of concrete and will be flush with the surrounding pavement.

2.2.2 Surface Runoff Soil Sampling

The satellite/accumulation site is located on concrete pavement. Adjacent to the concrete is asphalt pavement and a storm sewer inlet as shown in Exhibit 2. All surface runoff is collected by this inlet which discharges approximately 125 feet east-northeast of the site. Exhibit 2 shows the location of the storm sewer outfall. One (1) soil sample will be collected from the surface

of the outfall area, and placed in two (2) 4-oz. and one 8-oz. I-Chem glass containers. Sample labeling and preservation protocol will be the same as described above.

2.3 Wipe Sampling

Four solvent wipe samples of the concrete pad will be collected in each quadrant of the 11' X 13.5' satellite/accumulation area. Each sample will be retrieved by wiping a ten (10) centimeter square area with "Kimwipe" brand absorbent wipes and reagent grade Methanol. At least five (5) individual wipes will be completed for each sample location. Solvent wipes will be placed in 40 ml I-Chem brand VOA vials, labeled, and placed in an ice-packed cooler.

The reagent grade Methanol solvent container will remain unopened until the time of use in the field. Chemical resistant gloves will be worn by field personnel when collecting the wipe samples. One (1) solvent wipe blank will be prepared in the field and submitted for laboratory analysis with the sample set.

2.4 Groundwater Sampling

If encountered, groundwater samples will be collected directly from the exploratory boreholes. A disposable polyethylene bailer will be used to retrieve each sample. Sample water will be placed in two (2) zero-headspace 40 ml VOA vials, one (1) unfiltered NaOH preserved 1000 ml polyethylene container (intended for cyanide analysis), and one (1) field filtered 1000 ml polyethylene container preserved with concentrated HNO_3 (for metals analysis). Field filtration will be performed with a Nitrogen-pressurized, stainless steel filtration unit and 0.45 micron filter paper.

The purpose of this sampling plan is to determine the presence or absence of contamination emanating from the satellite/ accumulation storage area. If extensive subsurface contamination is encountered, additional borings may be required to determine the extent of soil contamination. If groundwater is affected, permanent groundwater monitoring wells may be required.

2.5 Chemical Analysis

2.5.1 Field Analysis

Soil and water samples will be screened in the field for volatile organic analytes with a portable gas chromatograph, photoionization detector (GC-PID). Quantitative and qualitative identification of Benzene, Toluene, Ethylbenzene, and Xylenes (BTEX) and 1,1,1-Trichloroethane (1,1,1-TCane), Perchloroethylene (PCE), Trichloroethylene (TCE), and cis-Dichloroethylene (cis-DCE) will be made by comparison of retention times to appropriate standard solutions. BTEX compounds are associated with the petroleum naphtha solvent which has been stored in the past at the site. PCE and TCE are other common halogenated solvents that may be present in trace quantities in the industrial grade 1,1,1-TCane degreasing waste. Cis-DCE is a common biodegradation product of PCE and TCE. As with the BTEX hydrocarbons, PCE, TCE, and cis-DCE are easily photoionized and readily detectable to low part per billion levels with the GC-PID. The instrument is not as sensitive to 1,1,1-Trichloroethane and the practical detection limit for the field screening of 1,1,1-TCane in soils is approximately 50 ppb.

The field screening analysis will allow the field investigators immediate data to assess levels of contamination at the site. The suitability of the proposed boring locations can also be verified optimum placement of additional borings can be made if required. The field screening will further serve to eliminate needless laboratory analyses. A bibliography on the use of the GC-PID for field screening is listed in the References

2.5.2 Laboratory Analysis

Soil, water, and wipe samples will be submitted to Daily Analytical Laboratories for SW-846 Method 8240 purge and trap volatile organic analysis. The number of samples analyzed by this method will be determined by the field GC-PID screening results.

If no volatile analytes are detected with the GC-PID, soil and water samples from the borings within the satellite/accumulation storage area will be submitted for 1,1,1- Trichloroethane analyses only. Any "unknown" compounds on the GC/MS chromatograms will be reported if detected.

If volatile constituents are detected with the field screening, those samples will be submitted for complete analysis of all volatile compounds on the Hazardous Substance List (HSL). Solvent wipe samples will also be submitted for complete volatile analyses.

Soil and water samples will also be submitted for cadmium, chromium, lead, cyanide, and nitrate/nitrite analyses. Three borings (besides the background boring) will be analyzed for the metals and nitrate/nitrite. These three borings will be one within the storage area, one sample north and one sample west. If the concentrations measured in these first three borings are similar to the background quality, no further analyses will be performed. All samples from the background boring will be analyzed.

If any samples are above the cleanup levels established in Section 1, the appropriate materiels will be composited for anaylsis of the hazardous waste characteristics.

All analytical work will be completed in a timely manner with care not to exceed holding times for any parameters. All analytical procedures will be done in accordance with SW-846 Methodology.

2.6 Quality Control

The quality control procedures associated with the inorganic analysis will be as follows: one duplicate for every ten samples, one lab control for every fifteen samples, one preparation blank for every twenty samples, and one spike for every twenty samples. Calibration checks will be performed as needed for the various instruments utilized for analysis.

The organic quality control procedures are as follows: One method blank is to be performed for every twenty analyses. A surrogate spike will be added to all samples analyzed. Calibration checks will be performed as needed for the instrument.

A complete laboratory Quality Assurance Plan (QAP) detailing all routine quality control protocol is available on request.

2.7 Personnel Safety

All sampling and field work will be completed in compliance with the Site Safety Plan and Standard Operation Procedures (pursuant to 29 CFR 1910.120) to be furnished by each contractor.

3 DESCRIPTION OF CONTAMINATED SOIL REMOVAL

It is planned that all contaminated soil and pavement will be removed. Closure methodology is discussed in Section 4.

4 DISPOSAL UNIT CLOSURES

4.1 Removal of Contaminated Materials

The Building 33 satellite/accumulation site will be closed by removing all residues and contaminated material to the cleanup objectives described in Section 3. If the wipe samples indicated contamination levels above the method quantification limit, the 11' X 13.5' area will be triple rinsed by steam cleaning. The quantity of water generated will be minimized and collected by absorbent pillows and materials. The contaminated materials from this operation will be placed in drums for appropriate disposal.

All pavement and soil identified as contaminated based on the site investigation and cleanup objectives will be removed and disposed as a hazardous waste. The material will be place immediately in trucks for immediate transport to a permitted disposal facility.

4.2 Personal Safety

All construction work will be completed in compliance with the Site Safety Plan and Standard Operation Procedures (pursuant to 29 CFR 1910.120) to be furnished by each contractor.

4.3 Description of Equipment Cleaning

If removal of contaminated soil, pavement or water is required, equipment contact with the material will be minimized. All equipment which may have been in contact with the contaminated material will be steam cleaned and the rinse water contained for proper disposal.

REFERENCES

Selected Bibliography on the use of Field Screening Instrumentation for the Determination of Volatile Organics

Clark, A.E., Lataille, M., Taylor, E.L., The Use of a Portable Gas Chromatograph for Rapid Screening of Samples for Purgeable Organic Compounds in the Field and in the Lab, USEPA-Region I Laboratory, 60 Westview Street, Lexington, MA 02173, June 29, 1973.

Clay, Paul F., Spittler, Dr. T.M., The Use of Portable Instrumentations in Hazardous Waste Site Characterizations, Proceedings of the National Conference on Management of Uncontrolled Hazardous Waste Sites, pp. 40-44, 1982.

Spittler, Dr. T.M., Use of Portable Organic Vapor Detectors for Hazardous Waste Site Investigations, Presentation at the USEPA National Conference on Management of Uncontrolled Hazardous Waste Sites, October 15-17, 1980.

Spittler, Dr. T.M., Siscanaw, R.I., Lataille, M.M., and Parks, P.A., Correlation Between Field GC Measurement of Volatile Organics and Laboratory Confirmation of Collected Field Samples Using the GC/MS, Unpublished report co-authored by USEPA-Region I Laboratory and University of Massachusetts, Amherst, MA personnel.

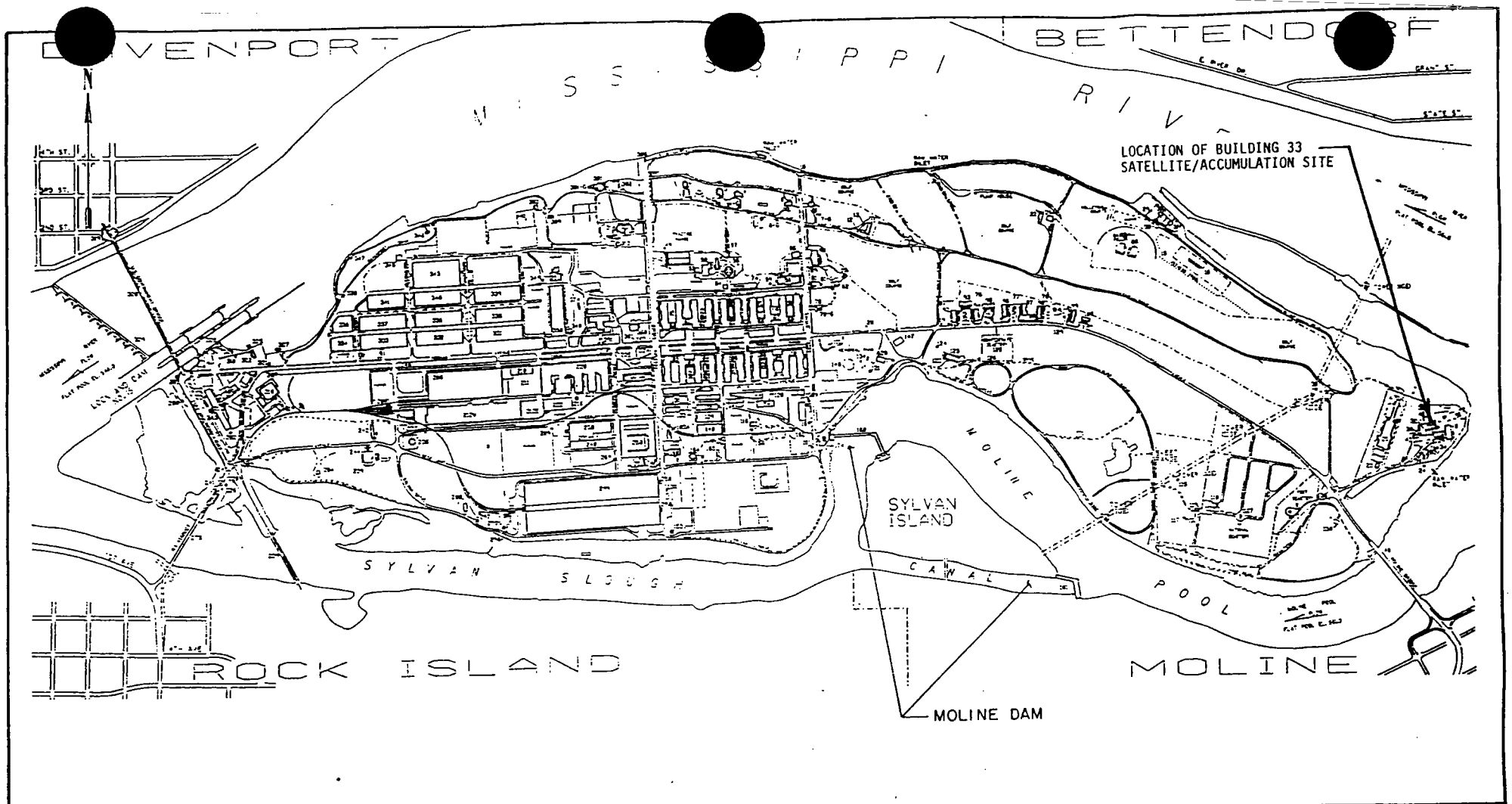


EXHIBIT 1
LOCATION MAP
BUILDING 33 SATELLITE/
ACCUMULATION SITE

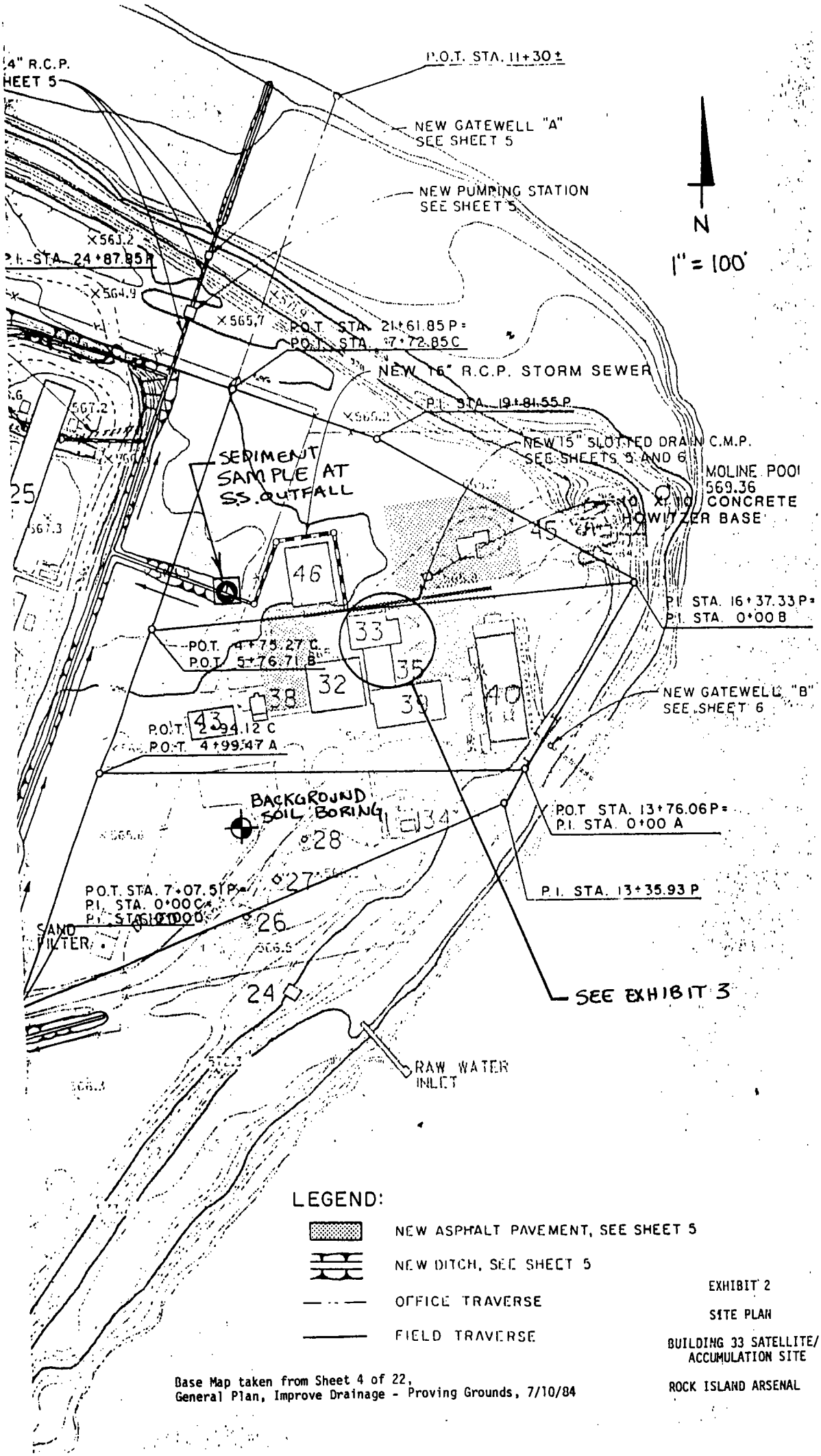
ROCK ISLAND ARSENAL

ROCK ISLAND ARSENAL
ROCK ISLAND, ILLINOIS 61299-5000

REDUCED SIZE PRINT REV. DEC 1988

5680.03

Prepared by DAILY & ASSOCIATES, ENGINEERS, INC. CHAMPAIGN, PEORIA, & BLOOMINGTON, ILLINOIS



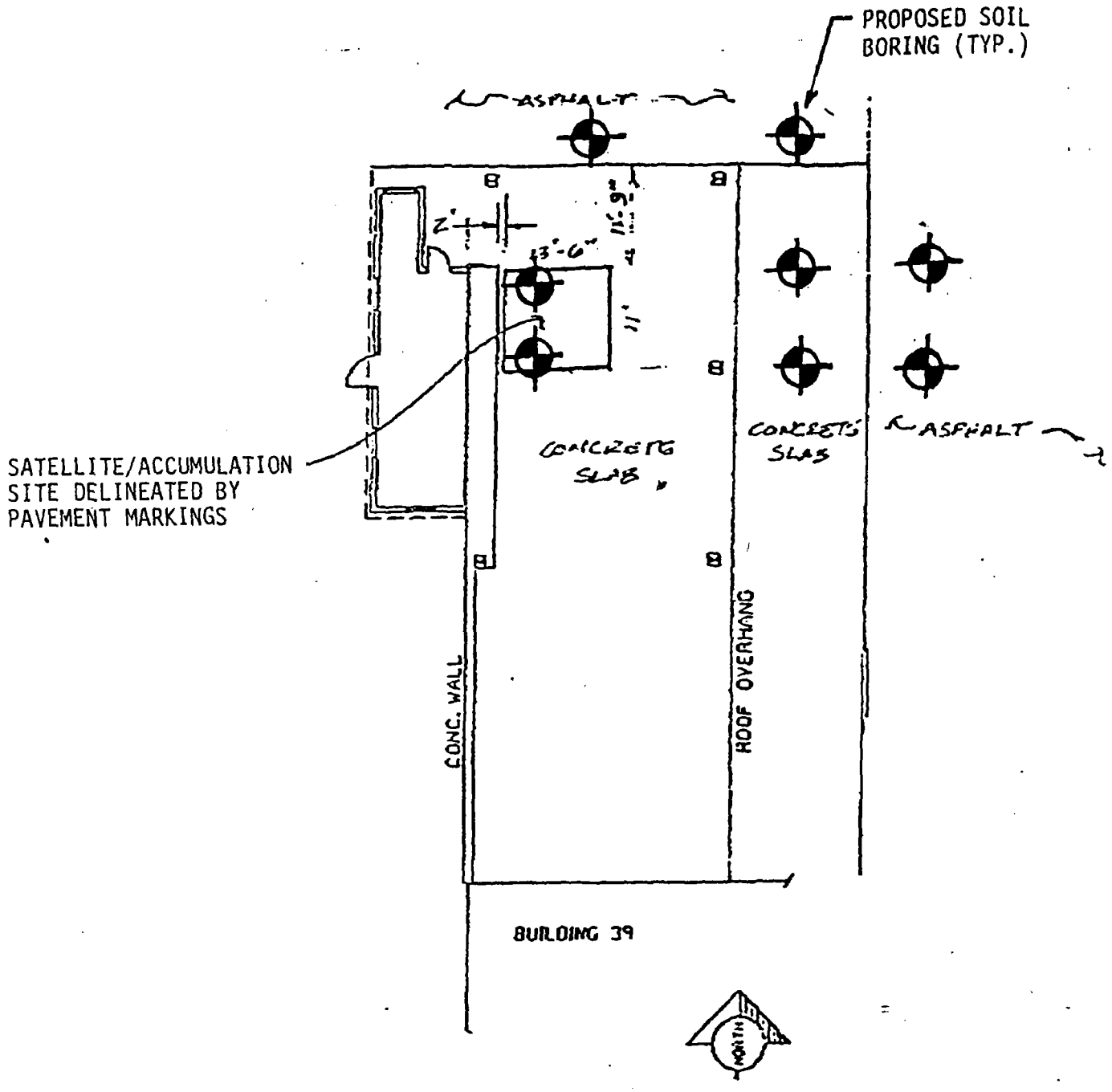
Base Map taken from Sheet 4 of 22,
General Plan, Improve Drainage - Proving Grounds, 7/10/84

EXHIBIT 2

SITE PLAN

BUILDING 33 SATELLITE/
ACCUMULATION SITE

ROCK ISLAND ARSENAL

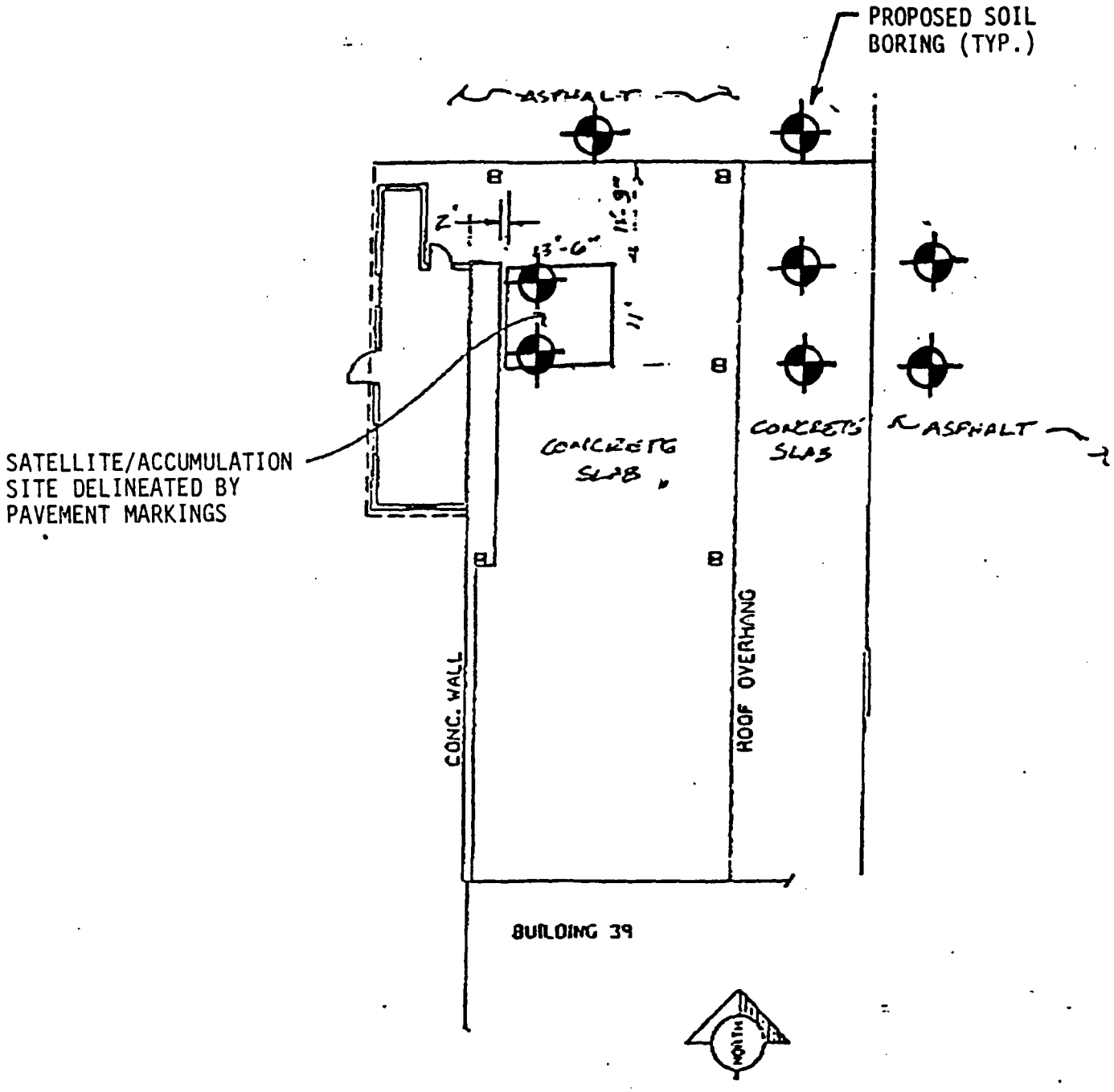


SCALE: 1" = 20'

EXHIBIT 3

DETAIL OF BUILDING 33 SATELLITE/ACCUMULATION SITE

ROCK ISLAND ARSENAL



SCALE: 1" = 20'

EXHIBIT 3

DETAIL OF BUILDING 33 SATELLITE/ACCUMULATION SITE

ROCK ISLAND ARSENAL

EXHIBIT 5

DAILY AND ASSOCIATES, ENGINEERS, INC.
APPENDIX B

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APPENDIX B

METHOD QUANTIFICATION LIMITS
AND HAZARDOUS SUBSTANCE LIST

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Physical/Chemical Parameters

Parameter	Method	Method Quantitation Limit	
Acidity	Titration, USEPA #305.1	4	mg/l
Alkalinity	Titration, USEPA #310.2	4	mg/l
BOD	Incubation, USEPA #405.1	2	mg/l
Bottom Sediment and Water	ASTM D96-73	0.01	% wt/wt
Boron	Curcumin, USEPA #212.3	0.06	mg/l
Bromide	Phenol Red, SM #405	0.05	mg/l
BTU	Bomb Calorimeter ASTM D2015	N/A	
Calcium	Titration, USEPA #215.2	4	mg/l
COD, hi	Ampule	50	mg/l
COD, lo	Reflux, USEPA #410.2	5	mg/l
Chloride	Titration, USEPA #325.3, SW-9252	4	mg/l
Chlorine	DPD, USEPA #330.5	0.1	mg/l
Color	Spectrometric, SM #204, B.	N/A	
Chromium, Hex.	Diphenyl carbizide, S.M. #312.B.,		
aqueous	SW-7196	0.02	mg/l
non-aqueous	SW-3060	0.2	mg/kg
Cyanide	Barb. Acid, USEPA #335.2, SW-9010	0.01	mg/l
Dissolved Oxygen	Titration, USEPA #360.2	0.1	mg/l
Flashpoint	PMCC ASTM D93, SW-1010	Ambient	
Fluoride	Electrode, USEPA #340.2	0.3	mg/l
Oil & Grease			
aqueous	Sep. funnel, w/		
gravimetric	USEPA #413.1, SW-9070	1	mg/l
infra-red	USEPA #413.2	1	mg/l
non-aqueous	Soxhlet, w/		
gravimetric	SM 503D, SW-9071	50	mg/kg
infra-red	SM 503D & 503B	50	mg/kg
Halogen, Total	Microcoulometric, SW-9020	50	mg/kg
Magnesium	Titration, SM 318,C.	4	mg/l
Petroleum Hydrocarbons	Silica Gel, USEPA #418.1		
% Water	Karl Fischer	250	mg/kg
Nitrite	Brucine USEPA 354.1	0.02	mg/l
Nitrate	Brucine USEPA 352.1, SW-9200	0.02	mg/l
Nitrogen, Ammonia			
aqueous	Electrode USEPA 350.3	0.5	mg/l
	Phenate SM 417C	0.01	mg/l
non-aqueous	Electrode USEPA 350.2 & 350.3	2.5	mg/l
Nitrogen, Kjeldahl	Electrode USEPA 351.4	2.5	mg/l
pH	Electrode, SW-9040, SW-9045	N/A	
Phenol, hi	4-AAP USEPA 420.1, SW-9065	0.1	mg/l
Phenol, lo	Chloroform SM 510B	0.005	mg/l
Phosphate	Ascorbic Acid USEPA 365.3	0.015	mg/l
Silica	Spectrometric USEPA 370.1	0.02	mg/l
Solids, Dissolved	Gravimetric USEPA 160.1	20	mg/l
Solids, Suspended	Gravimetric USEPA 160.2	2	mg/l

USEPA — Method of analysis, 1979 Edition, as amended.
SM — Standard Methods, 16th Edition.
SW — USEPA's SW-846, 3rd Ed.

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Trace Metal Parameters

Parameter	Methods	Method Quantitation Limit (10)
Aluminum	ICP, USEPA #200.7, SW-6010	65 ug/l
Antimony	ICP, USEPA #200.7, SW-6010	40 ug/l
Antimony	GFAA, USEPA #204.2, SW-7041	13 ug/l
Arsenic	ICP, USEPA #200.7, SW-6010	30 ug/l
Arsenic	GFAA, USEPA #206.2, SW-7060	2 ug/l
Barium	ICP, USEPA #200.7, SW-6010	2 ug/l
Beryllium	ICP, USEPA #200.7, SW-6010	2 ug/l
Boron	ICP, USEPA #200.7, SW-6010	3 ug/l
Cadmium	ICP, USEPA #200.7, SW-6010	3 ug/l
Cadmium	GFAA, USEPA #213.2, SW-7131	0.1 ug/l
Calcium	ICP, USEPA #200.7, SW-6010	0.3 ug/l
Chromium	ICP, USEPA #200.7, SW-6010	10 ug/l
Cobalt	ICP, USEPA #200.7, SW-6010	20 ug/l
Copper	ICP, USEPA #200.7, SW-6010	10 ug/l
Gold	AAS, USEPA #231.1	10 ug/l
Iron	ICP, USEPA #200.7, SW-6010	8 ug/l
Lanthanum	ICP	8 ug/l
Lead	ICP, USEPA #200.7, SW-6010	45 ug/l
Lead	GFAA, USEPA #239.2, SW-7421	5 ug/l
Lithium	ICP	3 ug/l
Magnesium	ICP, USEPA #200.7, SW-6010	0.5 ug/l
Manganese	ICP, USEPA #200.7, SW-6010	4 ug/l
Mercury	Cold Vapor, USEPA #245.1, SW-7470, 7471	0.2 ug/l
Mercury	ICP	12 ug/l
Molybdenum	ICP, USEPA #200.7, SW-6010	5 ug/l
Nickel	ICP, USEPA #200.7, SW-6010	30 ug/l
Palladium	ICP	30 ug/l
Phosphorous	ICP	20 ug/l
Potassium	ICP, USEPA #200.7, SW-6010	20 ug/l
Selenium	ICP, USEPA #200.7, SW-6010	75 ug/l
Selenium	GFAA, USEPA #270.2, SW-7740	5 ug/l
Silicon	ICP, USEPA #200.7, SW-6010	10 ug/l
Silver	ICP, USEPA #200.7, SW-6010	5 ug/l
Sodium	ICP, USEPA #200.7, SW-6010	10 ug/l
Strontium	ICP	0.2 ug/l
Sulfur	ICP, USEPA #200.7, SW-6010	30 ug/l
Thallium	ICP, USEPA #200.7, SW-6010	40 ug/l
Thallium	GFAA, USEPA #279.2, SW-7840	5 ug/l
Titanium	ICP	2 ug/l
Tin	ICP	20 ug/l
Tungsten	ICP	15 ug/l
Vanadium	ICP, USEPA #200.7, SW-6010	4 ug/l
Zinc	ICP, USEPA #200.7, SW-6010	2 ug/l

(10) Limits which can be routinely achieved on real-world, aqueous samples.

Volatiles, GC/MS

		Practical Quantitation Limits	
		aqueous	non-aqueous
Chloromethane	SW-8240	10 ug/l	10 ug/kg
Bromomethane		10 ug/l	10 ug/kg
Vinyl Chloride		10 ug/l	10 ug/kg
Chloroethane		10 ug/l	10 ug/kg
Methylene chloride		5 ug/l	5 ug/kg
Acetone		10 ug/l	10 ug/kg
Carbon disulfide		5 ug/l	5 ug/kg
1, 1-Dichloroethene		5 ug/l	5 ug/kg
1, 1-Dichloroethane		5 ug/l	5 ug/kg
1, 2-Dichlorothene (total)		5 ug/l	5 ug/kg
Chloroform		5 ug/l	5 ug/kg
1, 2-Dichloroethane		5 ug/l	5 ug/kg
2-Butanone (MEK)		10 ug/l	10 ug/kg
1, 1, 1-Trichloroethane		5 ug/l	5 ug/kg
Carbon tetrachloride		5 ug/l	5 ug/kg
Vinyl acetate		10 ug/l	10 ug/kg
Bromodichloromethane		5 ug/l	5 ug/kg
1, 2-Dichloropropane		5 ug/l	5 ug/kg
tr-1, 3-Dichloropropene		5 ug/l	5 ug/kg
Trichloroethylene		5 ug/l	5 ug/kg
Benzene		5 ug/l	5 ug/kg
Dibromochloromethane		5 ug/l	5 ug/kg
cis-1, 3-Dichloropropene		5 ug/l	5 ug/kg
1, 1, 2-Trichloroethane		5 ug/l	5 ug/kg
2-Chloroethylvinylether		5 ug/l	5 ug/kg
Bromoform		5 ug/l	5 ug/kg
4-Methyl-2-pentanone (MIBK)		10 ug/l	10 ug/kg
2-Hexanone (MBK)		10 ug/l	10 ug/kg
1, 1, 2, 2-Tetrachloroethane		5 ug/l	5 ug/kg
Tetrachloroethylene		5 ug/l	5 ug/kg
Toluene		5 ug/l	5 ug/kg
Chlorobenzene		5 ug/l	5 ug/kg
Ethylbenzene		5 ug/l	5 ug/kg
Styrene		5 ug/l	5 ug/kg
Total Xylenes		5 ug/l	5 ug/kg
OTHERS:			
Acrolein		50 ug/l	50 ug/kg
Acrylonitrile		50 ug/l	50 ug/kg
1, 3-Dichlorobenzene		5 ug/l	5 ug/kg
1, 2-Dichlorobenzene		5 ug/l	5 ug/kg
1, 4-Dichlorobenzene		5 ug/l	5 ug/kg
1, 1, 1, 2-Tetrachloroethane		5 ug/l	5 ug/kg
Trichlorofluoromethane		5 ug/l	5 ug/kg

Other compounds are also available.
Please inquire.

DA

Base-Neutral Extractables, GC/MS

		Practical Quantitation Limits aqueous	non-aqueous
1. N-nitrosodimethylamine	SW-8270	10 ug/l	330 ug/kg
2. Bis (2-chloroethyl) ether		10 ug/l	330 ug/kg
3. 1, 3-Dichlorobenzene		10 ug/l	330 ug/kg
4. 1, 4-Dichlorobenzene		10 ug/l	330 ug/kg
5. 1, 2-Dichlorobenzene		10 ug/l	330 ug/kg
6. Bis (2-chloroisopropyl) ether		10 ug/l	330 ug/kg
7. N-nitrosodi-n-propylamine		10 ug/l	330 ug/kg
8. Hexachloroethane		10 ug/l	330 ug/kg
9. Nitrobenzene		10 ug/l	330 ug/kg
10. Isophorone		10 ug/l	330 ug/kg
11. Bis (2-chloroethoxy) methane		10 ug/l	330 ug/kg
12. 1, 2, 4-Trichlorobenzene		10 ug/l	330 ug/kg
13. Hexachlorobutadiene		10 ug/l	330 ug/kg
14. Hexachlorocyclopentadiene		10 ug/l	330 ug/kg
15. Dimethyl phthalate		10 ug/l	330 ug/kg
16. 2, 6-Dinitrotoluene		10 ug/l	330 ug/kg
17. 2, 4-Dinitrotoluene		10 ug/l	330 ug/kg
18. 4-Chlorophenyl phenyl ether		10 ug/l	330 ug/kg
19. Diethyl phthalate		10 ug/l	330 ug/kg
20. 1, 2-Diphenylhydrazine		10 ug/l	330 ug/kg
21. N-nitrosodiphenylamine		10 ug/l	330 ug/kg
22. 4-Bromophenyl phenyl ether		10 ug/l	330 ug/kg
23. Hexachlorobenzene		10 ug/l	330 ug/kg
24. Di-n-butyl phthalate		10 ug/l	330 ug/kg
25. Benzidine		80 ug/l	2600 ug/kg
26. Butyl benzyl phthalate		10 ug/l	330 ug/kg
27. Bis (2-ethylhexyl) phthalate		10 ug/l	330 ug/kg
28. 3, 3-Dichlorobenzidine		20 ug/l	660 ug/kg
29. Di-n-octyl phthalate		10 ug/l	330 ug/kg
30. 2-Chloronaphthalene		10 ug/l	330 ug/kg
OTHERS:			
iso-Propylbenzene		10 ug/l	330 ug/kg
n-Propylbenzene		10 ug/l	330 ug/kg
1, 3, 5-Trimethylbenzene		10 ug/l	330 ug/kg
tert-Butylbenzene		10 ug/l	330 ug/kg
1, 2, 4-Trimethylbenzene		10 ug/l	330 ug/kg
sec-Butylbenzene		10 ug/l	330 ug/kg
1, 2, 3-Trimethylbenzene		10 ug/l	330 ug/kg
p-Isopropyltoluene		10 ug/l	330 ug/kg
n-Butylbenzene		10 ug/l	330 ug/kg
1, 3, 5-Trichlorobenzene		10 ug/l	330 ug/kg
1, 2, 3-Trichlorobenzene		10 ug/l	330 ug/kg
Benzyl Alcohol		10 ug/l	330 ug/kg
4-Chloroaniline		10 ug/l	330 ug/kg
2-Nitroaniline		50 ug/l	1650 ug/kg
3-Nitroaniline		50 ug/l	1650 ug/kg
4-Nitroaniline		50 ug/l	1650 ug/kg
Dibenzofuran		10 ug/l	330 ug/kg
2, 3, 7, 8-TCDD (screen)			

Analytical techniques have changed dramatically over the past several years. The USEPA Contract Lab Program (CLP) generally represents the most current, state-of-the-art methodologies. The USEPA's SW-846, Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, 3rd. Ed., closely parallels the CLP. For consistency, most of our Clients desire SW-846 protocol. Some projects can be better performed using CLP procedures. Please call us to discuss the requirements of your specific project.

Acid Extractables, GC/MS

		Practical Quantitation Limits aqueous	non-aqueous
1. Phenol	SW-8270	10 ug/l	330 ug/kg
2. 2-Chlorophenol		10 ug/l	330 ug/kg
3. 4-Methylphenol		10 ug/l	330 ug/kg
4. 2-Methylphenol		10 ug/l	330 ug/kg
5. 2-Nitrophenol		50 ug/l	1650 ug/kg
6. 2, 4-Dimethylphenol		10 ug/l	330 ug/kg
7. 2, 4-Dichlorophenol		10 ug/l	330 ug/kg
8. 4-Chloro-3-methylphenol		10 ug/l	330 ug/kg
9. 2, 4, 6-Trichlorophenol		10 ug/l	330 ug/kg
10. 2, 4, 5-Trichlorophenol		50 ug/l	1650 ug/kg
11. 2, 4-Dinitrophenol		50 ug/l	1650 ug/kg
12. 4-Nitrophenol		50 ug/l	1650 ug/kg
13. 2-Methyl-4, 6-dinitrophenol		50 ug/l	1650 ug/kg
14. Pentachlorophenol		50 ug/l	1650 ug/kg
15. Benzoic Acid		50 ug/l	1650 ug/kg

Base-Neutral Extractables, GC/MS

Polynuclear Aromatics, PNA's

1. Naphthalene	SW-8270	10 ug/l	330 ug/kg
2. Acenaphthylene		10 ug/l	330 ug/kg
3. Acenaphthene		10 ug/l	330 ug/kg
4. Fluorene		10 ug/l	330 ug/kg
5. Phenanthrene		10 ug/l	330 ug/kg
6. Anthracene		10 ug/l	330 ug/kg
7. Fluoranthene		10 ug/l	330 ug/kg
8. Pyrene		10 ug/l	330 ug/kg
9. Benzo (a) anthracene		10 ug/l	330 ug/kg
10. Chrysene		10 ug/l	330 ug/kg
11. Benzo (b) fluoranthene		10 ug/l	330 ug/kg
12. Benzo (k) fluoranthene		10 ug/l	330 ug/kg
13. Benzo (a) pyrene		10 ug/l	330 ug/kg
14. Indeno (1, 2, 3-cd) pyrene		10 ug/l	330 ug/kg
15. Dibenzo (a, h) anthracene		10 ug/l	330 ug/kg
16. Benzo (g, h, i) perylene		10 ug/l	330 ug/kg
17. 2-Methylnaphthalene		10 ug/l	330 ug/kg

Other compounds are also available.
Please inquire.

Appendix 2

HAZARDOUS SUBSTANCE LIST (HSL)

HSL Volatiles

chloromethane
bromomethane
vinyl chloride
chloroethane
methylene chloride
acetone
carbon disulfide
1, 1-dichloroethene
1, 1-dichloroethane
1, 2-dichloroethene (total)
chloroform
1, 2-dichloroethane
2-butanone
1, 1, 1-trichloroethane
carbon tetrachloride
vinyl acetate
dichlorobromomethane
1, 1,2, 2-tetrachloroethane
1, 2-dichloropropane
trans-1, 3-dichloropropene
trichloroethene
dibromochloromethane
1, 1, 2-trichloroethane
benzene
cis-1, 3-dichloropropene
bromoform
2-Hexanone
4-methyl-2-pentanone
tetrachloroethene
toluene
chlorobenzene
ethylbenzene
styrene
total xylenes

HSL Semi-Volatiles

phenol
bis (2-chloroethyl) ether
2-chlorophenol
1, 3-dichlorobenzene
1, 4-dichlorobenzene
benzyl alcohol
1, 2-dichlorobenzene
2-methylphenol
bis-(2-chloroisopropyl) ether
4-methylphenol
n-nitrosodi-n-propylamine
hexachloroethane
nitrobenzene
isophorone
2-nitrophenol
2, 4-dimethylphenol
benzoic acid
bis-(2-chloroethoxy) methane
2, 4-dichlorophenol
1, 2, 4-trichlorobenzene
naphthalene
4-chloroaniline
hexachlorobutadiene
4-chloro-3-methylphenol
2-methylnaphthalene
hexachlorocyclopentadiene
2, 4, 6-trichlorophenol
2, 4, 5-trichlorophenol
2-chloronaphthalene
2-nitroaniline
dimethyl phthalate
acenaphthylene
3-nitroaniline
acenaphthene
2, 4-dinitrophenol
4-nitrophenol
dibenzofuran
2, 4-dinitrotoluene
2, 6-dinitrotoluene
diethyl phthalate
4-chlorophenyl phenyl ether
fluorene
4-nitroaniline
2-methyl-4, 6-dinitrophenol
n-nitrosodiphenylamine
4-bromophenyl phenyl ether
hexachlorobenzene
pentachlorophenol
phenanthrene
anthracene
di-n-butyl phthalate
fluoranthene
pyrene
butyl benzyl phthalate
3, 3′-dichlorobenzidine
benzo (a) anthracene
bis-(2-ethylhexyl) phthalate
chrysene
di-n-octyl phthalate
benzo (b) fluoranthene
benzo (k) fluoranthene
benzo (a) pyrene
indeno (1, 2, 3-cd) pyrene
dibenzo (a,h) anthracene
benzo (ghi) perylene

HSL Pesticides

alpha BHC
beta BHC
delta BHC
gamma BHC-lindane
heptachlor
aldrin
heptachlor epoxide
endosulfan I
dieldrin
DDE
Endrin
endosulfan II
DDD
endosulfan sulfate
DDT
endrin ketone
methoxychlor
chlordane
toxaphene
PCB-1016
PCB-1221
PCB-1232
PCB-1242
PCB-1248
PCB-1254
PCB-1260