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G-000-102.159

REVISIONS TO SECTION A - PERMIT APPLICATION INFORMATION, SECTION D - PROCESS INFORMATION AND SECTION G - CONTINGENCY PLAN OF THE FERNALD ENVIRONMENTAL MANAGEMENT PROJECT'S RESOURCE CONSERVATION AND RECOVERY ACT PART A/B PERMIT APPLICATION

04/16/97

DOE-0794-97
DOE-FEMP OEPA
425
PERMIT APP

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Department of Energy

Ohio Field Office
Fernald Area Office
P. O. Box 538705
Cincinnati, Ohio 45253-8705
(513) 648-3155

APR 16 1997

DOE-0794-97

Mr. Paul Pardi
Ohio Environmental Protection Agency
401 East 5th Street
Dayton, Ohio 45402-2911

Dear Mr. Pardi:

REVISIONS TO SECTION A - PERMIT APPLICATION INFORMATION, SECTION D - PROCESS INFORMATION AND SECTION G - CONTINGENCY PLAN OF THE FERNALD ENVIRONMENTAL MANAGEMENT PROJECT'S RESOURCE CONSERVATION AND RECOVERY ACT PART A/B PERMIT APPLICATION

Reference: Letter and Director's Final Findings and Orders from Thomas Crepeau to Phil Hamric and John Bradburne, dated June 6, 1996.

Enclosed, for approval, are revisions to Section A - Part A Permit Application Information, Section D - Process Information and Section G - Contingency Plan of the Fernald Environmental Management Project's (FEMP) Resource Conservation and Recovery Act (RCRA) Part A/B Permit Application as required by OAC 3745-50-40 and 3745-65-50 through 56 (Enclosure 1). Under the referenced Director's Findings and Orders (DF&O) issued by the Ohio Environmental Protection Agency (OEPA) on June 6, 1996, the FEMP is exempted from obtaining a hazardous waste facility installation and operation permit for hazardous waste storage activities identified in the current RCRA Part A/B Permit Application (Revision 2.1) provided that the FEMP complies with the terms of the permit application and all other applicable hazardous waste laws and regulations.

The referenced DF&O states that the Part B Permit Application may be revised upon written approval of the OEPA. Revisions to these sections of the permit application have been made using redlines and strikeouts to assist in reviewing. These revisions include the following:

Section A - Part A Permit Information: Information has been revised to include new hazardous waste codes, changes to the status of FEMP Hazardous Waste Management Units (HWMUs) and to update permit information.

Section D - Process Information: This section has been revised to include information on the upgrades completed at Plant 8 Warehouse (Building 80) to accommodate the storage of containers of hazardous waste with free liquids, including ignitable liquids. Storage of ignitable liquids has also been initiated in the Plant 6 Warehouse (Building 79). Both of these buildings are equipped with dry pipe sprinkler systems and meet National Fire Protection Association (NFPA) standards. In addition, KC-2 Warehouse (Building 63) will no longer be used for the storage of ignitable hazardous wastes. Electricity and water were permanently shut off at the KC-2 Warehouse in January 1997 to prepare for the demolition of the Boiler Plant Complex. The feeder line to the KC-2 Warehouse runs through this complex.

Section G - Contingency Plan: Revisions involve primarily updating the list of emergency response contacts and revising the lists of safety and emergency equipment associated with HWMUs that have been reclassified, closed, emptied or contain only solid residues.

A table identifying specific revisions and the corresponding sections is provided as Enclosure 2. Additional information on the fire protection systems in the Plant 8 Warehouse (Building 80) and the Plant 6 Warehouse (Building 79) is provided as Enclosure 3.

If you have any questions, please contact Robert Danner at (513) 648-3167.

Sincerely,

Jack R. Craig
Director

FEMP:Danner

Enclosures: As Stated

cc w/enc:

N. Hallein, EM-42/CLOV
T. Crepeau, OEPA-Columbus
V. Adamkus, USEPA-5
AR Coordinator, FDF/78

cc w/o enc:

J. Saric, USEPA-5
T. Schneider, OEPA-Dayton
R. Holmes, FDF/3
T. Walsh, FDF/65-2
RCRA Operating Record, FDF
Administrative Record, FDF

F-8018

RCRA PART B PERMIT APPLICATION (Revision 3.0)

APRIL 1997

SECTION A: PART A PERMIT APPLICATION (MODIFIED)
SECTION D: PROCESS INFORMATION
SECTION G: CONTINGENCY PLAN

FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

U.S. EPA Identification No. OH6890008976
Ohio EPA Permit No. 05-31-0681

000003

ATTACHMENT 1

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Form Approved OMB No. 2050-0034 Expires 12-31-91
GSA No. 0246-EPA-OT

For EPA Regional Use Only		For State Use Only
Date Received Month Day Year		

EPA

United States Environmental Protection Agency
Washington, DC 20460

Hazardous Waste Permit Application Part A

(Read the Instructions before starting)

I. ID Number(s)

A. EPA ID Number	B. Secondary ID Number *(if applicable)*
OH6890008976	

II. Name of Facility

US DOE FERNALD ENVMGT PROJECT

III. Facility Location *(Physical address not P.O. Box or Route Number)*

A. Street

7400 WILLEY ROAD

Street *(continued)*

City or Town	State	ZIP Code
FERNALD	OH	45253-8705

County Code *(if known)*	County Name
031	HAMILTON

B. Land Type *(enter code)*	C. Geographic Location		D. Facility Existence Date
	LATITUDE (degrees, minutes, & seconds)	*LONGITUDE (degrees, minutes, & seconds)*	Month Day Year
F	39 17 56 N	084 41 16 W	11 19 80

IV. Facility Mailing Address

Street or P.O. Box

PO BOX 538705

City or Town	State	ZIP Code
CINCINNATI	OH	45253-8705

V. Facility Contact *(Person to be contacted regarding waste activities at facility)*

Name *(last)*	*(first)*
DANNER	ROBERT

Job Title	Phone Number *(area code and number)*
ENV ENGINEER	513-648-3167

VI. Facility Contact Address *(See instructions)*

A. Contact Address Location	A. Contact Address Mailing	B. Street or P.O. Box
X		

City or Town	State	ZIP Code

Please print or type in the ELITE type (12 characters per inch) in the unshaded areas only.

EPA I.D. Number (enter from page 1)	Secondary ID Number (enter from page 1)
OH6890008976	

Operator Information (see instructions)

Name of Operator

U S DEPARTMENT OF ENERGY

Street or P.O. Box

P O BOX 538705

City or Town	State	ZIP Code
CINCINNATI	OH	45253-8705

Phone Number (area code and number)	B. Operator Type	C. Change of Operator Indicator	Date Changed (Month / Day / Year)
513-648-3000	F	Yes [ ] No [X]	

VIII. Facility Owner (see instructions)

A. Name of Facility's Legal Owner

U S DEPARTMENT OF ENERGY

Street or P.O. Box

P O BOX 538705

City or Town	State	ZIP Code
CINCINNATI	OH	45253-8705

Phone Number (area code and number)	B. Owner Type	C. Change of Owner Indicator	Date Changed (Month / Day / Year)
513-648-3000	F	Yes [ ] No [X]	

IX. SIC Codes (4-digit, in order of significance)

Primary	Secondary
4953 (description) HAZARDOUS WASTE	(description)
Secondary	**Secondary**
(description)	(description)

X. Other Environmental Permits (see instructions)

A. Permit Type (enter code)	B. Permit Number	C. Description
N	1IO000004*ED	
E	OTHER	SEE ATTACHMENT #1

ITEM VII: OPERATOR INFORMATION (Continued)

NAME OF CO-OPERATOR

~~Fernald Environmental Restoration Management Corporation (FERMCO)~~

Fluor Daniel Fernald

STREET OR P.O. BOX

P.O. Box ~~398704~~ 538704

CITY OR TOWN	STATE	ZIP CODE
Cincinnati	Ohio	~~45239-8704~~ 45253-8704

TELEPHONE NUMBER

(513) 648-3000

EPA I.D. Number (enter from page 1)	Secondary ID Number (enter from page 1)
O H 6 8 9 0 0 0 8 9 7 6	

XI. Nature of Business (provide a brief description)

The Fernald Environmental Management Project (FEMP) is a large scale integrated production facility which formerly produced uranium metal used in the fabrication of fuel cores for nuclear reactors operated by the United States Department of Energy. Current activities include waste management operations, remediation, environmental response actions, nuclear materials disposition, new construction (primarily to support CERCLA response/RCRA - HSWA corrective actions), and miscellaneous operations (e.g., wastewater treatment).

XII. Process - 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. Twelve lines are provided for entering codes. If more lines are needed, attach a separate sheet of paper with the additional information. 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 in Item XIII.*

B. **PROCESS DESIGN CAPACITY** - *For each code entered in column A, enter the capacity of the process.*

1. **AMOUNT** - *Enter the amount. In a case where design capacity is not applicable (such as in a closure/post-closure or enforcement action) enter the total amount of waste for that process unit.*
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.*

C. **PROCESS TOTAL NUMBER OF UNITS** - *Enter the total number of units used with the corresponding process code.*

PROCESS CODE	PROCESS	APPROPRIATE UNITS OF MEASURE FOR PROCESS DESIGN CAPACITY
	DISPOSAL:	
D79	INJECTION WELL	GALLONS: LITERS: GALLONS PER DAY: OR LITERS PER DAY
D80	LANDFILL	ACRE-FEET OR HECTARE-METER
D81	LAND APPLICATION	ACRES OR HECTARES
D82	OCEAN DISPOSAL	GALLONS PER DAY OR LITERS PER DAY
D83	SURFACE IMPOUNDMENT	GALLONS OR LITERS
	STORAGE:	
S01	CONTAINER (barrel, drum, etc.)	GALLONS OR LITERS
S02	TANK	GALLONS OR LITERS
S03	WASTE PILE	CUBIC YARDS OR CUBIC METERS
S04	SURFACE IMPOUNDMENT	GALLONS OR LITERS
	TREATMENT:	
T01	TANK	GALLONS PER DAY OR LITERS PER DAY
T02	SURFACE IMPOUNDMENT	GALLONS PER DAY OR LITERS PER DAY
T03	INCINERATOR	SHORT TONS PER HOUR: METRIC TONS PER HOUR: GALLONS PER HOUR: LITERS PER HOUR: OR BTU'S PER HOUR
T04	OTHER TREATMENT (Use for physical, chemical, thermal or biological treatment processes not occurring in tanks, surface impoundment or incinerators. Describe the processes in the space provided in Item XIII.)	GALLONS PER DAY: LITERS PER DAY: POUNDS PER HOUR: SHORT TONS PER HOUR: KILOGRAMS PER HOUR: METRIC TONS PER DAY: METRIC TONS PER HOUR: OR SHORT TONS PER DAY

UNIT OF MEASURE	UNIT OF MEASURE CODE
GALLONS	G
GALLONS PER HOUR	E
GALLONS PER DAY	U
LITERS	L
LITERS PER HOUR	H
LITERS PER DAY	V
SHORT TONS PER HOUR	D
METRIC TONS PER HOUR	W
SHORT TONS PER DAY	N
METRIC TONS PER DAY	S
POUNDS PER HOUR	J
KILOGRAMS PER HOUR	R
CUBIC YARDS	Y
CUBIC METERS	C
ACRES	B
ACRE-FEET	A
HECTARES	Q
HECTARE-METER	F
BTU's PER HOUR	K

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GSA No. 0246-EPA-

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0 H 6 8 9 0 0 0 8 9 7 6	

XII. Process - Codes and Design Capacities (continued)

EXAMPLE FOR COMPLETING ITEM XII (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.

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)	C. PROCESS TOTAL NUMBER OF UNITS	FOR OFFICIAL USE ONLY
X 1	S 0 2	600	G	0 0 2	
X 2	T 0 3	20	E	0 0 1	
1	S 0 1	11,678,480	G	0 0 7	
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					

NOTE: If you need to list more than 12 process codes, attach an additional sheet(s) with the information in the same format as above. Number the lines sequentially, taking into account any lines that will be used for additional treatment processes in Item XIII.

XIII. Additional Treatment Processes (follow instructions from Item XII)

Line Number (enter numbers in sequence with Item XII)	A. PROCESS CODE	B. TREATMENT PROCESS DESIGN CAPACITY 1. AMOUNT (specify)	B. TREATMENT PROCESS DESIGN CAPACITY 2. UNIT OF MEASURE (enter code)	C. PROCESS TOTAL NUMBER OF UNITS	D. DESCRIPTION OF PROCESS
	T 0 4				
	T 0 4				
	T 0 4				
	T 0 4				

000009

EPA I.D. Number (enter from page 1)												Secondary ID Number (enter from page 1)											
0	H	6	8	9	0	0	0	8	9	7	6												

XIV. Description of Hazardous Wastes

A. **EPA HAZARDOUS WASTE NUMBER** - *Enter the four-digit number from 40 CFR, Part 261 Subpart D of each listed hazardous waste you will handle. For hazardous wastes which are not listed in 40 CFR, Part 261 Subpart D, enter the four-digit number(s) from 40 CFR, Part 261 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 XII A. on page 3 to indicate how the waste will be stored, treated, and/or disposed of at the facility.

For non-listed hazardous waste: For each characteristic or toxic contaminant entered in column A, select the code(s) from the list of process codes contained in Item XII A. on page 3 to indicate all the processes that will be used to store, treat, and/or dispose of all the non-listed hazardous wastes that processes that characteristic or toxic contaminant.

NOTE: THREE SPACES ARE PROVIDED FOR ENTERING PROCESS CODES. IF MORE ARE NEEDED:

1. *Enter the first two as described above.*
2. *Enter "000" in the extreme right box of Item XIV-D(1).*
3. *Enter in the space provided on page 7, Item XIV-E, 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 (D.(2)).*

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 EPA Hazardous Waste Number that can be used to describe the hazardous waste.*

***EXAMPLE FOR COMPLETING ITEM XIV** (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 Number		A. EPA HAZARD WASTE NO. (enter code)				B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEASURE (enter code)	D. PROCESS (1) PROCESS CODES (enter)									D. PROCESS (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

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EPA I.D. Number (enter from page 1)	Secondary ID Number (enter from page 1)
OH689000897 6	

V. Description of Hazardous Wastes (continued)

Line Number	A. EPA HAZARDOUS 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	D001	60,000	T	S01	
2	D002				INCLUDED IN ABOVE
3	D003				"
4	D004				"
5	D005				"
6	D006				"
7	D007				"
8	D008				"
9	D009				"
10	D010				"
11	D011				"
12	D012				"
13	D018				"
14	D019				"
15	D021				"
16	D022				"
17	D026				"
18	D028				"
19	D029				"
20	D030				"
21	D032				"
22	D033				"
23	D035				"
24	D037				"
25	D038				"
26	D039				"
27	D040				"
28	D043				"
29	F001				"
30	F002				"
31	F003				"
32	F004				"
33	F005				"

000611

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GSA No. 0246-EPA-GF

EPA I.D. Number (enter from page 1)	Secondary ID Number (enter from page 1)
H 6 8 9 Ø Ø Ø 8 9 7 6	

V. Description of Hazardous Wastes (continued)

Line Number	A. EPA HAZARDOUS 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	P Ø 9 8				INCLUDED IN ABOVE
2	U Ø 1 9				"
3	U Ø 4 4				"
4	U Ø 7 5				"
5	U Ø 8 Ø				"
6	U 1 Ø 7				"
7	U 1 Ø 8				"
8	U 1 1 7				"
9	U 1 2 1				"
10	U 1 2 3				"
11	U 1 3 4				"
12	U 1 5 1				"
13	U 1 5 9				"
14	U 1 6 1				"
15	U 2 1 Ø				"
16	U 2 1 1				"
17	U 2 1 3				"
18	U 2 2 Ø				"
19	U 2 2 6				"
20	U 2 2 8				"
21	U 2 3 9				"
22	U 3 5 9				"
23					
24					
25					
26					
27					
28					
29					
30					
31					
32					
33					

8018

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GSA No. 0246-EPA-

EPA I.D. Number (enter from page 1)												Secondary ID Number (enter from page 1)												
O	H	6	8	9	0	0	0	8	9	7	6													

XIV. Description of Hazardous Waste (continued)

E. USE THIS SPACE TO LIST ADDITIONAL PROCESS CODES FROM ITEM D(1) ON PAGE 6.

Line Number	Additional Process Codes (enter)																													
		N	A																											

XV. 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 this map area. See instructions for precise requirements.

XVI. Facility Drawing

All existing facilities must include a scale drawing of the facility (see instructions for more detail).

XVII. 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).

XVIII. Certification(s)

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 be 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.

Owner Signature	Date Signed

Name and Official Title *(type or print)*

Operator Signature	Date Signed

Name and Official Title *(type or print)*

XIX. Comments

000013

Note: Mail completed form to the appropriate EPA Regional or State Office. (refer to instructions for more information)

ITEM XV: MAPS

There are ~~forty-seven (47)~~ twenty-nine (29) RCRA Hazardous Waste Management Units (HWMUs) at the Fernald Environmental Management Project (FEMP). ~~Forty-seven (47) of those units are included with this submittal.~~ The following units have been reclassified and are no longer listed as HWMUs:

HWMU #2, Parts Cleaner in Welding Shop (Bldg 12), has been removed ~~as requested in DOE letter # 997-92, dated 2-28-92.~~ based on correspondence received from OEPA on November 1, 1993.

HWMU #24, Equipment Storage Area has been removed due to the correspondence from Ohio EPA to DOE, dated June 2, 1992.

HWMUS #39 - the Clearwell, #43 - Lime Sludge Ponds and #44 - Coal Pile Runoff Basin were removed in accordance with correspondence from the Ohio EPA dated June 7, 1993.

HWMUS #23 - Well Drilling Storage Area and #45 - UST No. 5 were removed in accordance with correspondence from the Ohio EPA dated November 1, 1993.

HWMU #40 - Biosurge Lagoon was removed based on correspondence received from OEPA dated February 14, 1995.

HWMU #16 - Primary Calciner was removed based on correspondence from the Ohio EPA dated July 11, 1995.

HWMU #21 - Hilco Oil Recovery was removed based on correspondence received from OEPA dated June 17, 1996.

HWMU #51 - Experimental Treatment Facility (ETF) was removed based on correspondence received from Ohio EPA dated December 6, 1995.

HWMU #12 - Wheelabrator (Bldg. 66) was removed based on correspondence received from OEPA dated March 27, 1995.

In addition, the FEMP has closed the following HWMUs:

HWMU #3 - Waste Oil Storage in Garage

HWMU #6 - Drummed HF Residue/Associated Storage Areas Inside Plant 4

HWMU #7 - Drummed HF Residue/Associated Storage Areas NW of Plant 4

HWMU #8 - Drummed HF Residue/Associated Storage Areas South of Cooling Towers

ITEM XV: MAPS (Continued)

HWMU #9 - Nitric Acid Rail Car and Area

HWMU #13 - Wheelabrator Dust Collector

HWMU #26 - Detrex Still

HWMU #30 - Barium Chloride Salt Treatment Facility

HWMU #31 - Tank for Bulk Storage of Solvents, T-5

HWMU #32 - Tank for Bulk Storage of Solvents, T-6

HWMU #38 - HF Tank Car

HWMU #52 - North and South Solvent Tanks

HWMU #53 - Safe Geometry Digestion Sump

The HWMU's are identified on Figure A-1. The type of HWMU, process code, status, and dimensions are provided on Table A-1.

Drinking Water Wells

~~The only drinking water wells within one-quarter mile of the production area are those that supply the FEMP. They are shown on Figure A-1 as Production Wells #1 through #3.~~ There are no drinking water wells within one-quarter mile of the production area. The FEMP tied into the Hamilton County public water supply system on February 17, 1996 and is no longer using Production Wells #1 through #3 for drinking water. The drinking water wells within one-quarter mile of the property boundaries are shown on Figure A-2.

Outfall Locations

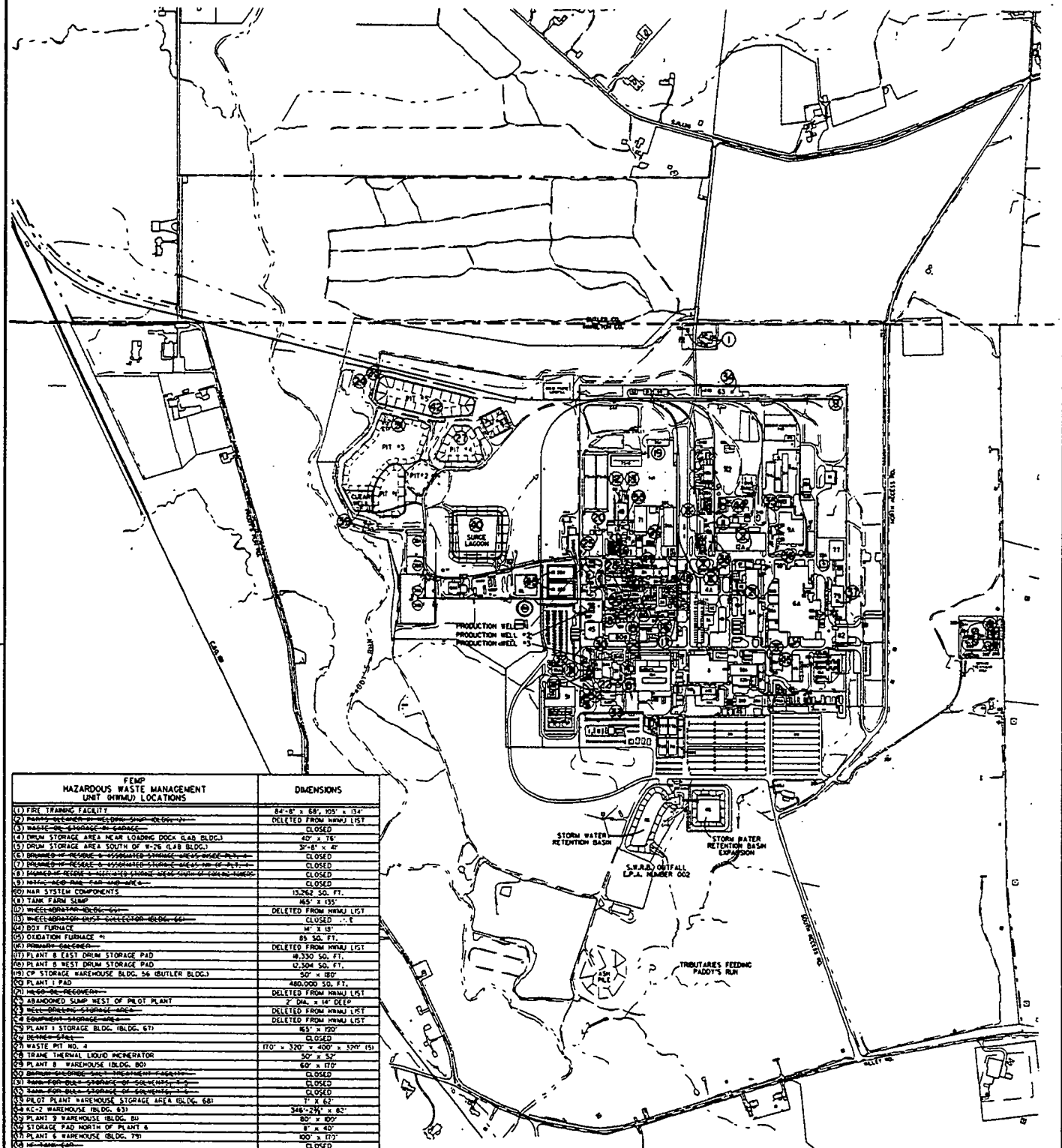
Outfall No.	Latitude (Deg	Min	Sec)	Longitude (Deg	Min	Sec)	Receiving Water
~~001~~	~~39~~	~~17~~	~~53~~	~~84~~	~~40~~	~~48~~	~~Great Miami River~~
~~002~~	~~29~~	~~17~~	~~36~~	~~84~~	~~41~~	~~21~~	~~Storm Sewer Outfall Ditch to Paddy's Run~~
001	39	17	39	84	39	58	Parshall flume chamber to Great Miami River
002	39	17	34	84	41	21	Storm Sewer Outfall Ditch to Paddy's Run
003	39	17	17	84	41	32	Storm water runoff to Paddy's Run
004	39	17	30	84	41	40	Storm water runoff from inactive flyash pile area to Paddy's Run
005	39	17	50	84	41	49	Storm water runoff from Pilot Plant ditch to Paddy's Run
006	39	18	14	84	41	51	Storm water runoff from drainage swale at north end to Paddy's Run

XVI: FACILITY DRAWING

The Fernald Environmental Management Project is located on a 1,050 acre Federal Reservation in Hamilton and Butler Counties, Ohio. It is approximately 20 miles northwest of downtown Cincinnati, midway between Ross and Fernald, Ohio.

Due to the size of the FEMP, two maps have been provided to indicate the Hazardous Waste Management Units (HWMUs) and their boundaries. Figure A-1 shows the location of each HWMU and Figure A-2 provides a general overview of the topographic region.

E-8018



FEMP HAZARDOUS WASTE MANAGEMENT UNIT (HWMU) LOCATIONS	DIMENSIONS
(1) FIRE TRAINING FACILITY	84'-8" x 69', 105' x 134'
(2) ~~PLANT 6 CASTER OIL DRUM STORAGE (CLOSED)~~	DELETED FROM HWMU LIST
(3) ~~WASTE OIL STORAGE AT GARAGE~~	CLOSED
(4) DRUM STORAGE AREA NEAR LOADING DOCK (LAB BLDG.)	40' x 76'
(5) DRUM STORAGE AREA SOUTH OF W-26 (LAB BLDG.)	31'-8" x 41'
(6) ~~DRUMMED UF RESIDUE & ASSOCIATED STORAGE AREAS (NORTH OF PLT 1)~~	CLOSED
(7) ~~DRUMMED UF RESIDUE & ASSOCIATED STORAGE AREAS (NE OF PLT 1)~~	CLOSED
(8) ~~DRUMMED UF RESIDUE & ASSOCIATED STORAGE AREAS (SOUTH OF PLT 1)~~	CLOSED
(9) ~~MISC. WASTE PAD (WEST OF W-26)~~	CLOSED
(10) NAR SYSTEM COMPONENTS	13,262 SQ. FT.
(11) TANK FARM SUMP	165' X 135'
(12) ~~WHEEL ABRATOR (BLDG. 66)~~	DELETED FROM HWMU LIST
(13) ~~WHEEL ABRATOR DUST COLLECTOR (BLDG. 66)~~	CLOSED
(14) BOY FURNACE	14' X 18'
(15) OXIDATION FURNACE #1	85 SQ. FT.
(16) ~~INCINERATOR (BLDG. 66)~~	DELETED FROM HWMU LIST
(17) PLANT 8 EAST DRUM STORAGE PAD	19,350 SQ. FT.
(18) PLANT 8 WEST DRUM STORAGE PAD	17,504 SQ. FT.
(19) CP STORAGE WAREHOUSE BLDG. 56 (BUTLER BLDG.)	50' x 180'
(20) PLANT 1 PAD	480,000 SQ. FT.
(21) ~~HEGO OIL RECOVERY~~	DELETED FROM HWMU LIST
(22) ABANDONED SUMP WEST OF PILOT PLANT	2' DIA. x 14' DEEP
(23) ~~WELL DRILLING STORAGE AREA~~	DELETED FROM HWMU LIST
(24) ~~EQUIPMENT SALVAGE AREA~~	DELETED FROM HWMU LIST
(25) PLANT 1 STORAGE BLDG. (BLDG. 67)	165' x 120'
(26) ~~DEARIE SITE~~	CLOSED
(27) WASTE PIT NO. 4	170' x 320' x 400' x 320' (S)
(28) TRANE THERMAL LIQUID INCINERATOR	50' x 52'
(29) PLANT 8 WAREHOUSE (BLDG. 80)	60' x 170'
(30) ~~BARIUM CHLORIDE SAL TREATMENT FACILITY~~	CLOSED
(31) ~~FOR OIL STORAGE OF EQUIPMENT #1~~	CLOSED
(32) ~~TANK FOR OIL STORAGE OF EQUIPMENT #2~~	CLOSED
(33) PILOT PLANT WAREHOUSE STORAGE AREA (BLDG. 68)	1' X 62'
(34) KC-2 WAREHOUSE (BLDG. 63)	346'-2¾" x 82'
(35) PLANT 9 WAREHOUSE (BLDG. 84)	80' x 100'
(36) STORAGE PAD NORTH OF PLANT 6	8' x 40'
(37) PLANT 6 WAREHOUSE (BLDG. 79)	100' x 170'
(38) ~~HF TANK CAR~~	CLOSED
(39) ~~EVAPORATOR~~	DELETED FROM HWMU LIST
(40) ~~BIO SURGE LAGOON~~	DELETED FROM HWMU LIST
(41) SLUDGE DRYING BEDS	79' x 90'
(42) WASTE PIT NO. 5	184,000 SQ.FT.
(43) ~~SAC SLUDGE PONDS~~	DELETED FROM HWMU LIST
(44) ~~SAC PCC DIGEST BASIN~~	DELETED FROM HWMU LIST
(45) ~~USQ #1~~	DELETED FROM HWMU LIST
(46) URANYL NITRATE TANKS (WFS STORAGE AREA)	52'-7" x 53'-9"
(47) URANYL NITRATE TANKS (NORTH OF PLANT 2)	63'-6" x 40'-6"
(48) URANYL NITRATE TANKS (SOUTHEAST OF PLANT 2)	54'-7" x 45'-4"
(49) URANYL NITRATE TANKS (DIGESTION AREA)	127' x 20'
(50) URANYL NITRATE TANKS (RAFFINATE BLDG.)	14' x 50', 15' x 30'
(51) ~~EXPERIMENTAL TREATMENT FACILITY (EXF)~~	DELETED FROM HWMU LIST
(52) ~~NORTH & SOUTH CEMENT TANKS (PILOT PLANT)~~	CLOSED
(53) ~~SAC DIGESTER SUCTION TANK~~	CLOSED
(54) THORIUM NITRATE STORAGE TANK, T-2	10' DIA.

000018

NO.	REVISIONS	DATE	DWN. BY	APPD.	REF. DWG. NO.
7	REVISED PER RES #3053	3/98	S.A.S.	GMB	
6	REVISED PER RES #3053	8/97	S.A.S.	GMB	
5	REVISED PER RES #3053	9/96	S.A.S.	GMB	
4	REVISED PER RES #2498	10/91	S.A.S.	GEP	
3	REVISED PER RES #2283	8/91	S.A.S.	GEP	
2	ADDED HWMU NO.55	3/89	S.A.S.	GEP	
1	REVISED PER RES #1841	1/89	S.A.S.	GEP	

NOTE: FERNCO C.A.D. DRAWING NOT TO BE REVISED MANUALLY

APPROVALS	
CIVIL & STR.	SAFETY ENG.
ELECTRICAL	QA
ENGINEER	ENV. PROTECT.
SYSTEMS ENG.	WASTE MANAGE.
MECHANICAL	SECURITY
	R.M.
CHECKED	
APPROVED	

FERNALD ENVIRONMENTAL RESTORATION MANAGEMENT CORPORATION
Fernald
Environmental Management Project
U.S. DEPARTMENT OF ENERGY

SITE PLAN — ROPA PART A

FIGURE 1-1
FACILITY LOCATION MAP
SCALE: 1" = 300'

75X-5500-X-00171 | 7

FILE NAME: /RES3053/75X0171.DGN

ITEM XVII: PHOTOGRAPHS

Photographs of the ~~forty-seven (47)~~ twenty-nine (29) RCRA Hazardous Waste Management Units are provided as Attachment #2.

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TABLE A-1

UNIT NO.	FEMP HAZARDOUS WASTE MANAGEMENT UNITS	TYPE OF UNIT (1)	PROCESS CODE (2)	STATUS (3)	DIMENSIONS (4)
1A	Fire Training Facility*	D	D80	2	84'8" x 68'
1B	Fire Training Facility*	D	D80	2	105' x 134'
2	~~Parts Cleaner in Welding Shop (Bldg 12)~~ (Removed in accordance with OEPA letter of November 1, 1993)	~~S~~	~~S01~~	-	~~33" x 71" x 5/8"~~
3	~~Waste Oil Storage in Garage~~ (Closed in accordance with OEPA letter of June 6, 1996)	~~S~~	~~S01~~	~~3~~	~~10' x 10'~~
4	Drum Storage Area Near Loading Dock (Lab Bldg)	S	S01	2	40' x 76'
5	Drum Storage Area South of W-26 (Lab Bldg)	S	S01	2	31'8" x 41'
6	~~Drummed HF Residue/Associated Storage Areas Inside Plant 4~~ (Closed in accordance with OEPA letter of April 28, 1995)	~~S~~	~~S01~~	~~3~~	~~4' x 17'~~
7	~~Drummed HF Residue/Associated Storage Areas NW of Plant 4~~ (Closed under "Generator Closure" protocol in accordance with OEPA letter of June 13, 1996)	~~S~~	~~S01~~	~~3~~	~~25' x 30'~~
8	~~Drummed HF Residue/Associated Storage Areas South of Cooling Towers~~ (Closed under "Generator Closure" protocol in accordance with OEPA letter of April 13, 1995)	~~S~~	~~S01~~	~~3~~	~~14' x 40' x 15'~~
9	~~Nitric Acid Rail Car and Area~~ (Closed in accordance with OEPA letter of April 25, 1995)	~~S~~	~~S01~~	~~3~~	~~10' x 40' x 15'~~
10	NAR System Components	S	S02	2	13,262 sq. ft.
11	Tank Farm Sump	T	T02	2	165' x 135'
12	~~Wheelabrator (Bldg 66)~~ (Removed in accordance with OEPA letter of March 27, 1995)	~~S~~	~~S01~~	-	~~24' x 20'~~
13	~~Wheelabrator Dust Collector (Bldg 66)~~ (Closed in accordance with OEPA letter of April 5, 1996)	~~S~~	~~S01~~	~~3~~	~~30' x 17'~~
14	Box Furnace	T	T03	2	14' x 18'
15	Oxidation Furnace #1	T	T03	2	85 sq. ft.
16	~~Primary Calciner~~ (Removed in accordance with OEPA letter of July 11, 1995)	~~T~~	~~T03~~	-	~~13.5 ft diam x 40' high~~
17	Plant 8 East Drum Storage Pad	S	S01	2	18,330 sq ft
18	Plant 8 West Drum Storage Pad	S	S01	2	4,575 sq. ft.

1) T = Treatment S = Storage D = Disposal
2) Process Codes provided in Item XII of Hazardous Waste Permit Application Part A
3) 1 = Active HWMU, Closure to be conducted under CERCLA/RCRA Integrated Process
   2 = Inactive HWMU, Closure to be conducted under CERCLA/RCRA Integrated Process
   3 = Inactive HWMU to be closed under RCRA
4) Dim[redacted]s: width x length x height - unless otherwise indicated
5) W[redacted]lo. 4 is irregularly shaped; dimensions provided are for each side
* U[redacted]ins one unit, but is split into 2 areas (A & B) because a road divides the unit

TABLE A-1

UNIT NO.	FEMP HAZARDOUS WASTE MANAGEMENT UNITS	TYPE OF UNIT (1)	PROCESS CODE (2)	STATUS (3)	DIMENSIONS (4)
19	CP Storage Warehouse - Bldg. 56 (Butler Bldg)	S	S01	1	50' x 180'
20	Plant 1 Pad	S	S01	1	480,000 sq. ft.
21	~~Hilco Oil Recovery~~ (Removed in accordance with OEPA letter of June 17, 1996)	~~S~~	~~S01~~	~~3~~	~~272 sq. ft.~~
22	Abandoned Sump West of Pilot Plant	S	S01	2	2' diam. x 14' deep
23	~~Well Drilling Storage Area~~ (Removed in accordance with OEPA letter of November 1, 1993)	~~S~~	~~S01~~		~~29' x 56'~~
24	~~Equipment Storage Area~~ (Removed in accordance with OEPA letter of June 2, 1992)	~~S~~	~~S01~~		~~45' x 145'~~
25	Plant 1 Storage Bldg. (Bldg. 67)	S	S01	2	165' x 190'
26	~~Detrox Still~~ (Closed in accordance with OEPA letter of November 27, 1995)	~~S~~	~~S02~~	~~3~~	~~32" x 76" x 7'6"~~
27	Waste Pit No. 4	D	D80	2	170' x 320' x 400' x 320'
28	Trane Thermal Liquid Incinerator	T	T03	2	50' x 52'
29	Plant 8 Warehouse (Bldg. 80)	S	S01	1	60' x 170'
30	~~Barium Chloride Salt Treatment Facility (Closed)~~	~~T~~	~~T04~~	~~3~~	~~50' x 75'~~
31	~~Tank for Bulk Storage of Solvents, T-5~~ (Closed in accordance with OEPA letter of November 29, 1996)	~~S~~	~~S02~~	~~3~~	~~10' diameter~~
32	~~Tank for Bulk Storage of Solvents, T-6~~ (Closed in accordance with OEPA letter of November 29, 1996)	~~S~~	~~S02~~	~~3~~	~~10' diameter~~
33	Pilot Plant Warehouse (Bldg. 68)	S	S01	1	69' x 7'
34	KC-2 Warehouse (Bldg. 63)	S	S01	1	346'2-3/8" x 82'
35	Plant 9 Warehouse (Bldg. 81)	S	S01	1	80' x 100'
36	Storage Pad North of Plant 6	S	S01	2	8' x 40'
37	Plant 6 Warehouse (Bldg. 79)	S	S01	1	100' x 170'
38	~~HF Tank Car~~ (Closed in accordance with OEPA letter of November 27, 1995)	~~S~~	~~S01~~	~~3~~	~~10' x 36' x 15'~~
39	~~Clearwell~~ (Removed in accordance with OEPA letter of June 7, 1993)	~~T~~	~~T02~~		~~30,600 sq. ft.~~

1) T = Treatment S = Storage D = Disposal
2) Process Codes provided in Item XII of Hazardous Waste Permit Application Part A
3) 1 = Active HWMU, Closure to be conducted under CERCLA/RCRA Integrated Process
   2 = Inactive HWMU, Closure to be conducted under CERCLA/RCRA Integrated Process
   3 = Inactive HWMU to be closed under RCRA
4) Dimensions: width x length x height - unless otherwise indicated
5) W[illegible]lo. 4 is irregularly shaped; dimensions provided are for each side
* U[illegible]ins one unit, but is split into 2 areas (A & B) because a road divides the unit

TABLE A-1

UNIT NO.	FEMP HAZARDOUS WASTE MANAGEMENT UNITS	TYPE OF UNIT (1)	PROCESS CODE (2)	STATUS (3)	DIMENSIONS (4)
40	~~Bio-Surge Lagoon~~ (Removed in accordance with OEPA letter of February 14, 1995)	~~T~~	~~T02~~		~~160,000 sq. ft.~~
41	Sludge Drying Beds	T	T02	2	79' x 92'
42	Waste Pit No. 5	T	T02	2	184,000 sq. ft.
43	~~Lime Sludge Ponds~~ (Removed in accordance with OEPA letter of June 7, 1993)	~~S~~	~~S04~~		~~40,000 sq. ft.~~
44	~~Coal Pile Runoff Basin~~ (Removed in accordance with OEPA letter of June 7, 1993)	~~S~~	~~S04~~		~~5,778 sq. ft.~~
45	~~UST No. 5~~ (Removed in accordance with OEPA letter of November 1, 1993)	~~S~~	~~S02~~		~~2'6" diameter~~
46	Uranyl Nitrate Tanks (NFS Storage Area)	S	S02	2	61'7" x 53'9"
47	Uranyl Nitrate Tanks (North of Plant 2)	S	S02	2	63'6" x 40'6"
48	Uranyl Nitrate Tanks (Southeast of Plant 2)	S	S02	2	54'7" x 45'4"
49	Uranyl Nitrate Tanks (Digestion Area [2 locations])	S	S02	2	127' x 20' (each loc.)
50	Uranyl Nitrate Tanks (Raffinate Building [2 locations])	S	S02	2	14' x 50' : 15' x 30'
51	~~Experimental Treatment Facility (ETF)~~ (Removed in accordance with OEPA letter of December 6, 1995)	~~T~~	~~T04~~		~~20' x 48'~~
52	~~North and South Solvent Tanks (Pilot Plant)~~ (Closed in accordance with OEPA letter of June 24, 1996)	~~S~~	~~S02~~	~~3~~	~~6'6" diameter each~~
53	~~Safe Geometry Digestion Sump (Plant 1)~~ (Closed in accordance with meeting with OEPA on March 2, 1995)	~~S~~	~~S02~~	~~3~~	~~8" diameter x 12" deep~~
54	Tank for Bulk Storage of Thorium Nitrate Solution, T-2	S	S02	3	10' diameter

1) T = Treatment S = Storage D = Disposal
2) Process Codes provided in Item XII of Hazardous Waste Permit Application Part A
3) 1 = Active HWMU, Closure to be conducted under CERCLA/RCRA Integrated Process
   2 = Inactive HWMU, Closure to be conducted under CERCLA/RCRA Integrated Process
   3 = Inactive HWMU to be closed under RCRA
4) Dimensions: width x length x height - unless otherwise indicated
5) W[redacted]lo. 4 is irregularly shaped; dimensions provided are for each side
   U[redacted]ins one unit, but is split into 2 areas (A & B) because a road divides the unit

ITEM X: OTHER ENVIRONMENTAL PERMITS (Attachment 1)

Pursuant to OAC 3745-50-41, the following is a list of all permits or construction approvals received or applied for under the specified programs:

1) Hazardous Waste Management Program under RCRA

Part A Permit Applications submitted to OEPA:

Original submittal	07/06/84	
Revision 1	05/15/85	
Revision 2	10/30/85	(Part B submittal)
Revision 3	03/19/86	
Revision 4	04/28/86	
Revision 5	03/27/87	
Revision 6	11/02/87	
Revision 7	02/04/88	
Revision 8	07/28/88	
Revision 9	03/22/89	
Revision 10	09/22/89	(Part B submittal)
Revision 11	09/25/90	
Revision 12	06/28/91	
Revision FEMP 0	10/31/91	(Part B submittal)
Revision FEMP 1	03/31/92	
Revision FEMP 1.1	08/31/92	
Revision FEMP 1.2	10/15/92	
Revision FEMP 1.3	03/01/93	
Revision FEMP 1.4	03/26/93	(Part B submittal)
Revision FEMP 2.0	09/14/94	(Part B submittal)
Revision FEMP 2.1	07/31/95	

ITEM X: OTHER ENVIRONMENTAL PERMITS (continued)

Closure Plans (CP) previously submitted:

a. ~~Waste Pit No. 4~~ (Withdrawn)
Barium Chloride Salt Treatment Facility
~~Storage Pad North of Plant 6~~ (Withdrawn)
~~Trane Thermal Liquid Incinerator~~ (Withdrawn)
Tank for Bulk Storage of Solvents, T-5 & T-6
~~Waste Pit No. 5~~ (Withdrawn)
HF Tank Car
Waste Oil Storage in Garage
~~Drum Storage Area South of W-26 (Laboratory Building)~~ (Withdrawn)
Drummed HF Residue Storage Inside Plant 4
Drummed HF Residue Storage Northwest of Plant 4
Nitric Acid Rail Car
~~CP Storage Warehouse - Bldg 56 (Butler Bldg)~~[†] (Withdrawn)
~~Plant 1 Pad~~[†] (Withdrawn)
~~Pilot Plant Warehouse (Bldg 68)~~[†] (Withdrawn)
~~KC-2 Warehouse (Bldg 63)~~[†] (Withdrawn)
~~Plant 9 Warehouse (Bldg 81)~~[†] (Withdrawn)
~~Plant 6 Warehouse (Bldg 79)~~[†] (Withdrawn)
~~Plant 8 Warehouse (Bldg 80)~~[†] (Withdrawn)
Fire Training Facility
~~Drum Storage Area near Lab Loading Dock~~ (Withdrawn)
Detrex Still
~~Uranyl Nitrate Tanks~~ (Withdrawn)
North and South Solvent Tanks (Pilot Plant)
~~NAR System Components~~ (Withdrawn)
Drummed HF Residue South of Cooling Towers
Wheelabrator Dust Collector
Safe Geometry Digestion Sump (Plant 1)

b. ~~Waste Pit No. 4 Post Closure Plan~~ (Withdrawn)

2) Underground Injection Control Program (UIC) under SWDA

None

3) National Pollutant Discharge Elimination System (NPDES) Program under CWA

~~1IO00004*DD~~ 1I000004*ED (Former NPDES permit no. OH000004*CD)

[†] Included in Part B Application, Section I

ITEM X: OTHER ENVIRONMENTAL PERMITS (continued)

4) Prevention of Significant Deterioration (PSD) Program under the Clean Air Act

None

5) Nonattainment Program under the Clean Air Act

None

6) National Emission Standards for Hazardous Pollutants (NESHAPS) preconstruction approval under the Clean Air Act

NESHAP approval of construction received from EPA for the following:

1. UF_6 to UF_4 Reduction Facility #2
2. Thorium Packaging

NESHAP approval of modification received for the following:

1. Plasma Spray Crucible Coating Station
2. Crucible Grit Blaster
3. West Wagner Cold Saw
4. Flat Ingot Model 4 Milling Machine
5. Flat Ingot Model 4A Milling Machine
6. Flat Ingot Model 4B Milling Machine
7. Flat Ingot 425-20 Milling Machine
8. Flat Ingot No. 6 Milling Machine
9. Flat Ingot K&T A Milling Machine
10. Flat Ingot K&T B Milling Machine
11. Plant 6 Sump and Waste Treatment System
12. D&D Facility
13. Ingot Cooling Booth
14. Plant 8 Sump
15. Plant 8 Crusher
16. Plant 1 Material Handling

7) Ocean Dumping permits under the Marine Protection Research and Sanctuaries Act

None

8) Dredge or Fill permits under section 404 of the CWA

None

ITEM X: OTHER ENVIRONMENTAL PERMITS (continued)

9) Other relevant environmental permits, including State Permits

State of Ohio Hazardous Waste Permit 05-31-0681

10) Wastewater Treatment Facility, Ohio EPA Permits-To-Install (PTI)

	Project	PTI No.
1.	Stormwater/Spill Retention Facility - FMPC	05-1043
2.	Process Wastewater Biodenitrification	05-3672
3.	Biodenitrification Surge Lagoon Facility - FMPC	05-2872
4.	Plant 6 Sump Reconstruction	05-2405
5.	Tank Farm Padwater Collection & Neutralization Sump	05-2873
6.	General Sump/Lime Handling System	05-3368
7.	Modification Plant 8 Sump	05-3518
8.	Decontamination and Decommissioning (D&D) Facility	05-3390
9.	Biodenitrification Effluent Treatment System	05-3879
10.	Coal Pile Runoff Collection Facility	05-4172
11.	Manhole 34 Spill Control	05-5127
12.	Ultraviolet Disinfection Unit	05-0944
13.	Modification of Plant 8 Sump	05-5471
14.	pH Neutralization System for the General Sump	05-5634
15.	Advanced Wastewater Treatment Facility	05-5722

11) Air Permit Status Source Report

See attached lists: FEMP Air Permit Report
FEMP Sources Submitted for Air Permits

Fernald Environmental Management Project
Environmental Compliance
Air Permit Report for Ohio EPA Premise No. 1431110128
Listed by Ohio EPA Permit Number

Permit Number	Equipment Description
B006	100 MMBTU/HR NATURAL GAS FIRED BOILER
B007	15 MMBTU GAS/OIL FIRED BOILER
B008	15 MMBTU GAS/OIL FIRED BOILER
B009	15 MMBTU GAS/OIL FIRED BOILER
G001	GASOLINE DISPENSING FACILITY - GASOLINE & DIESEL
K002	MAINTENANCE SHOP PAINT SPRAY BOOTH
P266	BOILER PLANT HIGH VACUUM SYSTEM
P274	DRYERS FOR RADIOLOGICALLY CONTAMINATED CLOTHING
P275	DRYERS FOR NON-RADIOLOGICALLY CONTAMINATED CLOTHIN
P276	NEUTRALIZATION TANK (D-101):EXISTING PLANT 8 SUMP
P284	RESPIRATOR WASHING FACILITY
P285	VACUUM SYSTEM WITH CYCLONE, CARTRIDGE FILTER, MEPA/HEP
P287	NON-RADIOLOGICALLY CONTAMINATED CLOTHES DRYER
P288	INDUSTRIAL HYGIENE LABORATORY HOOD SYSTEM
T014	PLANT 2/3 - NITRIC ACID STOR (F3-12)
T015	PLANT 2/3 - NITRIC ACID STOR (F3-19)
T020	PLANT 2/3 - COND HOLD TK (F3E-7)
T029	25,265 GAL. FIXED ROOF URANYL NITRATE STORAGE TANK
T030	25,265 GAL. FIXED ROOF URANYL NITRATE STORAGE TANK
T033	14,500 GAL FIXED ROOF SLOPWATER STORAGE TANK
T034	14,500 GAL. FIXED ROOF SLOPWATER STORAGE TANK
T045	PLANT 2/3 - SLOP WATER STORAGE TANK F1-608
T046	PLANT 2/3-SLOP WATER STORAGE TANK F2E-601
T116	No.3 well Pumphouse strge tk
T117	MAINTANCE SHOP DIESEL FUEL STORAGE TANK
T126	4,200 Sulfuric acid-93% STORAGE tank
T127	50,000 GAL. METHANOL STORAGE TANK W/I.F.R.
T158	CONCENTRATED SULFURIC ACID STORAGE TANK
Z003	"PERCHLORIC ACID HOOD SYSTEM"
Z004	"ANALYTICAL LAB. MEPA/HEPA SYS."
Z005	"ANALYTICAL LAB GENERAL EXH SYS"
Z006	BIOASSAY AND LOW-LEVEL ENVIRONMENTAL ANALYTICAL LAB
Z009	Filter precoat mixing
Z010	"WATER PLANT ANALYTICAL LABORATORY FUME HOODS

HAZARDOUS WASTE MANAGEMENT UNIT #3
WASTE OIL STORAGE IN GARAGE
has been closed

HAZARDOUS WASTE MANAGEMENT UNIT #6
DRUMMED HF RESIDUE/ASSOCIATED
STORAGE AREAS INSIDE PLANT 4
has been closed

HAZARDOUS WASTE MANAGEMENT UNIT #7
DRUMMED HF RESIDUE/ASSOCIATED STORAGE AREAS NW OF PLANT 4
has been closed

HAZARDOUS WASTE MANAGEMENT UNIT #8
DRUMMED HF RESIDUE/ASSOCIATED STORAGE AREAS SOUTH OF COOLING TOWERS
has been closed

HAZARDOUS WASTE MANAGEMENT UNIT #9
NITRIC ACID RAIL CAR AND AREA
has been closed

HAZARDOUS WASTE MANAGEMENT UNIT #12
WHEELABRATOR (BLDG. 66)
has been reclassified

HAZARDOUS WASTE MANAGEMENT UNIT #13
WHEELABRATOR DUST COLLECTOR (BLDG. 66)
has been closed

HAZARDOUS WASTE MANAGEMENT UNIT #16
PRIMARY CALCINER
has been reclassified

HAZARDOUS WASTE MANAGEMENT UNIT #21
HILCO OIL RECOVERY
has been reclassified

HAZARDOUS WASTE MANAGEMENT UNIT #26
DETREX STILL
has been closed

HAZARDOUS WASTE MANAGEMENT UNIT #30
BARIUM CHLORIDE SALT TREATMENT FACILITY
has been closed

HAZARDOUS WASTE MANAGEMENT UNIT #31
TANK FOR BULK STORAGE OF SOLVENTS, T-5
has been closed

HAZARDOUS WASTE MANAGEMENT UNIT #32
TANK FOR BULK STORAGE OF SOLVENTS, T-6
has been closed

HAZARDOUS WASTE MANAGEMENT UNIT #38
HF TANK CAR
has been closed

HAZARDOUS WASTE MANAGEMENT UNIT #40
BIO-SURGE LAGOON
has been reclassified

HAZARDOUS WASTE MANAGEMENT UNIT #51
EXPERIMENTAL TREATMENT FACILITY (ETF)
has been reclassified

HAZARDOUS WASTE MANAGEMENT UNIT #52
NORTH AND SOUTH SOLVENTS TANKS
has been closed

HAZARDOUS WASTE MANAGEMENT UNIT #53
SAFE GEOMETRY DIGESTION SUMP (PLANT 1)
has been closed

SECTION D

PROCESS INFORMATION

Revision 3

April 1997

Fernald Environmental Management Project

SECTION D - PROCESS INFORMATION

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF FIGURES (cont'd)

LIST OF TABLES

LIST OF ATTACHMENTS

SECTION D - PROCESS INFORMATION

RCRA Part B Permit Application

Fernald Environmental Management Project

Fernald, Ohio

The information provided in this section is submitted in accordance with the requirements of the Ohio Administrative Code (OAC) 3745-55-70 through 78. This information is also in accordance with Title 40 of the Code of Federal Regulations (CFR) Part 270.15-21. Other federal hazardous waste regulations addressed in this section include 40 CFR Part 264.171-175.

D-1 CONTAINERS

This section discusses the specific process information for hazardous waste container storage at the Fernald Environmental Management Project (FEMP). The units to be permitted for container storage of hazardous waste for more than ninety (90) days are:

- CP Storage Warehouse - Building 56 (Butler Building)
- Plant 1 Pad
- Plant 8 Warehouse - Building 80 *
- Pilot Plant Warehouse - Building 68
- KC-2 Warehouse - Building 63 **
- Plant 9 Warehouse - Building 81
- Plant 6 Warehouse - Building 79

~~* Storage limited to hazardous waste containers without free liquids~~

** Bay 2 is not used for the storage of hazardous wastes

Figure D-1 shows the location of each of the above storage units at the facility. The container storage information is discussed in the following paragraphs and in Table D-1.

The Materials Control and Accountability (MC&A) Department maintains surveillance over the storage, movement, measurement, and identification of nuclear materials at the FEMP. Its mission is to control and account for nuclear materials and radioactive and mixed wastes in accordance with DOE Orders and regulatory requirements, including the Resource Conservation and Recovery Act (RCRA) and Toxic Substances Control Act (TSCA).

Materials accountability records begin with the proper identification of the material. The materials databases are organized by lot and item number to record information about the material and its location. The FEMP lot marking system is used to assign a unique code to each item of material. Materials are grouped by material type and by enrichment class in lots consisting of one or more items. Each item within a lot is then assigned a unique item number.

~~The Materials Reporting system~~ The materials inventory system, which is part of the Sitewide Waste Information and Tracking System (SWIFTS) maintains a perpetual inventory of all materials on site. Input to the MC&A system from the ~~Materials Reporting System~~ materials inventory system consists of the following material transactions: beginning inventory, additions, removals, adjustments, and transfer data. Source records that are generated by operations personnel are entered by ~~Materials Inventory and Reporting Department~~ Inventory Control personnel into databases.

An accurate inventory of all material in storage at the FEMP is an important part of the material control and accountability program. ~~A physical inventory sheet is used by the inventory teams to record all materials. Copies of the completed sheets are forwarded to Materials Inventory and Reporting personnel in their respective areas for review and verification with their internal records. On the first working day of a month when no physical inventory is taken, a book inventory is recorded. All nuclear material shipments, receipts, additions to and removals from inventory are reconciled to generate the month-end book inventory.~~ The beginning inventory for a reporting period is established by bringing forward the ending physical or book inventory balances from the previous report. Materials transactions of the period are used to calculate the book inventory. A book inventory can be obtained after all transactions for the day are entered.

Generators are initially responsible for marking and labeling their hazardous waste containers (See Section C, Waste Characterization, for additional information). Initially this includes completing the hazardous waste label and assigning a reactivity group code (RGC). All other hazardous waste data such as RCRA classification is coordinated with the Waste Characterization Group. When ~~waste characterization conducts the~~ Waste Characterization completes a RCRA characterization of a material, ~~a report is submitted to materials inventory and reporting personnel. This information~~

~~is matched up with current material records as indicated in the database. The~~ the new information is keyed into the database and reports are generated to trigger relabeling or movement of containers as necessary.

Inspections of individual containers in the storage areas vary depending on the RCRA disposition of the material and the placement unit(s). Inspection forms for RCRA hazardous wastes are kept on file in the FEMP's RCRA Operating Record.

D-1a Containers With Free Liquids

D-1a(1) Description of Containers

The primary containers used at the facility include but are not limited to 55-gallon and 85-gallon drums. When overpacking of 55-gallon drums is required, 85-gallon drums are typically used. Other containers used at the facility and their Department of Transportation (DOT) specification are shown in Table D-2.

Hazardous waste storage containers purchased for use at the FEMP meet the DOT specifications (HM-181 standards). The HM-181 standards are performance-oriented standards for container usage, thus the type of container purchased will depend on the type of waste to be stored. The FEMP uses mostly mild steel drums and those containers must conform to the standards for steel drums under the HM-181 standards. Each of the other types of containers purchased for use at the facility will also meet the HM-181 standards. The FEMP has some containers that pre-date the DOT specification requirements. These pre-DOT containers are inspected on the same schedule as all other containers meeting the DOT requirements to ensure their integrity.

All containers storing hazardous waste are inspected for corrosion and other defects such as severe rusting, apparent structural defects, leaks, holes, dents, or bulges at the time they are first used. Dents that exceed one-inch in depth or 6-inches in length in any two directions render the container non-acceptable. Bulges that exceed outward from the original surface more than one-inch shall not be acceptable. Drums shall be convex-ended in order to be acceptable. The drum lid is inspected for holes, dents, and bulges. If damage exceeding the specifications is found, the container is marked unacceptable and the supervisor is notified of damaged containers. All containers are inspected a minimum of once per week as required by 40 CFR 264.174 after they are filled and placed in the storage unit. The inspection schedule and procedures are described in Section F, Procedures to Prevent Hazards.

A hazardous waste label or the words "hazardous waste" is applied to the container at the accumulation start date. The hazardous waste label includes the facility name and address, the EPA Identification Number, EPA hazardous waste code, the accumulation start date, and/or hazardous waste determination date. Although not required by RCRA, the facility lot number, inventory number, drum number, and the gross, net and tare weight are also attached to the drum for internal tracking and inventory purposes. Also, a storage compatibility/Reactivity Group Code (RGC) is determined and applied to each container.

D-1a(2) Container Management Practices

Various equipment is used to transport containers throughout the facility. The equipment consists of tuggers, trailers, forklifts, individual two-wheel drum dollies, riding hand-stackers, and fork-mounted drum grabs (vertical and horizontal). The fork-mounted drum grabs are used frequently to move individual drums for testing, sampling activities, and to repair leaking containers. The riding hand-stacker is used for small movements within the individual unit. All larger drum movements (i.e., from one unit to another or across the site) are accomplished by forklifts and the tuggers and trailers.

A container is inspected for dents, leaks, holes, loose dirt, rocks or pebbles, corrosion or rust, and bulges both during storage and prior to transport. Containers are also inspected to ensure they are closed, non-leaking, have proper container labels and markings, and are strapped down for transport. Also, all necessary documentation indicating the contents of the container(s) and records for inventory control are attached to the lid and inspected before movement. Figure D-2 details the steps taken prior to transfer of containers. Containers moved by truck or trailer are loaded and unloaded by forklift. The containers are strapped down and transported to the storage unit, once safe conditions for movement are verified. The transportation supervisor is responsible for providing oversite and guidance and ensuring that the motor vehicle operators (MVOs) are trained to operate equipment used to transport hazardous waste. These training records are maintained in the training department. The dispatcher or transportation supervisor must be notified by the MVO before movement of any containers occurs.

Containers are placed on 6-inch high pallets during storage to provide protection from possible spillage. The containers are stored with markings and labels visible and legible from the aisle.

In accordance with the Revised Drum Management Plan, a minimum aisle spacing of 24 inches will be maintained at the Plant 1 Pad and a minimum of 22 inches for all other storage units. The purpose of the Revised Drum Management

Plan is to implement a program to minimize the environmental impact of stored, containerized materials on-site. The Plan documents the drum management activities consistent with the commitments in the Consent Decree and its Stipulated Amendment.

The number of containers and hazardous waste volume for each storage unit will vary depending on the size of container used and the applicable aisle spacing and stacking height necessary to meet additional fire protection standards required on-site. The number of containers in each RCRA storage unit must not to exceed the maximum storage capacity for that unit. See Table D-1 for specific information regarding maximum stacking height and maximum capacities for each storage unit.

Containers delivered to the hazardous waste storage units are inspected according to the FEMP Standard Operating Procedure (SOP) 20-C-630 to document that the containers are acceptable for storage. An example FEMP Hazardous Waste Container Prestorage Checklist is included as Figure D-3. Once the container is acceptable, the container is logged into the RCRA Hazardous Waste Material Movement and Overpack Log and the RCRA New Drum Assignment Log. These logs record the container number, contents, Reactivity Group Code, and date of storage. Figures D-4 and D-5 provide sample pages from these logs.

Hazardous waste types are grouped together and stored according to compatibility in accordance with Reactivity Group Codes and other appropriate information. Incompatible hazardous wastes are not simultaneously stored in the same area. Section F, Procedures to Prevent Hazards, provides more information on the procedures used to ensure that incompatible hazardous wastes are not stored in the same area.

Individual drums removed or shipped from the storage unit are logged out of the Hazardous Waste Log. Containers remain closed except when a sample must be obtained, for visual inspections as a part of the waste characterization, or during addition or removal of hazardous waste. Some containers are equipped with filtered vent plugs to prevent the build-up of pressure within the container. Vent plugs are not used when drums contain RCRA organics. These vent plugs are installed to provide ventilation to containers of wastes containing free reactive uranium metal that has the potential to generate hydrogen gas. The 3/4-inch filter vent plug is composed of a carbon-carbon composite high efficiency particulate air (HEPA) filter. The filter vent plug is inserted into the smaller bung opening of the drum lid. The plugs are installed also on all outer containers if the containers are overpacked. Approximately 3 percent of all RCRA containers in storage are currently equipped with vent plugs.

D-1a(3) Secondary Containment System Design and Operation

The following RCRA storage units are designed to store hazardous waste with free liquids and provide a secondary containment system for the storage of liquids. Attachment D-1 provides information regarding floor coatings for the units. The secondary containment systems are operated according to 40 CFR 264.175 regulations and are designed to contain, at a minimum, 10 percent of the maximum storage capacity volume.

Plant 1 Pad. The Plant 1 Pad ~~is being~~ has been renovated in accordance with the Removal Action 7 Work Plan approved by the Ohio EPA on April 3, 1991, and by the U.S. EPA on August 19, 1991. The existing pad and catch basins ~~will be~~ have been upgraded in the following manner:

- Following removal of dust, loose material and other debris, the existing pad ~~will be~~ was coated with a polyethylene surface sealant/barrier prior to installing a new layer of concrete;
- A six inch concrete curb ~~will be~~ was installed as shown in Figure D-6 to provide containment as well as run on and run-off control;
- New wearing surfaces ~~will be~~ were covered with 86 mils of chemically resistant polyurethane or silicon coating; and,
- The trenches and sumps in the controlled areas ~~will be~~ were coated with an epoxy sealant.

Current as-built/design drawings for the Plant 1 Pad renovation are provided as Figures D-7 through D-15. A photograph of the Plant 1 Pad is provided as Figure D-16.

~~In addition to the waste storage areas which are not covered, three~~ Three (3) structures (TS-4, TS-5 and TS-6) are used to provide covered storage on the Plant 1 Pad. Diked areas within the three (3) structures provide concrete curb secondary containment for storage of liquids. The location of the three (3) structures is shown in Figure D-6. The three structures are labeled Structure 1, Structure 2, and Structure 3 in the Figures D-7 through D-15. Structures 1, 2 and 3 are represented in the Section D text and in the secondary containment calculations as Tension Structure 4 (TS-4), Tension Structure 5 (TS-5) and Tension Structure 6 (TS-6), respectively. The two (2) larger structures (TS-4 and TS-5) provide 70,000 square feet of storage area. Figures D-17 and D-18 provide a drum layout of the storage capacity and secondary containment dimensions of the TS-4 and TS-5 units. The third structure (TS-6) provides 22,500 square feet of storage. Figure D-7 shows the engineering details for the covered structures. The containment for each structure includes a centrally located trench drain ~~which will lead~~ leading to a dead end sump. These drains and sumps have no

connection to site drainage systems and are intended to locally collect accumulated liquid from a leak or spill. The trench drains and sumps are sealed with a chemically resistant epoxy coating. The new concrete bases for the structures have been sealed with an 86 mil chemically resistant polyurethane wearing surface.

KC-2 Warehouse (Building 63). The KC-2 Warehouse is subdivided into eight containment areas (Bays 1 through 8) by eight inch load bearing walls (the east and west walls of each containment area). The KC-2 Warehouse is constructed of concrete block and sheet metal. A photograph of the KC-2 Warehouse is provided as Figure D-19. The detailed design drawings for the base of the storage unit are provided in Figures D-20 and D-21.

Bays 5, 6, and 7 have six-inch by six-inch concrete containment dikes overlain with an eight-foot wide access ramp for storage of containers with free liquids. ~~The bays are equipped with sprinkler systems and meet the standards for storage of ignitable liquids.~~ Construction details for the ramps are provided in Figure D-22. The concrete floor and dikes are coated with an epoxy to create an impermeable surface.

A project to upgrade Bays 1, 2, 3, 4, and 8 was completed in January 1993 for storage of liquid ignitable wastes. However, due to the discovery of an old groundwater monitoring well in Bay 2, the bay is not used for storage of hazardous waste. Bay 2 may be considered for storage of hazardous waste without free liquids in the future. The upgrade project included installing six-inch by six-inch concrete curbing in each bay and coating the base of each bay with a chemical resistant coating. ~~Bays 1, 2, 3, 4, and 8 are equipped with a sprinkler system.~~ As a result of the planned demolition of the Boiler Plant Complex, electricity and water have been permanently shut-off at KC-2 Warehouse. Since the sprinkler system is no longer operational, ignitable wastes are no longer stored in this buildng.

Figures D-23 through D-36 provide the drum layouts and the secondary containment dimensions of the bays.

Plant 9 Warehouse (Building 81). A photograph of the Plant 9 Warehouse is shown in Figure D-37. Detailed design parameters, dimensions and materials of construction for the Plant 9 Warehouse are provided in Figure D-38. The warehouse is a steel framed, enclosed, metal building. The base is constructed of six-inch concrete with number 3 reinforcement rods at twelve (12) inch intervals. The interior is subdivided by dikes into three (3) containment areas (Bays A, B, and C). Each of the three bays have a secondary containment system constructed with a six-inch by six-inch

concrete dike. The concrete curbs were installed in 1990. Ramps are used at the entrances allowing access to the completely enclosed perimeter. Figures D-39 and D-41 provide the drum layout for the Plant 9 Warehouse and the secondary containment dimensions.

Plant 6 Warehouse (Building 79). The Plant 6 Warehouse consists of a steel framed, enclosed, metal building with an 8-inch thick, reinforced concrete slab and is equipped with a secondary containment system. This containment system includes six-inch by six-inch concrete dikes around the perimeter of the three containment units (Bays A, B, and C) as shown in the Foundation Plans and Details as provided in Figure D-41. Ramps are used to allow access to the containment areas. The building is fully sprinklered using a dry pipe sprinkler system and meets the standards for storage of ignitable liquids. The drum layout drawing for the Plant 6 Warehouse is included in Figure D-42. Figure D-43 includes the dimensions of the containment areas for the Plant 6 Warehouse.

CP Storage Warehouse (Building 56). The Warehouse is a pre-engineered building with ribbed metal siding and metal roofing. The upgrade project for the storage of wastes with free liquids in this storage unit was completed in January 1993. The upgrade project included the installation of six-inch by six-inch concrete dikes around the perimeter of the unit. A ramp allows access to the containment area. The secondary containment dimensions are detailed in Figure D-44. A drum layout is provided in Figure D-45. A photograph of the CP Storage Warehouse is provided in Figure D-46.

Pilot Plant Warehouse (Building 68). The Pilot Plant Warehouse is a pre-engineered metal fabricated building which is completely enclosed and covered by metal roofing. A photograph of the Pilot Plant Warehouse is provided in Figure D-47. The base of the warehouse is constructed of eight-inch thick concrete with wire mesh fabric reinforcement as indicated in Figure D-48.

The RCRA storage area is 69 feet X 7 feet located in the center of the building. The storage area consists of a U-shaped concrete dike with the end of the U-shaped dike enclosed by a smaller U-shaped temporary Herculite containment structure to form an impermeable barrier to contain spills of hazardous waste with and without free liquids. A layout drawing of the Pilot Plant Warehouse is provided as Figure D-49. The secondary containment dimensions are included in Figure D-50.

Thorium containers designated as mixed waste under implementation plans resulting from the 1991 Consent Decree and its Stipulated Amendment are stored in the diked area of the Pilot Plant Warehouse which has been determined to be

the most appropriate storage location. FEMP RCRA Part B Permit Applications prior to 1993 had not previously identified the Pilot Plant Warehouse for storage of materials with free liquids. However, the Pilot Plant Warehouse was recommended for storage of these wastes based upon ALARA concerns. Storing the thorium mixed waste elsewhere would constitute an unacceptable radiological exposure to FEMP personnel. To address this ALARA concern, the thorium waste must be stored within a radiologically monitored and restricted area. The Pilot Plant Warehouse is radiologically monitored and restricted, thus storage of the thorium in the Pilot Plant Warehouse is appropriate and acceptable under the Consent Decree and its Stipulated Amendment.

Plant 8 Warehouse (Building 80). The Plant 8 Warehouse is a steel-framed, enclosed, metal building. The base of the unit is constructed of eight-inch thick concrete with number 4 reinforcement rods at twelve inch intervals as shown in Figure D-53. The secondary containment dike is constructed of a four inch by six inch steel angle iron frame dike. Steel ramps have been constructed to allow access to the containment area. The building is fully sprinklered using a dry pipe sprinkler system and meets the standards for storage of ignitable liquids. Figure D-55 provides the secondary containment dimensions. A drum layout is provided as Figure D-56. A photograph of the Plant 8 Warehouse is provided as Figure D-52.

D-1a(3)(a) Requirement for the Base to Contain Liquids

The concrete floors of the following storage units are inspected for cracks and gaps weekly. The inspector checks the building/pad for any structural failure of the pad surface and curbing. The surrounding area is checked for signs of a release such as pooled liquids. The condition of the secondary containment is checked to ensure that all portions of the system are sealed, and free of any cracks or gaps. All drainage features including sumps, drains, and troughs are inspected to ensure there are no standing liquids. Standing liquids must be removed within 24 hours and the area re-inspected to ensure compliance. Any cracks or gaps identified will be noted on the inspection checklist. A Maintenance Work Order is written for the repair of the crack or gap. The inspector will re-inspect the area and note the conditions until the gap or crack is repaired.

Plant 1 Pad. Under the approved Removal Action 7 Work Plan as explained in D-1a(3) above, the base, catch basins, and sumps in the covered structures of the Plant 1 Pad ~~will be~~ were covered with a chemically resistant coating. Coating of the three structures (TS-4, TS-5 and TS-6) has been completed. The coating applied to the base of each of the structures is a polyurethane called Auto-gard II. Attachment D-1 provides information on the coating. The coating is compatible with, and impervious to, the hazardous wastes stored at the Plant 1 Pad. A twelve (12) inch concrete curb

has been constructed around the perimeter of each secondary containment area for TS-4 and TS-5 and the TS-6 secondary containment area. TS-4 and TS-5 have two secondary containment areas designated as North and South within each structure. TS-6 has one secondary containment area within the structure.

KC-2 Warehouse. The floor and curbs are coated with a chemically resistant coating to create an impermeable surface. The bases of Bays 1, 2, 3, 4, and 8 of the KC-2 Warehouse were re-coated as part of a RCRA Warehouse conversion project. The re-coating started in November 1992 and was completed in January 1993. The RCRA Warehouse re-coatings were part of a project to upgrade the KC-2 Warehouse for liquid RCRA ignitable waste storage capabilities. The coating, Vulkem, was used for Bays 1, 2, 3, 4, and 8. Bays 5, 6, and 7 were re-coated during October 1989 and January 1990 with Stonhard. The vendor's specifications for both Vulkem and Stonhard are provided in Attachment D-1. Note that KC-2 Warehouse is no longer being used for the storage of containers of ignitable wastes since the sprinkler system is no longer operational.

Plant 9 Warehouse (Building 81). The floor and curbs are coated with a chemically resistant coating to create an impermeable surface. The concrete surface was coated with Surtreat. Surtreat is a silicon coating and is designed to protect concrete surfaces from penetration of inorganic and organic liquids. The base of the Plant 9 Warehouse is designed to contain, at a minimum, 10 percent of the maximum storage capacity of free liquids in each bay of the Plant 9 Warehouse. Precipitation is not a factor since the storage unit is completely enclosed. The vendor's specifications for Surtreat are provided in Attachment D-1.

Plant 6 Warehouse (Building 79). The floor and curbs are coated with a chemically resistant coating to create an impermeable surface. The base of the Plant 6 Warehouse was re-coated with Surtreat during December 1992. Attachment D-1 provides information regarding the coating system, including chemical resistance data.

CP Storage Warehouse (Building 56). The base of the unit is constructed of six inch-thick concrete with 6-6-6/6 wire fabric reinforcement as shown in Figure D-51. The base and the curbs of the CP Storage Warehouse were coated with Vulkem between October 1992 and January 1993. The vendor's specifications for Vulkem are provided in Attachment D-1.

Pilot Plant Warehouse (Building 68). The containers are stored within a U-shaped concrete containment area which is enclosed at the open end of the U-shaped concrete dike with a smaller U-shaped temporary Herculite containment

structure. The temporary Herculite system consists of Herculite sheeting laid on the floor. A frame is constructed of four-inch PVC piping with slip fitted joints. The Herculite sheeting is rolled over the pipe frame to form the containment dike. The seams are heat sealed.

Plant 8 Warehouse (Building 80). The floor and curbs are coated with a chemically resistant coating to create an impermeable surface. The base of the Plant 8 Warehouse was re-coated with Surtreat in December 1996. Attachment D-1 provides information regarding the coating system, including chemical resistance data.

D-1a(3)(b) Containment System Drainage

Plant 1 Pad. Precipitation will, for the most part, not affect hazardous waste containers in the structures because they are enclosed structures. The covered storage area floors are ~~and will be~~ sloped toward dedicated sumps which are isolated from the site stormwater and wastewater systems and are intended to collect any released hazardous waste and rinseate in the event of a leak or spill. Containers stored at the Plant 1 Pad are elevated (placed on pallets) during storage to eliminate the potential of spilled liquids coming into contact with the containers.

KC-2 Warehouse. Containers stored in the KC-2 Warehouse are elevated (placed on pallets) during storage to eliminate the potential of spilled liquids coming into contact with the containers. The accumulated liquid is contained within the secondary containment system until the material is removed as described in Section D-1a(3)(e). Precipitation is not a factor since the storage unit is completely enclosed.

Plant 9 Warehouse (Building 81). Containers stored in the Plant 9 Warehouse are placed on pallets during storage to eliminate the potential of spilled liquids coming into contact with the containers. The accumulated liquid is contained within the secondary containment system until the material is removed as described in Section D-1a(3)(e). Precipitation is not a factor since the storage unit is completely enclosed.

Plant 6 Warehouse (Building 79). Containers stored in the Plant 6 Warehouse are elevated on pallets during storage to eliminate the potential of spilled liquids coming into contact with the containers. The accumulated liquid is contained within the secondary containment system until the material is removed as described in Section D-1(a)(3)(e). Precipitation is not a factor since the storage unit is completely enclosed.

CP Storage Warehouse (Building 56). The CP Storage Warehouse is a completely enclosed structure, thus precipitation is not a factor. Containers are elevated on pallets during storage. Any accumulated liquids would be contained in the secondary containment system until removed as described in Section D-1a(3)(e).

Pilot Plant Warehouse (Building 68). The Pilot Plant Warehouse is a pre-engineered metal fabricated building which is completely enclosed and covered by metal roofing, thus precipitation is not a factor. Any liquids would accumulate in the temporary secondary containment system until the material is removed as described in D-1a(3)(e).

Plant 8 Warehouse (Building 80). Containers stored in the Plant 8 Warehouse are placed on pallets during storage to eliminate the potential of spilled liquids coming into contact with the containers. The accumulated liquid is contained within the secondary containment system until the material is removed as described in Section D-1a(3)(e). Precipitation is not a factor since the storage unit is completely enclosed.

D-1a(3)(c) Containment System Capacity

Containers stored in the following warehouses are stored on pallets to elevate the containers to prevent them from sitting in accumulated liquids in the event of a leak or spill. All pallets used are at least 6 inches high and provide sufficient height to protect the container if the secondary capacity is reached.

Plant 1 Pad. The as-built/design drawings for the Plant 1 Pad renovation are provided as Figures D-7 through D-15. The location of the three covered storage areas is shown in Figure D-6. The construction drawing for the Plant 1 Pad covered structures is provided as Figure D-7. Structures 1 and 2 are divided into containment areas shown in Figures D-17 and D-18. Each containment area is 220 feet X 80 feet with a twelve (12) inch concrete dike constructed around the perimeter. The maximum storage capacity for TS-4 is 653,840 gallons (11,888 55-gallon drum equivalents) and 657,360 gallons (12,052 55-gallon drum equivalents) for TS-5. The secondary containment system is capable of holding at least 10 percent of the maximum hazardous waste storage volume for the area. The capacity of the secondary containment areas in TS-4 is 8,815 ft^3 for the North bay and 8,304 ft^3 for the South bay. The secondary containment capacity for the North Bay in TS-5 is 8,507 ft^3 and 8,723 ft^3 for the South Bay. The containment calculations are provided in Attachment D-2.

Structure 3 is constructed similar to Structures 1 and 2, but with a single containment area. The containment area is 22,500 ft^2 with a twelve (12) inch concrete dike constructed around the perimeter. Its maximum storage capacity is

330,000 gallons (6,000 55-gallon drum equivalents). The containment system capacity ~~must be~~ is capable of holding at least 10 percent (or 4,411 ft^3 of liquid volume) of the maximum hazardous waste storage volume of the area. The capacity of the secondary containment area in Structure 3 is about 11,250 ft^3.

KC-2 Warehouse. Hazardous waste containers stored in the KC-2 Warehouse storage bays are placed on 6-inch high pallets during storage to protect the containers from contacting accumulated liquids. The storage and containment system capacities for Bays 1, 3, 4, 5, 6, 7, and 8 of the KC-2 Warehouse storage unit are discussed separately below. Bay 2 is not used for the storage of hazardous wastes due to the discovery of an old groundwater monitoring well in the bay. The secondary containment capacity calculations are provided in Attachment II.

- Bay 1 - The maximum storage capacity is 32,120 gallons (584 55-gallon drum equivalents). The minimum containment capacity must equal or exceed 10 percent of the maximum storage volume or 429 ft^3. The secondary containment capacity is 1,857 ft^3.
- Bay 3 - The maximum storage capacity is 33,440 gallons (608 55-gallon drum equivalents). A minimum capacity must equal or exceed 10 percent of the maximum storage volume or 447 ft^3. The secondary containment capacity is 1,594 ft^3.
- Bay 4 - The maximum storage capacity is 25,520 gallons (464 55-gallon drum equivalents). The minimum containment capacity must equal or exceed 10 percent of the maximum storage volume or 341 ft^3. The secondary containment capacity is 1,287 ft^3.
- Bay 5 - Bay 5 contains a smaller diked area within the larger area of Bay 5. The maximum storage capacity for the larger dike is 19,800 gallons (360 55-gallon drum equivalents). The minimum containment capacity must equal or exceed 10 percent of the maximum storage volume or 264 ft^3. The secondary containment capacity is 1,051 ft^3. The maximum storage capacity for the smaller diked area is 3,960 gallons (72 55-gallon drum equivalents). The minimum containment capacity must equal or exceed 10 percent of the maximum storage volume or 52 ft^3. The secondary containment capacity is 115 ft^3.
- Bay 6 - The maximum storage capacity is 25,520 gallons (464 55-gallon drum equivalents). A minimum containment capacity must equal or exceed 10 percent of the maximum storage volume or 341 ft^3. The secondary containment capacity is 1,045 ft^3.
- Bay 7 - The maximum storage capacity is 11,440 gallons (208 55-gallon drum equivalents). A minimum containment capacity must equal or exceed 10 percent of the maximum storage volume or 152 ft^3. The secondary containment capacity is 647 ft^3.

- Bay 8 - The maximum storage capacity is 5,280 gallons (96 55-gallon drum equivalents). A minimum containment capacity must equal or exceed 10 percent of the maximum storage volume or 70 ft^3. The secondary containment capacity is 440 ft^3.

Plant 9 Warehouse (Building 81). Hazardous waste containers stored in the Plant 9 Warehouse storage bays are elevated on pallets during storage. The storage and containment system capacities for each bay of the Plant 9 Warehouse storage unit are discussed separately below. The secondary containment capacity calculations are provided in Attachment II.

- Bay A - The maximum storage capacity for Bay A is 37,620 gallons (684 55-gallon drum equivalents). A minimum containment capacity must equal or exceed 10 percent of the maximum storage volume or 502 ft^3. The secondary containment capacity is 1,116 ft^3.

  Bay B - The maximum storage capacity for Bay B is 45,320 gallons (824 55-gallon drum equivalents). A minimum containment capacity must equal or exceed 10 percent of the maximum storage volume or 605 ft^3. The secondary containment capacity is 1,563 ft^3.

  Bay C - The maximum storage capacity for Bay C is 3,300 gallons (60 55-gallon drum equivalents). A minimum containment capacity must equal or exceed 10 percent of the maximum storage volume or 44 ft^3. The secondary containment capacity is 140 ft^3.

Plant 6 Warehouse (Building 79). Hazardous waste containers stored in the Plant 6 Warehouse storage bays are placed on pallets to elevate the containers during storage. The storage and containment capacities for each bay of the Plant 6 Warehouse storage unit are discussed separately below. The secondary containment capacity calculations are provided in Attachment II.

- Bay A - The maximum storage capacity for Bay A is 82,060 gallons (1,492 55-gallon drum equivalents). A minimum containment capacity must equal or exceed 10 percent of the maximum storage volume or 1,097 ft^3. The secondary containment capacity is 1,928 ft^3.
- Bay B - The maximum storage capacity for Bay B is 79,640 gallons (1,448 55-gallon drum equivalents). A minimum containment capacity must equal or exceed 10 percent of the maximum storage volume or 1,064 ft^3. The secondary containment capacity is 2,061 ft^3.
- Bay C - The maximum storage capacity for Bay C is 69,080 gallons (1,256 55-gallon drum equivalents). A minimum containment capacity must equal or exceed 10 percent of the maximum storage volume or 923 ft^3. The secondary containment capacity is 1,940 ft^3.

CP Storage Warehouse (Building 56). Containers of hazardous waste stored in the CP Storage Warehouse are elevated (placed on pallets) during storage. The maximum storage capacity is 116,160 gallons (2,112 55-gallon drum equivalents). The minimum containment capacity must equal or exceed 10 percent of the maximum storage volume or 1,552 ft^3. The secondary containment capacity is 3,499 ft^3.

Pilot Plant Warehouse (Building 68). Containers of hazardous waste stored in the Pilot Plant Warehouse are elevated during storage. The drummed containers are placed on pallets and the white metal boxes are stored on cross-sections of 4-inch by 4-inch wood beams. The maximum storage capacity of the warehouse storage area is 13,200 gallons (240 55-gallon drum equivalents). The minimum containment capacity must equal or exceed 10 percent of the maximum storage volume or 176.47 ft^3. The secondary containment capacity is 197.34 ft^3.

Plant 8 Warehouse (Building 80). Containers of hazardous waste stored in the Plant 8 Warehouse are elevated (placed on pallets) during storage. The maximum storage capacity is 139,260 gallons (2,532 55-gallon drum equivalents). The minimum containment capacity must equal or exceed 10 percent of the maximum storage volume or 1,862 ft^3. The secondary containment capacity is 3,808 ft^3.

D-1a(3)(d) Control of Run-On

Plant 1 Pad. The covered structures ~~will~~ provide run-on control for the storage of containers with free liquids. The covered structures are constructed upon a 12 inch concrete dike to prevent run-on from entering the storage areas.

KC-2 Warehouse. The KC-2 Warehouse bays are covered to prevent precipitation from entering the storage areas. The area around the warehouse is sloped away from the building to prevent run-on. Bays 1, 2, 3, 4, 5, 6, 7, and 8 are also constructed with diking to further prevent run-on.

Plant 9 Warehouse (Building 81). Precipitation is prevented from entering the Plant 9 Warehouse since this area is completely covered and enclosed on all sides. The area around the warehouse is sloped away from the building to further prevent run-on.

Plant 6 Warehouse (Building 79). Precipitation is prevented from entering the storage unit since this area is completely covered and enclosed on all sides. To further prevent run-on, the topography around the warehouse is sloped away from the building.

CP Storage Warehouse (Building 56). The storage unit is a pre-engineered, ribbed building covered by metal roofing as shown in Figure D-46. The topography around the building is sloped away from the building to prevent run-on and a ramp is used to access the building.

Pilot Plant Warehouse (Building 68). The storage area is confined to the middle of an entirely covered and enclosed structure. The drummed containers are stored on pallets and the white metal box containers are stored on wooden beams. The topography around the building is sloped away from the building to prevent run-on.

Plant 8 Warehouse (Building 80). Precipitation is prevented from entering the Plant 8 Warehouse since this area is completely covered and enclosed on all sides. The area around the warehouse is sloped away from the building to further prevent run-on.

D-1a(3)(e) Removal of Liquids from Containment System

Spills and leaks are contained within the diked containment area. Spills and leaks are remediated as follows within 24 hours from discovery of the incident.

Vermiculite, diatomaceous earth, sand, sorbent "pigs", or equivalent, are used to contain and/or absorb the spilled material within the immediate area. The characteristics of the spilled material are established from the container identification if possible. The spill may then be cleaned up by absorption. A pumping system may be used to remove larger spills. If an acid or a base, a neutralizing agent is used as necessary to reduce or eliminate the hazardous properties of the spill before absorption. Saturated sorbent material is placed in a compatible container for proper disposal.

If spilled material is not identifiable, samples are analyzed for hazardous characteristics in accordance with the FEMP Waste Analysis Plan and the Waste Determination Plan. The container is properly labelled. Storage and disposal is performed in accordance with applicable regulatory requirements. Equipment and materials used are decontaminated or disposed of properly.

Liquids within the covered structures of the Plant 1 Pad will be collected by the catch basins and removed by pumps. The sumps will be inspected daily for the presence of liquids and collected liquids will be removed from the sumps, as required.

D-1b Containers Without Free Liquids

The Plant 1 Pad Tension Structures as described in the Removal Action 7 Work Plan are designed to store hazardous waste with or without free liquids. The other areas of the Plant 1 Pad ~~will~~ provide storage for hazardous waste without free liquids. Also, Bays 1, 3, 4, 5, 6, 7, and 8 of the KC-2 Warehouse, the Plant 6 Warehouse, the Plant 9 Warehouse, the CP Storage Warehouse, the Plant 8 Warehouse and the Pilot Plant Warehouse are designed for the storage of hazardous waste with and without free liquids. ~~The Plant 8 Warehouse is used only for the storage of hazardous waste without free liquids.~~ Due to the discovery of an old groundwater monitoring well, Bay 2 of the KC-2 Warehouse is not currently used for the storage of hazardous waste. Bay 2 may be considered for the storage of containers of hazardous waste without free liquids in the future.

D-1b(1) Test for Free Liquids

The chemical and physical characteristics of the hazardous waste placed in the storage units are determined by visual inspection, specific material data, documented criteria, and/or process knowledge. The visual inspection includes checking the container contents visually for any free standing liquids. The waste characterization process is described further in Section C, Waste Characteristics.

D-1b(2) Description of Containers

The hazardous waste container storage areas accept and store wastes in containers meeting RCRA specifications as delineated in OAC 3745-55-71 and 40 CFR Parts 264.171 and 264.172. A thorough description of containers is presented in D-1a(1).

D-1b(3) Container Management Practices

A thorough description of container management practices on-site is presented in D-1a(2).

D-1b(4) Container Storage Area Drainage

The containers in each of the following RCRA storage units are elevated (placed on pallets) during storage to eliminate the potential of spilled liquids coming into contact with the containers.

Plant 1 Pad. The base of the Plant 1 Pad is sloped toward catch basins to remove precipitation. The Plant 1 Pad drainage is shown in Figure D-15. The catch basins (manholes) in the uncovered areas of Plant 1 Pad are connected to the stormwater management system. The covered structures ~~will be~~ are equipped with dedicated sumps.

CP Storage Warehouse (Building 56). The CP Storage Warehouse is a completely enclosed structure. Therefore, precipitation cannot enter this building. The topography around the storage unit slopes away from the building to prevent run-on. Containers stored in the CP Storage Warehouse are elevated to prevent contact with any accumulated liquids.

Plant 8 Warehouse (Building 80). A photograph of the Plant 8 Warehouse is provided as Figure D-52. Figure D-53 shows the plan view of the Plant 8 Warehouse with construction details. The base of the unit is constructed of eight inch thick concrete with number 4 reinforcement rods at twelve inch intervals. Since the Plant 8 Warehouse is a completely enclosed structure, run-on and precipitation is not a concern.

Pilot Plant Warehouse (Building 68). The Pilot Plant Warehouse is a pre-engineered metal fabricated building which is completely enclosed and covered by metal roofing. Thus, precipitation and run-on is not a factor.

The RCRA storage area is 69 feet X 7 feet located in the center of the building. The storage area consists of a U-shaped concrete dike with the end of the U-shaped dike enclosed by a smaller U-shaped temporary Herculite containment structure to form an impermeable barrier to contain spills of hazardous waste with and without free liquids. A layout drawing of the Pilot Plant Warehouse is provided as Figure D-49.

Thorium containers storing mixed waste under implementation plans resulting from the 1991 Consent Decree and its Stipulated Amendment are stored in the Pilot Plant Warehouse which has been determined to be the most appropriate storage location. The FEMP RCRA Part B Permit Application has not previously identified the Pilot Plant Warehouse as storage of materials with free liquids. However, the Pilot Plant Warehouse was recommended for storage of these wastes based upon ALARA concerns. Storing the thorium mixed waste elsewhere would constitute an unacceptable radiological exposure to FEMP personnel. To address this ALARA concern, the thorium waste must be stored within a radiologically monitored and restricted area. The Pilot Plant Warehouse is radiologically monitored and restricted, thus storage of the thorium in the Pilot Plant Warehouse is appropriate and acceptable under the Consent Decree and its Stipulated Amendment entered December 2, 1988.

KC-2 Warehouse. The KC-2 Warehouse is a completely enclosed structure, therefore, precipitation is not a factor. Containers stored in the warehouse bays are elevated (placed on pallets) during storage, to eliminate the potential of spilled liquids coming into contact with the containers.

Plant 9 Warehouse (Building 81). The Plant 9 Warehouse may be used for the storage of hazardous waste with and without free liquid. Figure D-37 provides a photograph of the Plant 9 Warehouse. The structure is an 80 foot by 100 foot single story, pre-engineered, ribbed, metal building covered with metal roofing. Concrete curbs and dikes were installed in 1990. The original stormwater drains and sumps were sealed. A detailed construction drawing of the Plant 9 Warehouse is shown in Figure D-38.

Plant 6 Warehouse (Building 79). The Plant 6 Warehouse is a pre-engineered, ribbed, unheated building covered by metal roofing. Since this unit is completely enclosed, precipitation is not a factor. A photograph of the Plant 6 Warehouse is provided as Figure D-54. The storage unit is divided into three (3) diked bays with access ramps provided for access to the enclosed areas as shown in Figure D-41. As indicated, the base is constructed of eight inch concrete with number 4 reinforcement rods at 12 inch intervals. Containers stored in the Plant 6 Warehouse are elevated (placed on pallets) during storage to eliminate the potential of spilled liquids coming into contact with the containers.

D-2 TANKS SYSTEMS

The FEMP is not seeking a permit for a tank or tank systems, therefore, this section is not applicable.

D-3 WASTE PILES

The FEMP is not seeking a permit for a waste pile, therefore, this section is not applicable.

D-4 SURFACE IMPOUNDMENTS

The FEMP is not seeking a permit for a surface impoundment, therefore, this section is not applicable.

D-5 INCINERATORS

The FEMP is not seeking a permit for an incinerator, therefore, this section is not applicable.

D-6 LANDFILLS

The FEMP is not seeking a permit for a landfill, therefore, this section is not applicable.

D-7 LAND TREATMENT

The FEMP is not seeking a permit for a land treatment unit, therefore, this section is not applicable.

D-8 MISCELLANEOUS UNITS

The FEMP is not seeking a permit for a miscellaneous unit, therefore, this section is not applicable.

D-9 SUBPART AA

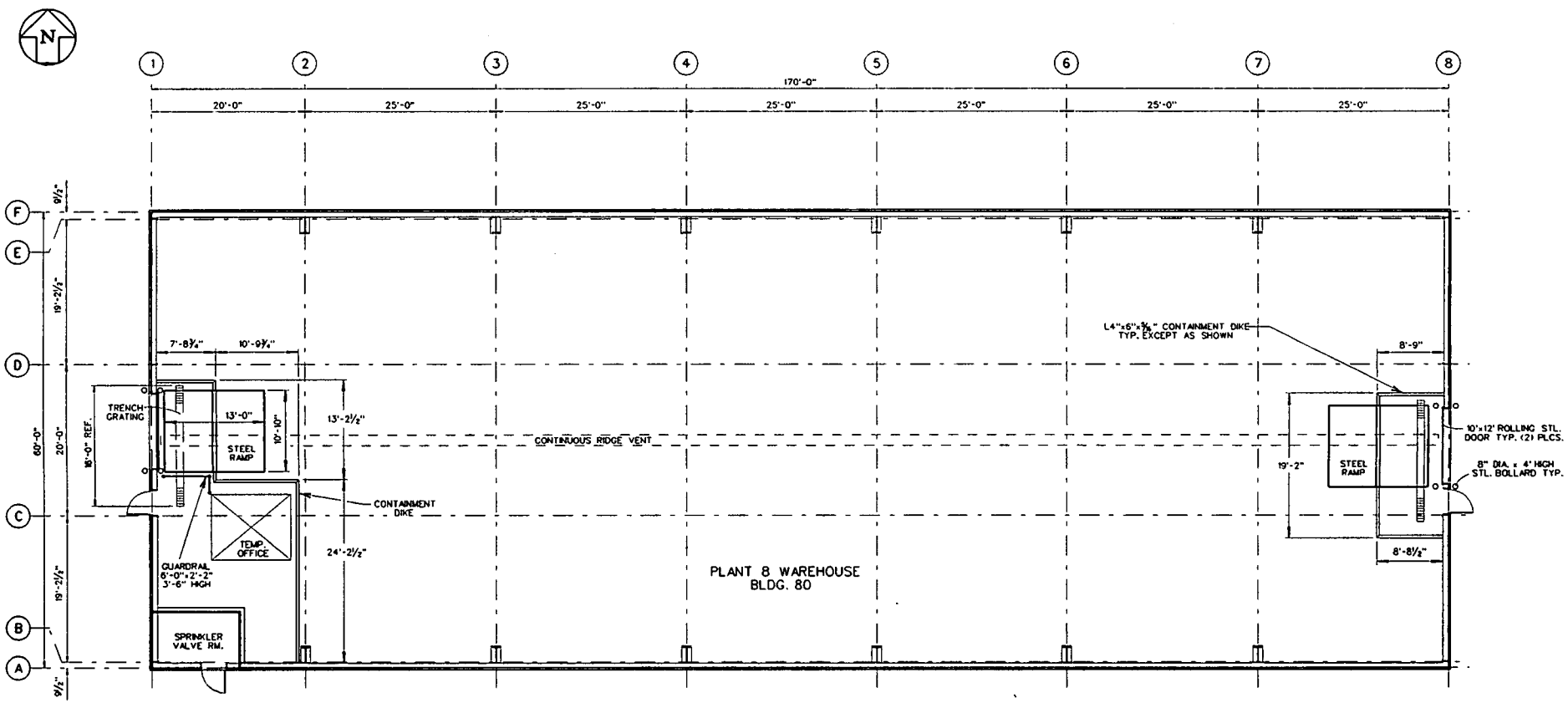
The facility has no process vents associated with distillation, fractionation, thin-film evaporation, solvent extraction or air or steam stripping managing hazardous wastes with organic concentrations at least 10 parts per million (ppm). Therefore, the facility is not subject to the requirements of this subpart.

D-10 SUBPART BB

The facility has no equipment that contains or contacts hazardous waste with organic concentrations of at least 10 percent by weight that are managed in:

- Units that are subject to the permitting requirements of 40 CFR Part 270, or
- Hazardous waste recycling units that are located at hazardous waste management facilities otherwise subject to the permitting requirements of 40 CFR Part 270.

Therefore, the facility is not subject to the requirements of this subpart.



NOTES:

1. INSULATE BUILDING WITH THE FOLLOWING:
   A. CEILING INSULATION SHALL BE RIGID BOARD AS STATED IN ASTM C726 WITH A THERMAL RESISTANCE OF R-19 MINIMUM.
   B. WALL INSULATION SHALL BE TYPE III FLEXIBLE GLASS FIBER AS STATED IN ASTM C991 WITH A THERMAL RESISTANCE OF R-19 MINIMUM AND KRAFT PAPER (OR EQUIVALENT) VAPOR BARRIER ON ONE SIDE.
   C. INSTALL TEMPORARY COVERS OVER RIDGE VENT AND WALL LOUVERS FOR WINTER OPERATION.
2. SEAL CONCRETE FLOOR (INCLUDING PERIMETER CURB WALL) INSIDE DIKE WITH SURTREAT PER MANUFACTURER'S RECOMMENDATIONS AND INSTRUCTIONS.
3. INSTALL CLEAR VINYL STRIP DOORS WITH THE FOLLOWING FEATURES ON BOTH ROLL-UP DOORS:
   A. EACH STRIP TO BE .080" THK., 8" WIDE WITH 50% OVERLAP.
   B. STRIPPING TO BE FIRE RETARDANT TREATED.

NO.	REVISIONS	DATE	DWN. BY	APPD.	NO.	REVISIONS	DATE	DWN. BY	APPD.	REF. DWG. NO.

NOTE: FLUOR DANIEL FERNALD CADD DRAWING. DO NOT REVISE MANUALLY.

CONFIGURATION MANAGEMENT DRAWING

APPROVALS			
CIVIL & STR.			SAFETY ENG.
ELECTRICAL			MAINTENANCE
ENGINEER			PROJECT
INSTRUMENT			WASTE MANAGE
MECHANICAL			SECURITY
			ORJ
CHECKED	GP		
APPROVED	G.E. PAUL	3/19/97	

Fernald Environmental Management Project

FLUOR DANIEL FERNALD

U.S. DEPARTMENT OF ENERGY

BLDG. 80 PLANT 8 WAREHOUSE

PLANT 8 WAREHOUSE SECONDARY CONTAINMENT DIMENSIONS

SCALE: NONE

RES #3238	80X-5500-X-00042 0
DATE 3/19/97	
DRAWN BY S.S.MOOY	

FILE NAME: J:\RES3238\80xx00042.DGN

FORM 1 REVISED 11/6/96 PDF=.DGN

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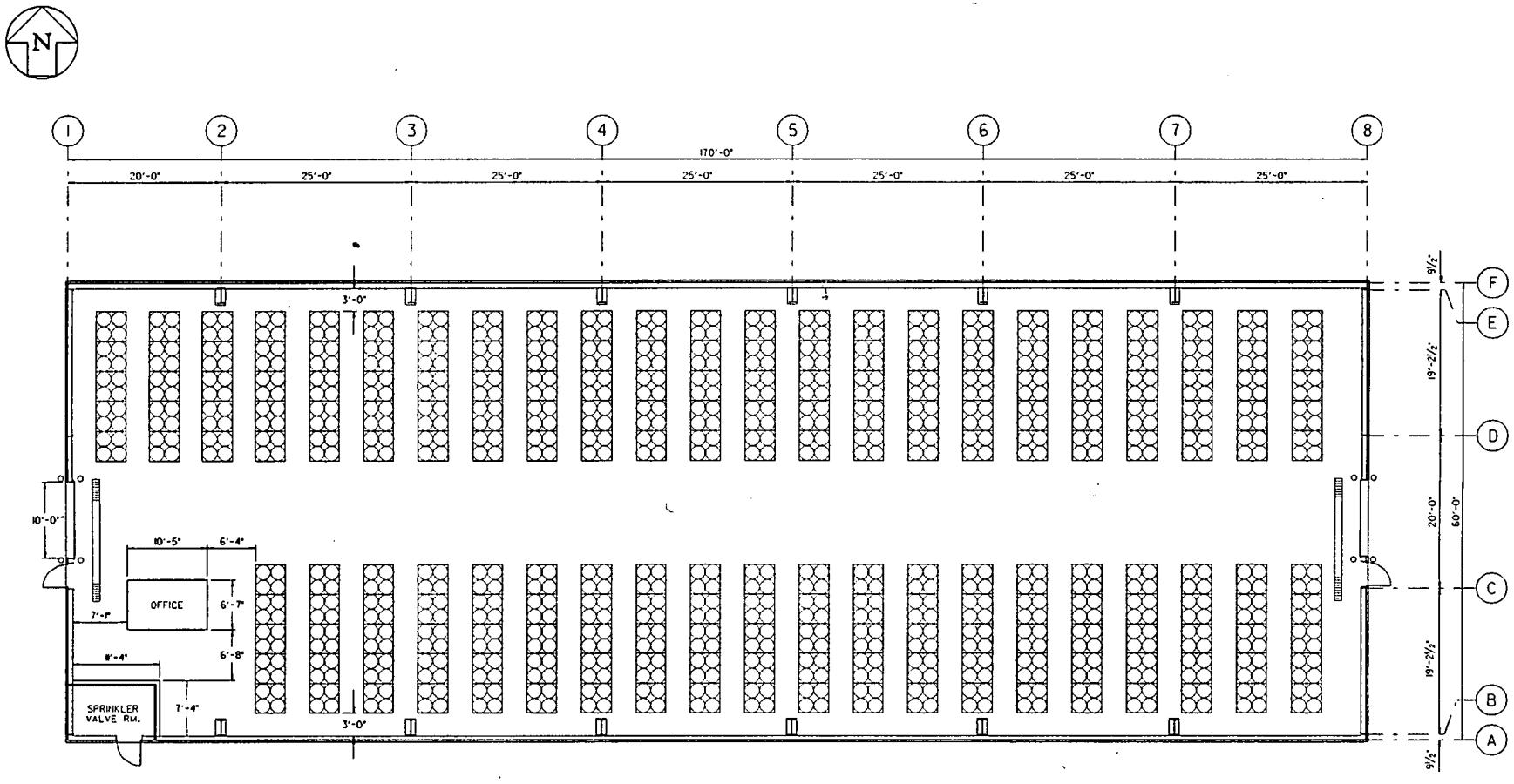

Fernald Environmental Management Project

FLUOR DANIEL FERNALD

U.S. DEPARTMENT OF ENERGY

PLANT 8 WAREHOUSE DRUM PALLET LAYOUT

DATE 3/6/97

DRAWN S.J.SMOCK

FILE NAME: /STEVE/806DBCG.DGN

SECTION D - PROCESS INFORMATION
RCRA STORAGE UNITS

Table D-1

RCRA STORAGE UNIT		MAXIMUM CAPACITY IN GALLONS (55-gallon drum equivalents)	WITH FREE LIQUIDS OR WITHOUT FREE LIQUIDS	STORAGE OF IGNITABLE WASTE	STACKING HEIGHT	AISLE SPACING
1.	CP STORAGE WAREHOUSE - Bldg. 56	116.160	With or Without free liquids	Yes	Three High	Minimum of 22 inches
2.	Plant 1 Pad	11,222,200 Total	With or Without free liquids	No	Four High	Minimum of 24 inches
	TS-4	657,360	With or Without free liquids	No	Four High	Minimum of 24 inches
	TS-5	653,840	With or Without free liquids	No	Four High	Minimum of 24 inches
	TS-6	330,000	With or Without free liquids	No	Four High	Minimum of 24 inches
	Area Outside of Structures	9,581,000	Without free liquids	No	Four High	Minimum of 24 inches
3.	Plant 8 Warehouse - Bldg. 80	139,260	With or Without free liquids	~~No~~ Yes	Four High (Two High when storing ignitables)	Minimum of 22 inches
4.	Pilot Plant Warehouse - Bldg. 68	13,200	With or Without free liquids	No	Three High	Minimum of 22 inches
5.	KC-2 Warehouse - Bldg. 63	200,640 Total	With or Without free liquids	~~Yes~~ No	Two High	Minimum of 22 inches
	Bay 1	32,120	With or Without free liquids	~~Yes~~ No	Two High	Minimum of 22 inches
	Bay 2	43,560	Without free liquids	No	Two High	Minimum of 22 inches

SECTION D - PROCESS INFORMATION
RCRA STORAGE UNITS

Table D-1

	RCRA STORAGE UNIT	MAXIMUM CAPACITY IN GALLONS (55-gallon drum equivalents)	WITH FREE LIQUIDS OR WITHOUT FREE LIQUIDS	STORAGE OF IGNITABLE WASTE	STACKING HEIGHT	AISLE SPACING
	Bay 3	33,440	With or Without free liquids	~~Yes~~ No	Two High	Minimum of 22 inches
	Bay 4	25,520	With or Without free liquids	~~Yes~~ No	Two High	Minimum of 22 inches
	Bay 5-Large Diked Area	19,800	With or Without free liquids	~~Yes~~ No	Two High	Minimum of 22 inches
	Small Diked Area	3,960	With or Without free liquids	~~Yes~~ No	Two High	Minimum of 22 inches
	Bay 6	25,520	With or Without free liquids	~~Yes~~ No	Two High	Minimum of 22 inches
	Bay 7	11,440	With or Without free liquids	~~Yes~~ No	Two High	Minimum of 22 inches
	Bay 8	5,280	With or Without free liquids	~~Yes~~ No	Two High	Minimum of 22 inches
6.	Plant 9 Warehouse - Bldg. 81	86,240	With or Without free liquids	No	Four High	Minimum of 22 inches
	Bay A	37,620	With or Without free liquids	No	Four High	Minimum of 22 inches
	Bay B	45,320	With or Without free liquids	No	Four High	Minimum of 22 inches
	Bay C	3,300	With or Without free liquids	No	Four High	Minimum of 22 inches
7.	Plant 6 Warehouse - Bldg. 79	230,780	With or Without free liquids	~~No~~ Yes	Four High (Two High when storing ignitables)	Minimum of 22 inches

SECTION D - PROCESS INFORMATION
RCRA STORAGE UNITS

Table D-1

RCRA STORAGE UNIT	MAXIMUM CAPACITY IN GALLONS (55-gallon drum equivalents)	WITH FREE LIQUIDS OR WITHOUT FREE LIQUIDS	STORAGE OF IGNITABLE WASTE	STACKING HEIGHT	AISLE SPACING
Bay A	82,060	With or Without free liquids	~~No~~ Yes	Four High (Two High when storing ignitables)	Minimum of 22 inches
Bay B	79,640	With or Without free liquids	~~No~~ Yes	Four High (Two High when storing ignitables)	Minimum of 22 inches
Bay C	69,080	With or Without free liquids	~~No~~ Yes	Four High (Two High when storing ignitables)	Minimum of 22 inches

SECTION D - PROCESS INFORMATION

ATTACHMENT D-1

RCRA STORAGE UNIT	FLOOR COATING
1. Building 56 (CP Storage Warehouse)	Vulkem
2. Building 81 (Plant 9)	Surtreat
3. Pilot Plant Warehouse (Building 68)	Herculite sheeting
4. Building 79 (Plant 6)	Surtreat
5. KC-2 Warehouse:	
Bays 1-4, & 8	Vulkem
Bays 5, 6, & 7	Stonhard
6. Plant 1 Pad:	
2-450' X 90' Tension Support Structures (TS-4) and (TS-5)	Auto-gard II
7. Building 80 (Plant 8)	Surtreat

Section D - Process Information

ATTACHMENT D-2

BUILDING 56

Secondary Containment Dimensions:

- (13'-2")(45'-6") = (13.16)(45.5) = 598.78 ft^2
- $\frac{(4'-1")(4'-1")}{2} = \frac{(4.08)(4.08)}{2} = 8.32\ ft^2$
- (4'-1")(41'-5") = (4.08)(41.41) = 168.95 ft^2
- (14'-7")(45'-6") = (14.58)(45.5) = 663.39 ft^2
- $\frac{(4'-1")(4'-1")}{2} = \frac{(4.08)(4.08)}{2} = 8.32\ ft^2$
- (4'-1")(41'-5") = (4.08)(41.41) = 168.95 ft^2
- (44'-9½")(45'-6") = (44.75)(45.5) = 2,036.12 ft^2
- (13'-7½")(44'-0") = (13.58)(44.0) = 597.52 ft^2
  597.52 - (1.5) (13.83) =
  597.52 - 20.74 = 576.78 ft^2
- (45'-7")(45'-6") = (45.58)(45.5) = 2,073.89 ft^2
- (16'-11")(45'-6" - 6'-1") = (16.91)(39.41) = 666.42 ft^2
- (3'-1")(45'-6" - 6'-1") = (3.08)(39.5) = 121.66 ft^2
- (3'-3")(39'- 5" - 1'-3") = (3.25)(40.66) = 132.14 ft^2
- $\frac{(9'-10")(6'-3")}{2} = \frac{(9.83)(6.25)}{2} = 30.71\ ft^2$
- (9'-10")(40'-8" - 6'-3") = (9.83)(34.41) = 338.25 ft^2
- $\frac{(4'-1")(4'-1")}{2} - \frac{(0'-6")(4'-1")}{2} =$

  $\frac{(4.08)(4.08)}{2} - \frac{(.5)(4.08)}{2} = 8.32 - 1.02 = 7.30\ ft^2$
- (19'-10")(3'-7") = (19.83)(3.58) = 70.99 ft^2
- (15'-11 3/4")(3'-7") = (16.0)(3.58) = 57.28 ft^2

TOTAL AREA: 7,728.23 ft^2

BUILDING 56 (Continued)

Secondary Containment Calculations:

- Volume of Dike: 7,728.0 x .5 = 3,864 ft^3

- Maximum Container Gallons: 2,112 containers x 55 gallons = 116,160 gallons capacity

- 10% of Maximum Container Gallons: 11,616 gallons

- Conversion to Cubic Feet: $\frac{11,616}{7.48} = 1,552.94$ ft^3 liquid

  (Volume Conversion: 7.48 gallons/cubic feet)

- Displacement Totals for Pallet and Structural Columns' Volume:

  (number of pallets)(pallet volume) = total pallet volume
  (132 pallets)(2.76 ft^3) = 364.32 ft^3

  (number of columns)(column volume) = total column volume
  (0)(0.59) = 0.0

  Total pallet and column volume = 364.32 ft^3 + 0.0 = 364.32 ft^3

- Volume of Dike - Total Pallet and Structural Column(s) Displacement:

  Volume of Dike - Total Pallet and Column Volume =

  3,864.0 - 364.32 = 3,500.0 ft^3

Conclusion: The CP Storage Warehouse (Building 56) has 3,500.0 ft^3 of diked volume available after accounting for displacement of container pallets and structural columns. Thus, the CP Storage Warehouse has sufficient capacity to contain 10 % of the volume of containers (1,553.0 ft^3). The conversion factors and pallet and column volume calculations are provided in the reference material provided on page ~~32~~ 33 of Attachment D-2.

KC-2 WAREHOUSE, BAY 1

Secondary Containment Dimensions:

- A $(55'-3" - 4-11")(10'-11" + 4'-10" + 8") = (50.33)(15'-9" + 8")$ $= (50.33)(16'-5") = (50.33)(16.41) = 825.91\ ft^2$
- B $(10'-11")(4'-11") = (10.91)(4.91) = 53.56\ ft^2$
- C $(4'-1")(8") = (4.08)(.66) = 2.69\ ft^2$
- D $\frac{(4'-1")(4'-2")}{2} = \frac{(4.08)(4.16)}{2} = 8.48\ ft^2$
- E $(10")(4'-1") = (8.3)(4.08) = 3.38\ ft^2$
- F $(60'-6" - 9'-4")(55'-3") = (51.16)(55.25)(55.25) = 2,826.59\ ft^2$
- G $(20'-7" + 1'-0")(6'-4") = (21'-7")(6'-4") = (21.58)(6.33) = 136.60\ ft^2$
- H $(20'-7")(3'-0") = (20.58)(3.0) = 61.74\ ft^2$
- I $\frac{(10'-3")(6'-4")}{2} = \frac{(10.25)(6.33)}{2} = \frac{64.88\ ft^2}{2} = 32.44\ ft^2$
- J $(6'-4")(1'-0") = (6.33)(1.0) = 6.33\ ft^2$
- K $(8'-9")(6'-4") = (8.75)(6.33) = 55.38\ ft^2$
- L $(8")(6'-4") = (0.66)(6.33) = 4.17\ ft^2$
- M $(6'-4" - 4'-1")(4'-2") = (2.08)(4.16) = 8.65\ ft^2$
- N $(8'-9")(3.0) = (8.75)(3.0) = 26.25\ ft^2$
- O $(8")(6'-4") = (.66)(6.33) = 4.17\ ft^2$
- $\frac{(4'-2")(4'-1")}{2} = \frac{(4.16)(4.08)}{2} = 8.48\ ft^2$
- $(9'-1")(6'-4") = (9.08)(6.33) = 57.47\ ft^2$
- $(9'-1")(2'-2") = (9.08)(2.16) = 19.61\ ft^2$
- **TOTAL AREA:** $2,826.59 + 825.91 + 53.56 - 8.48 + 136.60 + 61.74 + 32.44 + 6.33 + 55.38 + 4.17 + 8.65 + 4.17 + 8.48 + 57.47 + 19.61 + 26.25 = 4,157.35\ ft^2$

KC-2 WAREHOUSE, BAY 1 (Continued)

Secondary Containment Calculations:

Bay 1:

- Volume of Dike: 4,157.35 x .5′ = 2,078.67 ft^3

- Maximum Container Gallons: 584 containers x 55 gallons = 32,120 gallons capacity

- 10% of Maximum Container Gallons: 3,212.0 gallons

- Conversion to Cubic Feet: $\frac{3,212.0}{7.48} = 429.49\ ft^3$ liquid

  (Volume Conversion: 7.48 gallons/cubic feet)

- Displacement Totals for Pallet and Structural Columns' Volume:

  (number of pallets)(pallet volume) = total pallet volume
  (73 pallets)(2.76 ft^3) = 201.48 ft^3

  (number of columns)(column volume) = total column volume
  (0)(0.59) = 0.0

  Total pallet and column volume = 201.48 ft^3 + 0.0 = 201.48 ft^3

- Volume of Dike - Total Pallet and Structural Column(s) Displacement:

  Volume of Dike - Total Pallet and Column Volume =

  2,078.67 - 201.48 = 1,877.19 ft^3

Conclusion: Bay 1 of the KC-2 Warehouse has 1,877.9 ft^3 of diked volume available after accounting for displacement of container pallets and structural columns. Thus, Bay 1 has sufficient capacity to contain 10 % of the volume of containers (429.49 ft^3). The conversion factors and pallet and column volume calculations are provided in the reference material provided on page ~~32~~ 33 of Attachment D-2.

KC-2 WAREHOUSE, BAY 3

Secondary Containment Dimensions:

- South Ramp $\frac{(9'-11")(6'-4")}{2} = \frac{(9.91)(6.33)}{2} = 31.36\ ft^2$

- $(18'-8")(2'-6") = (18.66)(2.5) = 46.65\ ft^2$

- $(12'-10")(2'-6") = (12.82)(2.5) = 32.05\ ft^2$

- $(5.33)(5.66) = 30.16\ ft^2$

- $(22'-3")(4'-1") = (22.25)(4.08) = 90.78\ ft^2$

- $(22'-3")(4'-1") = (22.25)(4.08) = 90.78\ ft^2$

- North Ramp $\frac{(4'-2")(4'-1")}{2} = \frac{(4.16)(4.08)}{2} = 8.48\ ft^2$

- $(70.25 - 4.08 - 2.8)(22.25 + 22.25 + 4.16) =$
  $(63.37)(48.66) = 3,083.58\ ft^2$

- $(5.33 - 2.5)\ (5.66) = 16.01\ ft^2$

- $3,083.58 - 31.36 - 16.01 = 3,036.21\ ft^2$
  $3,036.21 + 90.78 + 90.78 + 8.48 + 46.65 + 32.05 = 3,304.95\ ft^2$ **TOTAL AREA**

KC-2 WAREHOUSE, BAY 3 (Continued)

Secondary Containment Calculations:

Bay 3:

- Volume of Dike: 3,304.95 x .5 = 1,652.48 ft^3

- Maximum Container Gallons: 608 containers x 55 gallons = 33,440.0 gallons capacity

- 10% of Maximum Container Gallons: 3,344.0 gallons

- Conversion to Cubic Feet: $\frac{3,344.0}{7.48} = 447.06$ ft^3 liquid

  (Volume Conversion: 7.48 gallons/cubic feet)

- Displacement Totals for Pallet and Structural Columns' Volume:

  (number of pallets)(pallet volume) = total pallet volume
  (76 pallets)(2.76 ft^3) = 209.76 ft^3

  (number of columns)(column volume) = total column volume
  (0)(0.59) = 0.0

  Total pallet and column volume = 209.76 ft^3 + 0.0 = 209.76 ft^3

- Volume of Dike - Total Pallet and Structural Column(s) Displacement:

  Volume of Dike - Total Pallet and Column Volume =

  1,652.48 - 209.76 = 1,443.0 ft^3

Conclusion: Bay 3 of of the KC-2 Warehouse has 1,443.0 ft^3 of diked volume available after accounting for displacement of container pallets and structural columns. Thus, Bay 3 has sufficient capacity to contain 10 % of the volume of containers (447.06 ft^3). The conversion factors and pallet and column volume calculations are provided in the reference material provided on page ~~32~~ 33 of Attachment D-2.

KC-2 WAREHOUSE, BAY 4

Secondary Containment Dimensions:

- South Ramp $\frac{(6'\text{-}5")(9'\text{-}9")}{2} = \frac{(6.41)(9.75)}{2} = 31.24\ ft^2$

- $(13'\text{-}10.5")(2'\text{-}7") = (13.875)(2.58) = 35.79\ ft^2$

- $(13'\text{-}6")(2.7") = (13.5)(2.58) = 34.83\ ft^2$

- $(17'\text{-}7")(4'\text{-}1") = (17.58)(4.08) = 71.72\ ft^2$

- $(17'\text{-}7")(4'\text{-}1") = (17.58)(4.08) = 71.72\ ft^2$

- $\frac{(4'\text{-}2")(4'\text{-}1")}{2} = \frac{(4.16)(4.08)}{2} = 8.48\ ft^2$

- $(76.08 - 2.58 - 4.16)(17.41 + 4.16 + 17.41) =$
  $(69.34)(38.98) = 2,702.87\ ft^2$
  $2,702.87 - 32.85 = 2,671.17\ ft^2$

- $2,671.63 + 71.72 + 71.72 + 8.48 + 35.29 + 34.83 = 2,894.17\ ft^2$ **TOTAL AREA**

KC-2 WAREHOUSE, BAY 4 (Continued)

Secondary Containment Calculations:

Bay 4:

- Volume of Dike: 2,894.17 x .5 = 1,447.08 ft^3

- Maximum Container Gallons: 464 containers x 55 gallons = 25,520.0 gallons capacity

- 10% of Maximum Container Gallons: 2,552.0 gallons

- Conversion to Cubic Feet: $\frac{2,552.0}{7.48} = 341.18\ ft^3$ liquid

  (Volume Conversion: 7.48 gallons/cubic feet)

- Displacement Totals for Pallet and Structural Columns' Volume:

  (number of pallets)(pallet volume) = total pallet volume
  (58 pallets)(2.76 ft^3) = 160.08 ft^3

  (number of columns)(column volume) = total column volume
  (0)(0.59) = 0.0

  Total pallet and column volume = 160.08 ft^3 + 0.0 = 160.08 ft^3

- Volume of Dike - Total Pallet and Structural Column(s) Displacement:

  Volume of Dike - Total Pallet and Column Volume =

  1,447.08 - 160.08 = 1,287.00 ft^3

Conclusion: Bay 4 of the KC-2 Warehouse has 1,287.0 ft^3 of diked volume available after accounting for displacement of container pallets and structural columns. Thus, Bay 4 has sufficient capacity to contain 10 % of the volume of containers (341.18 ft^3). The conversion factors and pallet and column volume calculations are provided in the reference material provided on page ~~32~~ 33 of Attachment D-2.

KC-2 WAREHOUSE, BAY 5

Secondary Containment Dimensions:

- (13'-6")(7'-3") = (13.5)(7.25) = 97.87 ft^2

- (12'-7")(7'-3") = (12.58)(7.25) = 91.20 ft^2

- South Ramp $\frac{(8'-2")(7'-3")}{2} = \frac{(8.16)(7.25)}{2} = 29.58\ ft^2$

- North Ramp $\frac{(4'-2")(4'-1")}{2} = \frac{(4.16)(4.08)}{2} = 8.48\ ft^2$

- (69'-11" - 7'-3" - 4'-1")(34'-2") = (58.58)(34.16) = 2,001.09 ft^2

- $\frac{(34'-2" - 4'-2")(4'-1")}{2} = \frac{(30.0)(4.08)}{2} = \frac{124.07\ ft^2}{2} = 61.2\ ft^2$

- TOTAL AREA OF SMALL DIKE: (40'-0")(7'- 0") = 280 ft^2

- TOTAL AREA OF LARGE DIKE: 1,673.09 + 61.20 + 61.20 + 8.48 + 91.20 + 97.87 + 29.58 = 2,022.62 ft^2

KC-2 WAREHOUSE, BAY 5 (Continued)

Secondary Containment Calculations:

Bay 5 Large Dike:

- Volume of Large Dike: 2,022.62 x .5 = 1,011.31 ft^3

- Maximum Container Gallons: 360 containers x 55 gallons = 19,800.0 gallons capacity

- 10% of Maximum Container Gallons: 1,980.0 gallons

- Conversion to Cubic Feet: $\frac{1,980.0}{7.48} = 264.70\ ft^3$ liquid

  (Volume Conversion: 7.48 gallons/cubic feet)

- Displacement Totals for Pallet and Structural Columns' Volume:

  (number of pallets)(pallet volume) = total pallet volume
  (45 pallets)(2.76 ft^3) = 124.20 ft^3

  (number of columns)(column volume) = total column volume
  (0)(0.59) = 0.0

  Total pallet and column volume = 124.20 ft^3 + 0.0 = 124.20 ft^3

- Volume of Dike - Total Pallet and Structural Column(s) Displacement:

  Volume of Dike - Total Pallet and Column Volume =

  1,101.31 - 124.2 = 887.11 ft^3

Conclusion: The Large Dike in Bay 5 of the KC-2 Warehouse has 887.11 ft^3 of diked volume available after accounting for displacement of container pallets and structural columns. Thus, the Large Dike in Bay 5 has sufficient capacity to contain 10 % of the volume of containers (264.70 ft^3). The conversion factors and pallet and column volume calculations are provided in the reference material provided on page ~~32~~ 33 of Attachment D-2.

KC-2 WAREHOUSE, BAY 5 (Continued)

Bay 5 Small Dike:

- Volume of Small Dike: 280.0 x .5 = 140.0 ft^3

- Maximum Container Gallons: 72 containers x 55 gallons = 3,960.0 gallons capacity

- 10% of Maximum Container Gallons: 396 gallons

- Conversion to Cubic Feet: $\frac{396.0}{7.48} = 52.8\ ft^3$ liquid

  (Volume Conversion: 7.48 gallons/cubic feet)

- Displacement Totals for Pallet and Structural Columns' Volume:

  (number of pallets)(pallet volume) = total pallet volume
  (9 pallets)(2.76 ft^3) = 24.84 ft^3

  (number of columns)(column volume) = total column volume
  (0)(0.59) = 0.0

  Total pallet and column volume = 24.84 ft^3 + 0.0 = 24.84 ft^3

- Volume of Dike - Total Pallet and Structural Column(s) Displacement:

  Volume of Dike - Total Pallet and Column Volume =

  140.0 - 24.84 = 115.16 ft^3

Conclusion: The Small Dike in Bay 5 of the KC-2 Warehouse has 115.16 ft^3 of diked volume available after accounting for displacement of container pallets and structural columns. Thus, the Small Dike in Bay 5 has sufficient capacity to contain 10 % of the volume of containers (52.8 ft^3). The conversion factors and pallet and column volume calculations are provided in the reference material provided on page ~~32~~ 33 of Attachment D-2.

KC-2 WAREHOUSE, BAY 6

Secondary Containment Dimensions:

- (13'-10.5")(7'-4") = (13.875)(7.33) = 101.70 ft^2

- $\frac{(8'-2")(7'-4")}{2} = \frac{(8.16)(7.33)}{2} = 29.90\ ft^2$

- (13'-1")(7'-4") = (13.08)(7.33) = 95.87 ft^2

- (35'-1")(69'-7" - 4'-1" - 7'-4") = (35.08)(58.16) = 2,040.25 ft^2

- $\frac{(4'-2")(4'-1")}{2} = \frac{(4.16)(4.08)}{2} = 8.48\ ft^2$

- (35'-1")(4'-1") - $\frac{(4'-2")(4'-1")}{2}$ =

  (35.08)(4.08) - $\frac{(4.16)(4.08)}{2}$ = 134.64

  $\frac{134.64}{2} = 67.32\ ft^2$

- **TOTAL AREA:** 2,040.25 + 101.70 + 29.90 + 95.87 + 67.32 + 67.32 + 8.48 = 2,410.84 ft^2

KC-2 WAREHOUSE, BAY 6 (Continued)

Secondary Containment Calculations:

Bay 6:

- Volume of Dike: 2,410.84 x .5 = 1,205.42 ft^3

- Maximum Container Gallons: 464 containers x 55 gallons = 25,520.0 gallons capacity

- 10% of Maximum Container Gallons: 2,552.0 gallons

- Conversion to Cubic Feet: $\frac{2,552.0}{7.48} = 341.18\ ft^3$ liquid

  (Volume Conversion: 7.48 gallons/cubic feet)

- Displacement Totals for Pallet and Structural Columns' Volume:

  (number of pallets)(pallet volume) = total pallet volume
  (58 pallets)(2.76 ft^3) = 160.08 ft^3

  (number of columns)(column volume) = total column volume
  (0)(0.59) = 0.0

  Total pallet and column volume = 160.08 ft^3 + 0.0 = 160.08 ft^3

- Volume of Dike - Total Pallet and Structural Column(s) Displacement:

  Volume of Dike - Total Pallet and Column Volume =

  1,205.42 - 160.08 = 1,045.34 ft^3

Conclusion: Bay 6 of the KC-2 Warehouse has 1,045.34 ft^3 of diked volume available after accounting for displacement of container pallets and structural columns. Thus, Bay 6 has sufficient capacity to contain 10 % of the volume of containers (341.18 ft^3). The conversion factors and pallet and column volume calculations are provided in the reference material provided on page ~~32~~ 33 of Attachment D-2.

KC-2 WAREHOUSE, BAY 7

Secondary Containment Dimensions:

- $(6'\text{-}8")(7'\text{-}3") = (6.66)(7.25) = 48.28\ ft^2$
- $\frac{(8'\text{-}1")(7'\text{-}3")}{2} = \frac{(8.08)(7.25)}{2} = 29.29\ ft^2$
- $(6'\text{-}7")(7'\text{-}3") = (6.58)(7.25) = 47.70\ ft^2$
- $(21'\text{-}4")(69'\text{-}4" - 4'\text{-}1" - 7'\text{-}3") = (21.33)(57.92) = 1,235.43\ ft^2$
- $(21'\text{-}4" - 4'\text{-}2")(4'\text{-}1") = (17.16)(4.08) = 70.01\ ft^2$
- $\frac{(4'\text{-}2")(4'\text{-}1")}{2} = \frac{(4.16)(4.08)}{2} = 8.48\ ft^2$
- $1,235.43 + 47.70 + 29.29 + 48.28 + 35.00 + 35.00 + 8.48 = 1,439.18\ ft^2$ TOTAL AREA

KC-2 WAREHOUSE, BAY 7 (Continued)

Secondary Containment Calculations:

Bay 7:

- Volume of Dike: 1,439.18 x .5 = 719.59 ft^3

- Maximum Container Gallons: 208 containers x 55 gallons = 11,440 gallons capacity

- 10% of Maximum Container Gallons: 1,144.0 gallons

- Conversion to Cubic Feet: $\frac{1,144.0}{7.48} = 152.94\ ft^3$ liquid

  (Volume Conversion: 7.48 gallons/cubic feet)

- Displacement Totals for Pallet and Structural Columns' Volume:

  (number of pallets)(pallet volume) = total pallet volume
  (26 pallets)(2.76 ft^3) = 71.76 ft^3

  (number of columns)(column volume) = total column volume
  (0)(0.59) = 0.0

  Total pallet and column volume = 71.76 ft^3 + 0.0 = 71.76 ft^3

- Volume of Dike - Total Pallet and Structural Column(s) Displacement:

  Volume of Dike - Total Pallet and Column Volume =

  719.59 - 71.76 = 647.83 ft^3

Conclusion: Bay 7 of the KC-2 Warehouse has 647.83 ft^3 of diked volume available after accounting for displacement of container pallets and structural columns. Thus, Bay 7 has sufficient capacity to contain 10 % of the volume of containers (152.9 ft^3). The conversion factors and pallet and column volume calculations are provided in the reference material provided on page ~~32~~ 33 of Attachment D-2.

KC-2 WAREHOUSE, BAY 8

Secondary Containment Dimensions:

- (9'-4")(2'-9") = (9.33)(2.75) = 25.65 ft^2

- $\frac{(8'-7")(6'-5")}{2} = \frac{(8.58)(6.41)}{2} = 25.64\ ft^2$

- (9'-4")(2'-9") = (9.33)(2.75) = 25.65 ft^2

- (37'-1" - 2'-9" - 4"-1")(12'-1" + 4'-2" + 11'-8") = (30.25)(27.91) = 844.27 ft^2 - 27.49 = 816.78 ft^2

- (12'-1")(4'-1") = (12.08)(4.08) = 49.28 ft^2

- $\frac{(4'-2")(4'-1")}{2} = \frac{(4.16)(4.08)}{2} = 8.48\ ft^2$

- (11'-8")(4'-1") = (11.66)(4.08) = 47.57 ft^2

- 816.78 + 25.65 + 25.65 + 49.28 + 8.48 + 47.57 - 25.64 = 947.77 ft^2 TOTAL AREA

KC-2 WAREHOUSE, BAY 8 (Continued)

Secondary Containment Calculations:

Bay 8:

- Volume of Dike: 947.77 x .5 = 473.88 ft^3

- Maximum Container Gallons: 96 containers x 55 gallons = 5,280.0 gallons capacity

- 10% of Maximum Container Gallons: 528.0 gallons

- Conversion to Cubic Feet: $\frac{528.0}{7.48} = 70.59\ ft^3$ liquid

  (Volume Conversion: 7.48 gallons/cubic feet)

- Displacement Totals for Pallet and Structural Columns' Volume:

  (number of pallets)(pallet volume) = total pallet volume
  (12 pallets)(2.76 ft^3) = 33.12 ft^3

  (number of columns)(column volume) = total column volume
  (0)(0.59) = 0.0

  Total pallet and column volume = 33.12 ft^3 + 0.0 = 33.12 ft^3

- Volume of Dike - Total Pallet and Structural Column(s) Displacement:

  Volume of Dike - Total Pallet and Column Volume =

  473.88 - 33.12 = 440.77 ft^3

Conclusion: Bay 8 of the KC-2 Warehouse has 440.77 ft^3 of diked volume available after accounting for displacement of container pallets and structural columns. Thus, Bay 8 has sufficient capacity to contain 10 % of the volume of containers (70.6 ft^3). The conversion factors and pallet and column volume calculations are provided in the reference material provided on page ~~32~~ 33 of Attachment D-2.

BUILDING 81

Secondary Containment Dimensions:

Bay A:

- $\frac{(27'\text{-}9")(84'\text{-}0") - (8'\text{-}6")(6'\text{-}11") + (6'\text{-}6")(18'\text{-}8") + (5'\text{-}9")(11'\text{-}6") + (6'\text{-}6")(8'\text{-}6")}{2} =$

$$\frac{(27.75)(84.0) - (8.5)(6.91) + (6.5)(18.66) + (5.75)(11.5) + (6.5)(8.5)}{2} = 2{,}487.30 \text{ ft}^2 \text{ TOTAL AREA}$$

Secondary Containment Calculations:

Bay A:

- Volume of Dike: 2,487.30 x .5′ = 1,243.65 ft^3

- Maximum Container Gallons: 684 containers x 55 gallons = 37,620 gallons capacity

- 10% of Maximum Container Gallons: 3,762.0 gallons

- Conversion to Cubic Feet: $\frac{3{,}762.0}{7.48} = 502.94 \text{ ft}^3$ liquid

  (Volume Conversion: 7.48 gallons/cubic feet)

- Displacement Totals for Pallet and Structural Columns' Volume:

  (number of pallets)(pallet volume) = total pallet volume
  (46 pallets)(2.76 ft^3) = 126.96 ft^3

  (number of columns)(column volume) = total column volume
  (0)(0.59) = 0.0

  Total pallet and column volume = 126.96 ft^3 + 0.0 = 126.96 ft^3

- Volume of Dike - Total Pallet and Structural Column(s) Displacement:

  Volume of Dike - Total Pallet and Column Volume =

  1,243 - 127.0 = 1,116.0 ft^3

Conclusion: Bay A of Building 81 has 1,116.0 ft^3 of diked volume available after accounting for displacement of container pallets and structural columns. Thus, Bay A has sufficient capacity to contain 10 % of the volume of containers (502.94 ft^3). The conversion factors and pallet and column volume calculations are provided in the reference material provided on page ~~32~~ 33 of Attachment D-2.

BUILDING 81, (continued)

Secondary Containment Dimensions:

Bay B:

- $\frac{(42'\text{-}0")(81'\text{-}3") - (8.0)(7.0)}{2} = (42.0)(81.25) - 28.0 = 3{,}384.5\ ft^2$ **TOTAL AREA**

Secondary Containment Calculations:

- Volume of Dike: 3,384.5 x .5′ = 1,692.25 ft^3
- Maximum Container Gallons: 824 containers x 55 gallons = 45,320 gallons capacity
- 10% of Maximum Container Gallons: 4,532.0 gallons
- Conversion to Cubic Feet: $\frac{4{,}532.0}{7.48} = 605.8\ ft^3$ liquid

  (Volume Conversion: 7.48 gallons/cubic feet)
- Displacement Totals for Pallet and Structural Columns' Volume:

  (number of pallets)(pallet volume) = total pallet volume
  (46 pallets)(2.76 ft^3) = 126.96 ft^3

  (number of columns)(column volume) = total column volume
  (3)(0.59) = 1.77 ft^3

  Total pallet and column volume = 126.96 ft^3 + 1.77 = 128.73 ft^3

- Volume of Dike - Total Pallet and Structural Column(s) Displacement:

  Volume of Dike - Total Pallet and Column Volume =

  1,692.0 - 128.73 = 1,563.0 ft^3

Conclusion: Bay B of Building 81 has 1,563.0 ft^3 of diked volume available after accounting for displacement of container pallets and structural columns. Thus, Bay B has sufficient capacity to contain 10 % of the volume of containers (605.8 ft^3). The conversion factors and pallet and column volume calculations are provided in the reference material provided on page ~~32~~ 33 of Attachment D-2.

BUILDING 81 (continued)

Bay C

Secondary Containment Dimensions

- (30'-10½")(10.0) = (30.87)(10.0) = 308.75 ft^2 **TOTAL AREA**

Secondary Containment Calculations:

- Volume of Dike: 308.75 x .5' = 154.38 ft^3

- Maximum Container Gallons: 60 containers x 55 gallons = 3,300 gallons capacity

- 10% of Maximum Container Gallons: 330.0 gallons

- Conversion to Cubic Feet: $\frac{330.0}{7.48} = 44.12\ ft^3$ liquid

  (Volume Conversion: 7.48 gallons/cubic feet)

- Displacement Totals for Pallet and Structural Columns' Volume:

  (number of pallets)(pallet volume) = total pallet volume
  (5 pallets)(2.76 ft^3) = 13.8 ft^3

  (number of columns)(column volume) = total column volume
  (0)(0.59) = 0.0 ft^3

  Total pallet and column volume = 13.80 ft^3 + 0.0 = 128.73 ft^3

- Volume of Dike - Total Pallet and Structural Column(s) Displacement:

  Volume of Dike - Total Pallet and Column Volume =

  154.0 - 13.80 = 140.2 ft^3

Conclusion: Bay C of Building 81 has 140.0 ft^3 of diked volume available after accounting for displacement of container pallets and structural columns. Thus, Bay C has sufficient capacity to contain 10 % of the volume of containers (44.0 ft^3). The conversion factors and pallet and column volume calculations are provided in the reference material provided on page ~~32~~ 33 of Attachment D-2.

PLANT 6 WAREHOUSE

Secondary Containment Dimensions:

Bay A:

- (58'-10")(71'-8") - 24 + (6.0)(35'-0") =
  (58.66)(71.66) - 24 + (6.0)(35.0) =
  4,215.75 - 24 = 4,191.75 + 210 = 4,401.75 ft^2 **TOTAL AREA**

Secondary Containment Calculations:

- Volume of Dike: 4,401.75 x .5 = 2,200.87 ft^3

- Maximum Container Gallons: 1,492 containers x 55 gallons = 82,060.0 gallons capacity

- 10% of Maximum Container Gallons: 8,206.0 gallons

- Conversion to Cubic Feet: $\frac{8,206.0}{7.48} = 1,097.06\ ft^3$ liquid

  (Volume Conversion: 7.48 gallons/cubic feet)

- Displacement Totals for Pallet and Structural Columns' Volume:

  (number of pallets)(pallet volume) = total pallet volume
  (98 pallets)(2.76 ft^3) = 270.48 ft^3

  (number of columns)(column volume) = total column volume
  (4)(0.59) = 2.36 ft^3

  Total pallet and column volume = 270.48 ft^3 + 2.36 = 272.84 ft^3

- Volume of Dike - Total Pallet and Structural Column(s) Displacement:

  Volume of Dike - Total Pallet and Column Volume =

  2,200.87 - 272.84 = 1,928.03 ft^3

Conclusion: Bay A of the Plant 6 Warehouse has 1,928.0 ft^3 of diked volume available after accounting for displacement of container pallets and structural columns. Thus, Bay A has sufficient capacity to contain 10 % of the volume of containers (1,097.0 ft^3). The conversion factors and pallet and column volume calculations are provided in the reference material provided on page ~~32~~ 33 of Attachment D-2.

PLANT 6 WAREHOUSE (continued)

Secondary Containment Dimensions:

Bay B:

- (54'-1")(86'-2") - 24 = (54.08)(86.16) - 24 = 4,635.53 ft^2 **TOTAL AREA**

Secondary Containment Calculations:

- Volume of Dike: 4,635.53 x .5 = 2,317.77 ft^3

- Maximum Container Gallons: 1,448 containers x 55 gallons = 79,640.0 gallons capacity

- 10% of Maximum Container Gallons: 7,964.0 gallons

- Conversion to Cubic Feet: $\frac{7,964.0}{7.48} = 1,064.7\ ft^3$ liquid

  (Volume Conversion: 7.48 gallons/cubic feet)

- Displacement Totals for Pallet and Structural Columns' Volume:

  (number of pallets)(pallet volume) = total pallet volume
  (92 pallets)(2.76 ft^3) = 253.92 ft^3

  (number of columns)(column volume) = total column volume
  (4)(0.59) = 2.36 ft^3

  Total pallet and column volume = 253.92 ft^3 + 2.36 = 256.28 ft^3

- Volume of Dike - Total Pallet and Structural Column(s) Displacement:

  Volume of Dike - Total Pallet and Column Volume =

  2,317.77 - 256.28 = 2,061.49 ft^3

Conclusion: Bay B of the Plant 6 Warehouse has 2,061.0 ft^3 of diked volume available after accounting for displacement of container pallets and structural columns. Thus, Bay B has sufficient capacity to contain 10 % of the volume of containers (1,064.0 ft^3). The conversion factors and pallet and column volume calculations are provided in the reference material provided on page ~~32~~ 33 of Attachment D-2.

PLANT 6 WAREHOUSE (continued)

Secondary Containment Dimensions:
Bay C:

- $(54.25)(82.16) = 4,457.18\ ft^2$

  $(8.0)(11.25) = 90.0\ ft^2$

  $\frac{(6)(8)}{2} = 24\ ft^2$

  TOTAL AREA: $4,457.18 - 90.0 - 24.0 = 4,343.2\ ft^2$

Secondary Containment Calculations:

- Volume of Dike: $4,343.2 \times .5 = 2,171.6\ ft^3$
- Maximum Container Gallons: 1,256 containers x 55 gallons = 69,080.0 gallons capacity
- 10% of Maximum Container Gallons: 6,908.0 gallons
- Conversion to Cubic Feet: $\frac{6,908.0}{7.48} = 923.53\ ft^3$ liquid

  (Volume Conversion: 7.48 gallons/cubic feet)

- Displacement Totals for Pallet and Structural Columns' Volume:

  (number of pallets)(pallet volume) = total pallet volume
  (83 pallets)(2.76 ft^3) = 229.08 ft^3

  (number of columns)(column volume) = total column volume
  (4)(0.59) = 2.36 ft^3

  Total pallet and column volume = 229.08 ft^3 + 2.36 = 231.44 ft^3

- Volume of Dike - Total Pallet and Structural Column(s) Displacement:

  Volume of Dike - Total Pallet and Column Volume =

  2,171.6 - 231.44 = 1,940.16 ft^3

Conclusion: Bay C of the Plant 6 Warehouse has 1,940.16 ft^3 of diked volume available after accounting for displacement of container pallets and structural columns. Thus, Bay C has sufficient capacity to contain 10 % of the volume of containers (923.53 ft^3). The conversion factors and pallet and column volume calculations are provided in the reference material provided on page ~~32~~ 33 of Attachment D-2.

BUILDING 68 (PILOT PLANT WAREHOUSE)

Secondary Containment Dimensions:

- (69'-0")(7'-0") = (69.0)(7.0) = 483.0 ft^2 **TOTAL AREA**

Secondary Containment Calculations:

- Volume of Dike: 483.0 x .5 = 241.5 ft^3

- Maximum Container Gallons: 240 containers x 55 gallons = 13,200.0 gallons capacity

- 10% of Maximum Container Gallons: 1,320.0 gallons

- Conversion to Cubic Feet: $\frac{1,320.0}{7.48}$ = 176.47 ft^3 liquid

  (Volume Conversion: 7.48 gallons/cubic feet)

- Displacement Totals for Pallet and Structural Columns' Volume:

  (number of pallets)(pallet volume) = total pallet volume
  (16 pallets)(2.76 ft^3) = 44.16 ft^3

  (number of columns)(column volume) = total column volume
  (0)(0.59) = 0.0 ft^3

  Total pallet and column volume = 44.16 ft^3 + 0.0 = 44.16 ft^3

- Volume of Dike - Total Pallet and Structural Column(s) Displacement:

  Volume of Dike - Total Pallet and Column Volume =

  241.5 - 44.16 = 197.34 ft^3

Conclusion: The diked area of the Pilot Plant Warehouse has 197.0 ft^3 of diked volume available after accounting for displacement of container pallets and structural columns. Thus, the diked area has sufficient capacity to contain 10 % of the volume of containers (176.0 ft^3). The conversion factors and pallet and column volume calculations are provided in the reference material provided on page ~~32~~ 33 of Attachment D-2.

Plant 1 Pad Tension Support Structure 4 - South Bay (TS4-S)

Secondary Containment Dimensions:

A. $(7'\text{-}6" + 3'\text{-}4")(5'\text{-}2") = (10.83)(5.16) = 55.88\ ft^2$

$55.88 - 11.09 = 44.79\ ft^2$

B. $(5'\text{-}2")(49.75') = (5.16)(49.75) = 256.71\ ft^2$

C. $(4'\text{-}4")(5'\text{-}2" - 2'\text{-}5") = (4.33)(2.75) = 11.90\ ft^2$

D. $(6'\text{-}8" + 3'\text{-}3")(5'\text{-}2") = (9.91)(5.16) = 51.13\ ft^2$

$51.13 - 10.89 = 40.24\ ft^2$

E. $(49'\text{-}0")(13'\text{-}2") - (6'\text{-}4")(2'\text{-}3") =$
$(49.0)(13.16) - (6.33)(2.25) = 644.84 - 14.24 = 630.6\ ft^2$

F. $(23'\text{-}10")(5'\text{-}6") = (23.83)(5.5) = 131.06\ ft^2$

G. $\frac{(15'\text{-}0")(5'\text{-}6")}{2} = \frac{(15.0)(5.50)}{2} = 41.25\ ft^2$

H. $(25'\text{-}7" + 3'\text{-}3")(5'\text{-}1") - (3'\text{-}3")(3'\text{-}3") =$
$(28.83)(5.08) - (3.25)(3.25) = 146.45 - 10.56 = 135.88\ ft^2$

I. $(32'\text{-}6")(5'\text{-}1") = (32.50)(5.08) = 165.1\ ft^2$

J. $(4'\text{-}5")(5'\text{-}1" - 2'\text{-}6") = (4.41)(2.58) = 11.37\ ft^2$

K. $(6'\text{-}10" + 3'\text{-}2")(5'\text{-}1") - (3'\text{-}2")(3'\text{-}2") =$
$(10.0)(5.08) - (3.16)(3.16) = 50.08 - 9.98 = 40.1\ ft^2$

L. $\frac{(207.33) + (205.67)}{2} = 206.5\ ft^2 = (206.5)(87.86) \approx 18{,}143.09\ ft^2$

- $18{,}143.09 - (6'\text{-}4")(2'\text{-}4") = 18{,}143.09 - 14.74 = 18{,}128.35\ ft^2$
  $18{,}143.09 - (6.33)(2.33) = 18{,}143.09 - 14.74 = 18{,}128.35\ ft^2$

- $18{,}143.09 + 131.06 + 41.25 + 644.84 + 40.10 + 11.37 + 165.1 +$
  $30.48 + 135.89 = 19{,}343.18\ ft^2$ TOTAL AREA

Plant 1 Pad Tension Support Structure 4 - South Bay (TS4-S) (Continued)

Secondary Containment Calculations:

- Volume of Dike: 19,343.18 x .5 = 9,671.59 ft^3

- Maximum Container Gallons: 5,952 containers x 55 gallons = 327,360.0 gallons capacity

- 10% of Maximum Container Gallons: 32,736.0 gallons

- Conversion to Cubic Feet: $\frac{32,736.0}{7.48} = 4,376.5\ ft^3$ liquid

  (Volume Conversion: 7.48 gallons/cubic feet)

- Displacement Totals for Pallet and Structural Columns' Volume:

  (number of pallets)(pallet volume) = total pallet volume
  (372 pallets)(2.76 ft^3) = 1,026.7 ft^3

  (number of columns)(column volume) = total column volume
  (0)(0.59) = 0.0 ft^3

  Total pallet and column volume = 1,026.7 ft^3 + 0.0 = 1,026.7 ft^3

- Volume of Dike - Total Pallet and Structural Column(s) Displacement:

  Volume of Dike - Total Pallet and Column Volume =

  9,671.6 - 1,026.7 = 8,644.9 ft^3

Conclusion: The diked area of the Plant 1 Pad Tension Support Structure (TS-4 South) has 8,644.9 ft^3 of diked volume available after accounting for displacement of container pallets and structural columns. Thus, the diked area has sufficient capacity to contain 10 % of the volume of containers (4,376.5 ft^3). The conversion factors and pallet and column volume calculations are provided in the reference material provided on page ~~32~~ 33 of Attachment D-2.

Plant 1 Pad Tension Support Structure 4 - North Bay (TS4-N)

Secondary Containment Dimensions:

M. $(211.17)(87.56) - (4.5)(2.33) = 18,479.56 \text{ ft}^2$

- $44.79 + 256.71 + 32.66 + 11.90 + 40.24 + 630.6 + 41.25 + 131.06 + 18,479.56 = 19,668.77 \text{ ft}^2$

Secondary Containment Calculations:

- Volume of Dike: $19,668.77 \times .5 = 9,834.39 \text{ ft}^3$

- Maximum Container Gallons: 5,936 containers x 55 gallons = 326,480.0 gallons capacity

- 10% of Maximum Container Gallons: 32,648.0 gallons

- Conversion to Cubic Feet: $\frac{32,648.0}{7.48} = 4,364.7 \text{ ft}^3$ liquid

  (Volume Conversion: 7.48 gallons/cubic feet)

- Displacement Totals for Pallet and Structural Columns' Volume:

  (number of pallets)(pallet volume) = total pallet volume
  (371 pallets)(2.76 ft^3) = 1,023.96 ft^3

  (number of columns)(column volume) = total column volume
  (0)(0.59) = 0.0 ft^3

  Total pallet and column volume = 1,023.96 ft^3 + 0.0 = 1,023.96 ft^3

- Volume of Dike - Total Pallet and Structural Column(s) Displacement:

  Volume of Dike - Total Pallet and Column Volume =

  9,834.39 - 1.023.96 = 8,810.43 ft^3

Conclusion: The diked area of the Plant 1 Pad Tension Support Structure (TS-4) (North) has 8,810.43 ft^3 of diked volume available after accounting for displacement of container pallets and structural columns. Thus, the diked area has sufficient capacity to contain 10 % of the volume of containers (4,364.7 ft^3). The conversion factors and pallet and column volume calculations are provided in the reference material provided on page ~~32~~ 33 of Attachment D-2.

Plant 1 Pad Tension Support Structure 5 - North Bay (TS5-N)

Secondary Containment Dimensions:

A. (3′-4" + 6′-9" + 4′-5" + 49′-10")(5′-8") - (3′-4")(3′-4") - (4′-5")(2′-5") =
(3.33 + 6.75 + 4.41 + 49.83)(5.66) - (3.33)(3.33) - (4.41)(2.41) =
(364.05) - (11.08) - 10.62 = 342.35 ft²

B. (7′-11" + 3′-4")(5′-8") - (3′-4")(3′-4") =
(11.25)(5.66) - (3.33)(3.33) = 63.67 - 11.08 = 52.59 ft²

C. (43′-9")(5.5) = (43.75)(5.5) = 240.62 ft²

D. (5′-6")(29′-0") = (5.5′)(29.0′) = 159.5 ft²

E. (25′-7" + 3′-3")(6.0′) = (28.83)(6.0) = 172.98 ft²
(172.98 - 10.56) = 162.42 ft²

F. (32′-7" + 4′-6" + 6′-7" + 3′-4")(6.0) =
(32.58 + 4.5′ + 6.58′ + 3.33′)(6.0) = 281.94

(3′-4")(3′-4") + (4′-6")(2′-5") = (11.08) + 10.84 = 21.92

281.94 - 21.92 = 260.02 ft²

- (221′-1" + 3.25) - 6′-0" - 5′-6" = 221.08 + 3.25 - 6.0 - 5.5 = 212.88′

- (123′-3" + 4′-6" + 89′-0" + 3′-3") =
(123.25′ + 4.5′ + 89.0′ + 3.25′) = 220.0 ft²
(220.0 - 5.5 - 3′-3") = 220.0 - 5.5 - 3.25) = 211.25 ft²

- (3′-3" + 25′-7" + 12′-0" + 32′-7" + 4′-6" + 6′-7" + 3′-4") =
(3.25 + 25.58 + 12.10 + 32.58 + 4.5 + 6.58 + 3.33) = 87.82 ft²

$$\frac{212.83 + 211.25}{2} = 212.04 \text{ ft ave. Length}$$

G. (212.04)(87.75) - (4.5)(2.5) = 18,606.51 - 13.5 = 18,595.26 ft²

- (217′-6" + 3′-4" - 5′-8" - 5′-8") = 217.5 + 3.33 - 5.66 - 5.66 = 209.51

- 3′-4" + 98′-9" + 4′-7" + 95 ′-0" + 6′-5" + 9′-5" - 5′-8" - 5′-8" =
3.33 + 98.75 + 4.58 + 95.0 + 6.41 + 9.41 - 5.66 - 5.66 = 206.16

- $\frac{206.16 + 209.51}{2}$ = 207.83 ft

- 3′-4" + 6′-9" + 4′-5" + 49′-10" + 12′-3" + 7′-11" + 3′-4" =
3.33 + 6.75 + 4.41 + 49.83 + 12.25 + 7.91 + 3.33 = 87.81

Plant 1 Pad Tension Support Structure 5 - North Bay (TS5-N) (Continued)

H. (207.83)(87.81) = 18,197.74 ft^2

- 18,197.74 - (4'-7")(2'-5") - (6'-5")(3'-3") = 18,229.6 ft
  11.03 20.83

- (29.0)(5'-8") = 164.14 ft^2

I. (15.0)(5.66)/2 = 42.45 ft^2

J. (5'-7")(43'-9") = 244.12 ft^2

K. $\frac{(14'-10\frac{1}{2}")(5.5)}{2}$ = 40.90 ft^2

L. $\frac{(12'-3")(5'-8")}{2}$ = 34.66 ft^2

M. $\frac{(12.0')(6.0')}{2}$ = 36.00 ft^2

North Section of TS5 Floor Area:
18,229.6 + 342.35 + 34.66 + 52.59 + 164.14 + 42.45 + 244.12 = 19,109.91 ft^2

South Section of TS5 Floor Area:
18,595.26 - 240.62 + 40.90 + 159.50 + 162.42 + 36.00 + 260.02 = 19,494.72 ft

Secondary Containment Calculations:

North Section of TS5 Volume:

- Volume of Dike: 19,109.91 x .5 = 9,554.95 ft^3

- Maximum Container Gallons: 6,016 containers x 55 gallons = 330,880.0 gallons capacity

- 10% of Maximum Container Gallons: 33,088.0 gallons

Plant 1 Pad Tension Support Structure 5 - North Bay (TS5-N) (Continued)

- Conversion to Cubic Feet: $\frac{33,088.0}{7.48} = 4,423.53 \text{ ft}^3$ liquid

  (Volume Conversion: 7.48 gallons/cubic feet)

- Displacement Totals for Pallet and Structural Columns' Volume:

  (number of pallets)(pallet volume) = total pallet volume
  (371 pallets)(2.76 ft^3) = 1,023.96 ft^3

  (number of columns)(column volume) = total column volume
  (0)(0.59) = 0.0 ft^3

  Total pallet and column volume = 1,023.96 ft^3 + 0.0 = 1,023.96 ft^3

- Volume of Dike - Total Pallet and Structural Column(s) Displacement:

  Volume of Dike - Total Pallet and Column Volume =

  9,554.95 - 1,023.96 = 8,530.99 ft^3

Conclusion: The diked area of the Plant 1 Pad Tension Structure 5 North Bay has 8,530.99 ft^3 of diked volume available after accounting for displacement of container pallets and structural columns. Thus, the North Section of TS-5 has sufficient capacity to contain 10 % of the volume of containers (4,364.71 ft^3). The conversion factors and pallet and column volume calculations are provided in the reference material provided on page ~~32~~ 33 of Attachment D-2.

Plant 1 Pad Tension Support Structure 5 - North Bay (TS5-N) (Continued)

South Section of TS5 Volume:

- Volume of Dike: 19,484.72 x .5 = 9,747.36 ft^3

- Maximum Container Gallons: 5,936 containers x 55 gallons = 326,480.0 gallons capacity

- 10% of Maximum Container Gallons: 32,648.0 gallons

- Conversion to Cubic Feet: $\frac{32,648.0}{7.48} = 4,364.70$ ft^3 liquid

  (Volume Conversion: 7.48 gallons/cubic feet)

- Displacement Totals for Pallet and Structural Columns' Volume:

  (number of pallets)(pallet volume) = total pallet volume
  (371 pallets)(2.76 ft^3) = 1,023.96 ft^3

  (number of columns)(column volume) = total column volume
  (0)(0.59) = 0.0 ft^3

  Total pallet and column volume = 1,023.96 ft^3 + 0.0 = 1,023.96 ft^3

- Volume of Dike - Total Pallet and Structural Column(s) Displacement:

  Volume of Dike - Total Pallet and Column Volume =

  9,747.36 - 1,023.96 = 8,723.4 ft^3

Conclusion: The diked area of the Plant 1 Pad Tension Structure 5 South Bay has 8,723.4 ft^3 of diked volume available after accounting for displacement of container pallets and structural columns. Thus, the South Section of TS-5 has sufficient capacity to contain 10 % of the volume of containers (4,364.7 ft^3). The conversion factors and pallet and column volume calculations are provided in the reference material provided on page ~~32~~ 33 of Attachment D-2.

BUILDING 80 (PLANT 8 WAREHOUSE)

Secondary Containment Dimensions:

- Inside dimensions are 58 ft. x 168 ft. = 9,744 ft^2
- Areas outside of dike by doors:

  East - 8 ft. x 18 ft. = 144 ft^2

  West - 20 ft. x 40 ft. = 800 ft^2
- 9744 ft^2 - 944 ft^2 = 8,800 ft^2 TOTAL AREA

Secondary Containment Calculations:

- Volume of Dike: 8,800 x 0.5 = 4,400 ft^3
- Maximum Container Gallons: 2,532 containers x 55 gallons = 139,260 gallons capacity
- 10% of Maximum Container Gallons: 13,926 gallons
- Conversion to Cubic Feet: $\frac{13,926}{7.48}$ = 1,861.18 ft^3 liquid

  (Volume Conversion: 7.48 gallons/cubic feet)
- Displacement Totals for Pallet and Structural Columns' Volume:

  (number of pallets)(pallet volume) = total pallet volume
  (211 pallets)(2.76 ft^3) = 582.36 ft^3

  (number of columns)(size W x L x H) = total column volume
  (12 columns)(1 ft. W)(1.33 ft. L)(0.5 ft. H) = 7.98 ft^3
  (3 columns)(1 ft. W)(1.0 ft. L)(0.5 ft. H) = 1.50 ft^3

  Total pallet and column volume = 582.36 ft^3 + 7.98 ft^3 + 1.50 ft^3 = 591.84 ft^3
- Volume of Dike - Total Pallet and Structural Column(s) Displacement:

  Volume of Dike - Total Pallet and Column Volume =

  4400 ft^3 - 592 ft^3 = 3808 ft^3

Conclusion: The Plant 8 Warehouse (Building 80) has 3,808 ft^3 of diked volume available after accounting for displacement of container pallets and structural columns. Thus, the Plant 8 Warehouse has sufficient capacity to contain 10% of the volume of containers (1,862 ft^3). The conversion factors and pallet and column volume calculations are provided in the reference material provided on page 33 of Attachment D-2.

PALLET DISPLACEMENT CALCULATIONS

Based upon design parameters:

3 each: 3-inch by 4-inch by 4 feet (runner boards)

$.25W \times .33H \times 4'L \times 3 = 0.99\ ft^3$

12 each: 1-inch by 5.5-inch x 4 feet (support boards)

$4'L \times 1"H \times 5.5"W \times 12 = 1.77\ ft^3$

$0.99\ ft^3 + 1.77\ ft^3 = 2.76\ ft^3$ displacement volume per pallet

STRUCTURAL COLUMNS DISPLACEMENT CALCULATION

Column = 13"H x 13"L x 6"H

$$\frac{(13)(13)(6)}{1{,}728\ in^3/ft^3} = .59\ ft^3$$

CONVERSION FACTORS

7.48 gallons/cubic feet

1,728 cubic inch per 1 cubic foot

Note: For the purpose of these calculations, representative pallets were selected for the displacement volume calculations.

ATTACHMENT D-2

SECONDARY CONTAINMENT CAPACITY CALCULATIONS

UNIT NAME	NO. OF PALLETS	PALLET VOLUME (cubic feet)	TOTAL PALLET VOLUME (cubic feet)	NO. OF COLUMNS	COLUMN VOLUME (cubic feet)	TOTAL COLUMN VOLUME (cubic feet)	TOTAL PALLET AND COLUMN VOLUME (cubic feet)	DIKE VOLUME (cubic feet)	DIKE VOLUME LESS PALLET AND COLUMN VOLUME (cubic feet)	LIQUID VOLUME (10%) (cubic feet)
KC2 Bay 1	73	2.76	201.48	0	0.59	0.00	201.48	2059.46	1857.98	429.41
Bay 3	76	2.76	209.76	0	0.59	0.00	209.76	1804.74	1594.98	447.06
Bay 4	58	2.76	160.08	0	0.59	0.00	160.08	1447.10	1287.02	341.18
Bay 5 - Large Dike	45	2.76	124.20	0	0.59	0.00	124.20	1175.32	1051.12	264.71
Bay 5 - Small Dike	9	2.76	24.84	0	0.59	0.00	24.84	140.0	115.16	52.94
Bay 6	58	2.76	160.08	0	0.59	0.00	160.08	1205.43	1045.35	341.18
Bay 7	26	2.76	71.76	0	0.59	0.00	71.76	719.63	647.87	152.94
Bay 8	12	2.76	33.12	0	0.59	0.00	33.12	473.88	440.77	70.59
TS4(N)	371	2.76	1023.96	0	0.59	0.00	1023.96	9834.80	8815.84	4364.71
TS4(S)	372	2.76	1026.7	0	0.59	0.00	1026.7	9671.59	8644.06	4376.47
Bldg. 79- Bay A	98	2.76	270.48	4	0.59	2.36	272.84	2200.88	1928.04	1097.06
Bay B	92	2.76	253.92	4	0.59	2.36	256.28	2317.77	2061.49	1064.7
Bay C	83	2.76	229.08	4	0.59	2.36	231.44	2171.59	1940.15	923.53

ATTACHMENT D-2 (continued)

SECONDARY CONTAINMENT CAPACITY CALCULATIONS

UNIT NAME	NO. OF PALLETS	PALLETS VOLUME (cubic feet)	TOTAL PALLET VOLUME (cubic feet)	NO. OF COLUMNS	COLUMN VOLUME (cubic feet)	TOTAL COLUMN VOLUME (cubic feet)	TOTAL PALLET AND COLUMN VOLUME (cubic feet)	DIKE VOLUME (cubic feet)	DIKE VOLUME LESS PALLET AND COLUMN VOLUME (cubic feet)	LIQUID VOLUME (10%) (cubic feet)
Bldg. 81-Bay A	46	2.76	126.96	0	0.59	0.00	126.96	1243.65	1116.69	502.94
Bay B	46	2.76	126.96	3	0.59	1.77	128.73	1647.81	1519.08	605.88
Bay C	5	2.76	13.80	0	0.59	0.00	13.80	154.35	140.55	44.12
Bldg. 56	132	2.76	364.32	0	0.59	0.00	364.32	3864.14	3499.82	1552.94
Bldg. 68 - Diked Area	16	2.76	44.16	0	0.59	0.00	44.16	241.5	197.34	176.47
TS5(N)	371	2.76	1023.96	0	0.59	0.00	1023.96	9531.88	8507.92	4423.53
TS5(S)	371	2.76	1023.96	0	0.59	0.00	1023.96	9747.36	8723.4	4364.70
Bldg. 80	211	2.76	282.36	12 3	0.67 0.50	9.48	591.84	4400	3808	1861.16

SECTION G - CONTINGENCY PLAN

RCRA PART B PERMIT APPLICATION

Revision 3.0

April 1997

Fernald Environmental Management Project

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SECTION G - CONTINGENCY PLAN

RCRA Part B Permit Application
Fernald Environmental Management Project
Fernald, Ohio

This Contingency Plan is required by Ohio Administrative Code (OAC) 3745-50-44(A)(7) and Title 40 of the Code of Federal Regulations (CFR) 270.14 (b)(7) in order to provide planned procedures to be followed in an emergency at any hazardous waste facility. This information is submitted for the Fernald Environmental Management Project (FEMP), formerly the Feed Materials Production Center (FMPC), in accordance with OAC 3745-54-50 to 56 and 40 CFR 264.50 to 56 as well as other applicable parts of the Ohio Administrative Code. This Contingency Plan addresses the actions to be taken to minimize hazards to human health or the environment from fires, explosions, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water.

The FEMP manages both hazardous waste and mixed waste. Mixed waste is defined as waste that contains both a hazardous component regulated under RCRA and a radioactive component consisting of source, special nuclear, or by-product material regulated under the Atomic Energy Act. Any information included in this section on the radioactive portion of mixed wastes generated or stored at the FEMP is included for informational purposes only and is not intended to be part of the facility's RCRA permit.

G-1 GENERAL INFORMATION

The FEMP is a large scale integrated production facility which formerly produced uranium metal used in the fabrication of fuel cores for nuclear reactors operated by the United States Department of Energy. During production, several types of hazardous wastes were produced from virgin materials, including (but not limited to): toxic halogenated solvents (from parts cleaning), ignitable oil and lubricants (from machining operations), ignitable and metal-bearing paint residues (from drum reconditioning), corrosive acids and alkalis (from metal and ore digestion and extraction), and pyrophoric non-nuclear metals (from foundry operations). In addition, some non-hazardous materials

such as cleaning rags and wastewater sump cakes were contaminated with hazardous wastes, and thus became hazardous wastes themselves.

All production activities at the facility have ended. Current activities include waste management operations, site remediation ~~remedial investigation~~, environmental response actions, nuclear materials disposition, and miscellaneous operations such as wastewater treatment. More specifically, waste storage operations are allocated as follows:

HWMU No. 19 (CP Storage Warehouse - Bldg. 56)
Location: South of 3rd Street; West of B Street
Maximum Capacity: 116,160 gallons / 2,112 drums
Waste Types: Various hazard classes

HWMU No.20 (Plant 1 Pad)
Location: North of 2nd Street; West of B Street
Maximum Capacity: 11,222,200 gallons / 198,000 drums
Waste Types: Various hazard classes

HWMU No.29 (Plant 8 Warehouse/Bldg.. 80)
Location: Corner of A Street and 1st Street
Maximum Capacity: 139,260 gallons / 2532 drums
Waste Types: Combustible solids

HWMU No.33 (Pilot Plant Warehouse/Bldg. 68)
Location: Southwest corner of production area
Maximum Capacity: 13,200 gallons / 240 drums
Waste Types: Ignitable dry wastes, metals, metal salts and oxides

HWMU No.34 (KC-2 Warehouse/Bldg. 63)
Location: B Street - North of 2nd Street
Maximum Capacity: 200,640 gallons / 3,648 drums
Waste Types: ~~Combustible and flammable liquids~~
Various hazard classes EXCEPT ignitables

HWMU No.35 (Plant 9 Warehouse/Bldg. 81)
Location: D Street - North of 2nd Street
Maximum Capacity: 86,240 gallons / 1,568 drums
Waste Types: Combustible liquids and solids, corrosives, PCBs

HWMU No.37 (Plant 6 Warehouse/Bldg. 79)
Location: E Street between 1st and 2nd Street
Maximum Capacity: 230,780 gallons / 4,196 drums
Waste Types: Combustible and flammable liquids, solids, trash, PCBs

The FEMP site and mailing addresses are:

Fernald Environmental Management Project - Site Address
7400 Willey Road
Fernald, Ohio 45030
(513) 648-3000

Fernald Office - Mailing Address
U. S. Department of Energy
P.O. Box 538705
Cincinnati, Ohio 45253-8705
(513) 648-3000

Operation missions and program direction are administered through the U.S. Department of Energy (DOE) Office of Environmental Restoration and Waste Management (EM). The name, address, and telephone number of this office are:

U. S. Department of Energy
Office of Environmental Restoration and Waste Management
1000 Independence Avenue Southwest
Washington, D. C. 20585
(202) 586-5000

This plan describes the actions facility personnel must take in response to a hazardous waste event or emergency such as fire, explosion, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water. This plan applies to all areas of the facility where hazardous waste is being handled or stored. Therefore, in addition to the seven storage units the FEMP is seeking to permit, all hazardous waste management units are discussed in this plan. The location of the active hazardous waste management units (HWMUs) which the FEMP is seeking to permit as RCRA storage facilities are shown in Figure G-1. A copy of this contingency plan is located at each such unit. The location of all other HWMUs is shown within Attachment G-1 on the inserted map "Evacuation Routes", located between pages 9 and 10; specific route maps are posted at these units. Since a potential incident could occur at any HWMU, Attachment G-1 describes

evacuation routes for all HWMUs and fire and safety equipment available for ~~all~~ HWMUs containing hazardous waste.

G-1a Emergency Organization

The Emergency Coordinator may request support and allocate resources under the responsibilities of any or all of the Emergency Response Support Organizations discussed in this section. Table G-2 provides a roster of the FEMP Emergency Organization. Figure G-2 provides an organizational chart of the FEMP Emergency Response Organization.

Fernald Environmental Management Project

Emergency Management

The Emergency Director (the operating contractor President or his designee) has designated an Assistant Emergency Duty Officer (AEDO) who is responsible for emergency responses at the FEMP. The AEDO is the primary Emergency Coordinator.

The Emergency Coordinator (AEDO) manages and controls the response to any event at the FEMP. A minimum of one Emergency Coordinator (AEDO) is present onsite at all times. Through an extensive Emergency Duty Officer training program assembled by the ~~Training Division,~~ Emergency Planning Department, the Emergency Coordinator (AEDO) is knowledgeable of this Contingency Plan, operations and activities at the FEMP, the locations and characteristics of hazardous waste at the facility, the location of records within the FEMP, and the facility layout. Figure G-3.1 illustrates the range of training requirements for the AEDO.

The Emergency Coordinator (AEDO) can activate the FEMP emergency response organizations including, but not limited to, the Emergency Response Team, Monitoring Team, medical staff, security personnel, the Emergency Operations Center, the Joint ~~Public~~ Information Center, the Triage Center, and the Staging Area. Additional support and mutual aid may be summoned at any time by the Emergency Coordinator (AEDO). The Emergency Coordinator (AEDO) establishes a field command post to manage and control all response actions at the incident scene.

Emergency Response Team

The Emergency Response Team is responsible for on-scene event mitigation, rescue, damage control, firefighting, environmental monitoring, and medical assistance.

Security Response Organization

The Security Response Organization maintains the security and integrity of the FEMP. The FEMP security staff consists of qualified security inspectors. The security staff provides surveillance and control at the incident location and the entire facility during an emergency.

Emergency Operations Center (EOC) Staff

The Emergency Operations Center (EOC) Staff is a functional organization which works with the Emergency Coordinator (AEDO) to oversee and direct emergency response actions. The Emergency Operations Center, located in the Administration Building, assesses the incident, coordinates protective actions, and coordinates personnel accountability. The Emergency Operations Center also supports and directs protective actions, allocating additional resources as needed and providing notifications and information to employees, appropriate authorities, and the general public. The EOC Staff is composed of three primary teams, the Policy Team, Operations Team, and the Information Management Team. Primary and alternate staff members have been selected for each position.

Public Information Response

Public information spokespersons representing the FEMP, Butler and Hamilton counties, and the State of Ohio assemble at the Joint ~~Public~~ Information Center ~~(JPIC)~~ (JIC). The FEMP provides administrative support and a technical advisor to the ~~JPIC~~ JIC Team. Technical advisors from other organizations can be summoned as needed.

Medical Response Organization

The Medical Response Organization provides treatment and stabilization for injuries. At least two state certified Emergency Medical Technicians are on duty at all times as members of the Emergency Response Team.

Communications Center Staff

Site-based communications are operated by security personnel. The security staff also dispatches ambulance service in response to ambulance calls on-site. The Communications Center provides communication links between the Emergency Coordinator (AEDO) and support groups, implements systems instructions, and makes appropriate notifications when instructed.

Monitoring Team

The FEMP monitoring organization consists of Radiological Safety and Industrial Hygiene Technicians for on-site and off-site monitoring of chemicals and radiological materials. Monitoring data is provided to the Emergency Coordinator (AEDO). The State of Ohio provides monitoring and assessment support to the counties as requested.

U.S. Department of Energy (DOE)

~~**DOE Fernald Office (DOE-FN)**~~ **DOE-Fernald Environmental Management Project (DOE-FEMP)**

The ~~DOE Fernald Office (DOE-FN)~~ DOE-Fernald Environmental Management Project (DOE-FEMP) provides oversight, ensures an effective response, conducts investigations, makes appropriate notifications, and coordinates interactions with the media and requests for assistance during an incident. The ~~DOE-FN~~ DOE-FEMP is responsible for notifying state and federal governmental agencies of an incident as necessary.

DOE Headquarters (DOE-HQ)

DOE Headquarters (DOE-HQ) Office of Environmental Restoration and Waste Management has overall responsibility for emergency operations at the FEMP and designates response authority to the AEDO to act as the primary Emergency Coordinator. The FEMP is delegated specific responsibilities for implementing event response and for notifying the DOE Emergency Operations Center (DOE-HQ EOC).

State of Ohio

Ohio Emergency Management Agency (OEMA)

The Ohio Emergency Management Agency (OEMA) coordinates disaster response for all state

agencies. OEMA also procures support and assistance from the Federal government as necessary.

Butler and Hamilton Counties

Butler and Hamilton counties may activate their respective Emergency Operations Centers in an emergency. The counties provide emergency medical service and fire protection support through mutual aid agreements. The county law enforcement organizations provide additional support as needed.

G-1b Distribution

Copies of this Contingency Plan and all revisions to this Plan are maintained at the FEMP EOC and submitted to the following off-site organizations via certified mail (return receipt) or overnight delivery service:

- Crosby Township Fire Department
- Hamilton County Emergency Management
- Hamilton County Sheriff
- Mercy Hospital
- Ohio Emergency Management Agency
- Ohio Highway Patrol, Post 9
- Providence Hospital
- American Red Cross Disaster Services
- Butler County Emergency Management Agency
- Butler County Sheriff
- Colerain Township Fire Department
- Ross Township Fire Department
- Ross Township Police Department
- University Hospital
- Ohio EPA
- U.S. EPA

G-2 EMERGENCY COORDINATION

The FEMP Emergency Preparedness staff, headed by the ~~Emergency Coordinator (AEDO),~~ Emergency Preparedness Manager, is in charge of the preparation for ~~and response to~~ an emergency at the FEMP. The Assistant Emergency Duty Officer (AEDO) is in charge of emergency response. Figure G-3 depicts the relationships between the key FEMP Emergency Preparedness Staff. Figure G-3.1 describes the qualifications for the staff.

The Emergency Operation Personnel & Organizations list in Table G-1 provides emergency phone or pager contact information. Individuals or organizations on this list are contacted through the Communications Center as required.

FEMP Emergency Preparedness Staff

Emergency Coordinator (AEDO)

The Assistant Emergency Duty Officer (AEDO) has been designated as the primary onsite Emergency Coordinator. The Emergency Coordinator (AEDO) is the Utility Engineer on shift. The Emergency Coordinator has authority to initiate all necessary response actions. The Emergency Coordinator responds to the event site, assesses and categorizes the event as an emergency or lesser event.

There are currently ~~five~~ four personnel assigned to the position of Utility Engineer. This group works a ~~five~~ four-person rotating shift schedule. A status board which lists the Emergency Coordinator (AEDO) and Emergency Chief is established for each shift at the Communications Center. At least one Emergency Coordinator (Utility Engineer) is on site at all times, who can be reached by pager. If the shift AEDO should be unavailable for duty, an Alternate AEDO will be summoned. The Emergency Chief will act as AEDO until the Alternate AEDO arrives. Table G-1 lists the pertinent contact information for the designated Emergency Coordinators (AEDOs).

As stated in section G-1, the Emergency Coordinator (AEDO) is fully knowledgeable of this Contingency Plan, operations and activities at the FEMP, the locations and characteristics of hazardous waste at the facility, the location of records within the FEMP, and the facility layout. In addition to the training listed in ~~table~~ Table G-3.1 and in Section H, the Utility Engineering job description requires a B.S. degree in a related field plus five years of related experience.

The Emergency Coordinator (AEDO) has the authority to activate the FEMP Offsite Emergency Warning System at any time. The Emergency Coordinator (AEDO) is a representative of the Emergency Operations Center (EOC) staff and may activate the EOC for response support. Mandatory activation of the EOC is required for all emergencies. All EOC staff members are supplied with personal pagers that can be activated by a group page. Off-duty Utility Engineers, Security Lieutenants, ~~Safety and Fire Inspectors~~ Fire Fighter/Emergency Response Specialists, and Medical personnel may also be summoned in this manner.

Emergency Duty Officer

The Emergency Duty Officer is the designated, on-call representative of the Emergency Operations Center and senior facility management. The Emergency Duty Officer reviews the emergency assessment with the Emergency Coordinator and coordinates the Emergency Operations Center staff in support of the AEDO. The Emergency Duty Officer is responsible for proper notification of off-site response organizations.

The Emergency Duty Officer is in control of response operations until the Deputy Emergency Director approves and assumes control of the response organization. ~~The Emergency Duty Officer remains part of the Emergency Operations Center staff providing management oversight to the Emergency Coordinator.~~ Designated senior staff managers rotate as the Emergency Duty Officer.

The Emergency Duty Officer may be reached through the 24-hour-staffed FEMP Communications Center by:

- personal digital display pager; or
- ~~personal portable cellular telephone; or~~
- conventional telephone service.

In addition to the training listed in ~~Table~~ Figure G-3.1 and Section H, the job description for the Emergency Duty Officer requires a BS degree in a related field plus eight years of related experience that includes three years of management responsibilities.

Emergency Chief (EC)

The Emergency Chief directs the Emergency Response Team's remedial activities. The Emergency Chief reports directly to the Emergency Coordinator. The Emergency Chief is the ~~Safety and Fire Inspector~~ Fire Fighter/Emergency Response Specialist on shift. At least one ~~Safety and Fire Inspector~~ Fire Fighter/Emergency Response Specialist is on site at all times.

The ~~Safety and Fire Inspector~~ Fire Fighter/Emergency Response Specialist on duty may be reached in the following ways:

- via radio through the 24-hour-staffed FEMP Communications Center (513) 648-4444
- office (513) 648-4298
- mobile vehicle cellular telephone (513) 535-1367 (513) 582-2584
- by personal digital display pager

In addition to the training listed in table G-3.1 and in Section H, the job description for the ~~Safety and Fire Inspector~~ Fire Fighter/Emergency Response Specialist requires two years of post high school studies in a related field plus three years of related experience in fire inspection/code enforcement.

Release Evaluator

A Release Evaluator evaluates regulatory requirements for reporting hazardous waste releases. The Release Evaluator is on call on a 24-hour basis through a personal digital pager and assists the Emergency Coordinator and Emergency Duty Officer in determining the need for regulatory reporting and notifications.

G-3 IMPLEMENTATION

The first step taken during any incident involves its observance by employees and supervisors on the scene. Actions to be taken in reporting an explosion, fire, or release are described in Attachment G-1.

The Emergency Coordinator categorizes the event according to increasing levels of severity as defined in Figure G-5.1:

1) LOGGABLE EVENT
2) OFF-NORMAL EVENT
3) UNUSUAL OCCURRENCE
4) EMERGENCY

An event greatest in magnitude is categorized as an Emergency, and determines if the event requires assistance beyond the capabilities of the Emergency Response Team (ERT). Categorization of a hazardous waste incident as an Emergency activates the Emergency Operations Center (EOC) and thereby implements this Contingency Plan.

The following implementation plan is used to respond to a hazardous waste event. Contingency Plan implementation and notification actions are diagramed in Figure G-4 and are summarized in Figure G-5.1, the Emergency Categorization Level Guide. This Guide lists actions for events involving hazardous waste and radioactive material and includes numerical values to assist in evaluating and classifying the event. Implementation of the Contingency Plan is initiated for potential or actual events involving hazardous wastes or hazardous waste constituents.

The Emergency Coordinator after categorizing an event as an emergency, begins evaluation and classification of the event per Figure G-5.2, the Emergency Action Level Guide, and advises the Emergency Duty Officer as necessary. By increasing order of severity, the action levels for emergencies are:

4a) ALERT
4b) SITE AREA EMERGENCY
4c) GENERAL EMERGENCY

The Emergency Coordinator or the Emergency Duty Officer (as directed by the Emergency Coordinator) activates the Emergency Operations Center as necessary. The emergency action level may be changed

by the Emergency Operations Center staff, based on information provided by the Emergency Coordinator (AEDO) at the scene and on an assessment of potential health effects or environmental impacts by the Emergency Operations Center staff.

The Emergency Coordinator retains responsibility for directing and coordinating all efforts to resolve the emergency at the field command post with the assistance of the Emergency Operation Center once it is declared operational. Such actions may include, but are not limited to, the following:

- Responding, and assuring the response of others, to all alarms sent over the site-wide alarm system, radiation detection alarm, and emergency message systems;
- Coordinating all emergency response groups;
- Instituting any operational changes necessary to control the emergency, including shut-down of operations as required;
- Directing the Communications Center to send out the necessary alarms and messages for personnel evacuation and accountability;
- Instructing the Communications Center, when necessary, to obtain mutual aid assistance such as rescue and fire fighting equipment and crews.

Assistance may be requested from:

Crosby Township Volunteer Fire Department
Telephone: 911 or 825-2260 (Hamilton County Communications Center)

Colerain Township Volunteer Fire Department
Telephone: 911 or 825-2260 (Hamilton County Communications Center)

Ross (Venice) Volunteer Fire Department

Telephone: 911 or ~~844-1515~~ 887-3010 (Butler County Sheriff's Dispatcher)

- Requesting further assistance, as necessary, from the Butler County and the Hamilton County emergency response agencies. Each agency has prepared a "Response Plan for a Hazardous Materials Emergency at the Feed Materials Production Center".

- Terminating the state of emergency as conditions permit and instructing the Communications Center to sound the appropriate signal.

G-4 EMERGENCY RESPONSE PROCEDURES

The following procedures are the responsibility of the Emergency Coordinator (AEDO) or his designee whenever the Contingency Plan is implemented.

G-4a Notification

General Notification Activities

1) The Emergency Coordinator (AEDO) informs Communications Center that the Contingency Plan has been implemented and is classified as a hazardous waste ALERT, SITE AREA EMERGENCY, or GENERAL EMERGENCY.

2) The Communications Center (or Emergency Coordinator (AEDO)) notifies Emergency Chief (EC) and Emergency Duty Officer (EDO) of the event categorization.

3) The Emergency Duty Officer notifies Emergency Director (ED) and DOE Site Manager of the event categorization.

4) The Communications Center completes County Event Report[1] as directed by the Emergency Coordinator (AEDO).

5) The Communications Center Operator activates site-wide alarm system, the site-wide message system, and/or the off-site Emergency Warning System, as directed.

6) The Emergency Coordinator (AEDO) begins identification of the character, source, amount, and extent of any released materials by observation, for example hazardous waste labels on the container, review of facility records, interaction with facility personnel, and if necessary, by chemical analyses.

7) Concurrently, the Emergency Coordinator (AEDO) assesses possible hazards to human health and/or the environment that may result from the release, fire, or explosion. This assessment will consider both direct and indirect effects of the event.

8) The Communications Center Operator in coordination with the Emergency Operations Center completes all required notifications to:

- DOE-HQ EOC,
- State of Ohio Emergency Management Agency (OEMA), who then notifies the appropriate offsite agency(ies) listed in Table G-1, according to the type of incident,
- Butler and Hamilton counties' 24-hour notification points,
- Director, Ohio Environmental Protection Agency
- FEMP Release Evaluator,
- ~~DOE-FN~~ DOE-FEMP Duty Officer,
- Appropriate local organizations, if not notified by OEMA;
- Federal and State regulatory agencies, if not notified by OEMA.

1 The County Event Report is an emergency event report form used for making notifications to both Butler and Hamilton Counties for events categorized as Alert or higher.

The first three agencies listed above are notified within 15 minutes of any hazardous waste emergency.

9) The ~~DOE-FN~~ DOE-FEMP Duty Officer provides FEMP Communications Center, as soon as possible, with a written record documenting that the appropriate regulatory agencies have been verbally contacted.

10) The ~~DOE-FN~~ DOE-FEMP Duty Officer is responsible for making and verifying any follow-up notifications communicated to them by the FEMP, Emergency Coordinator (AEDO), Emergency Duty Officer or Emergency Operations Center.

Initial Oral Notification for Hazardous Waste Emergencies

The Emergency Coordinator (AEDO) or the Emergency Operations Center immediately reports to DOE-HQ when the facility has had a release, fire, or explosion which could threaten human health or the environment.

The FEMP Emergency Operations Center notifies appropriate local authorities to advise whether protective actions are required. The FEMP Emergency Operations Center provides oral notification immediately to the Ohio Emergency Management Agency. The ~~DOE-FN~~ DOE-FEMP Duty Officer will provide oral notification immediately to the Ohio EPA Emergency Response Center.

The verbal report will contain the following information[2]:

- name, address, and telephone number of the reporter;
- name and address of the facility;
- the time and date of the incident;
- type of incident (e.g., fire, spill, etc.);

2 Form A (Ohio Hazardous Waste Release Fire, Explosion Report to Ohio EPA) may be used as a guideline to facilitate this verbal reporting.

- identification of material(s) involved to the extent known;
- quantity of each material included;
- extent of injuries, if any;
- potential hazards to human health or the environment, outside of the facility; and
- date and time that call was made and person contacted.

Local Evacuation Notices

Local agencies are responsible for protective actions required for the population surrounding the FEMP. The FEMP Communications Center will activate the Off-site Emergency Warning System for emergency events that could have significant off-site impact. The FEMP Off-Site Emergency Warning System is utilized to inform the population within a two-mile radius of the FEMP to seek shelter and tune to an Emergency Broadcast System Station for further instructions.

Written Notification

A written report notifying Ohio EPA that this Contingency Plan was implemented is submitted to the Ohio EPA by DOE within 15 days after an occurrence of an incident that requires implementation of this Contingency Plan. The report will include the following information:

- name, address, and telephone number of the owner or operator of the facility;
- name, address, and telephone number of the facility;
- date of incident;
- time of incident;
- type of incident (e.g. fire, spill);
- type of material(s) involved;
- quantity of material(s) involved;
- the extent of injuries, if any;
- an assessment of actual or potential hazards to human health or the environment, where this is applicable;
- estimated quantity and disposition of recovered material that resulted from the incident; and

- an outline or description of procedures or measures that will be taken to prevent or mitigate such incidents in the future.

Cessation/Resumption of Activities

The Emergency Coordinator (AEDO) must take the preventive measures described in Section G-4e, if the event causes the affected area of the facility to cease activities.

The equipment in the affected area of the facility will be returned to a clean and serviceable condition after an emergency. Waste generated during spill cleanup will be managed in accordance with all applicable regulatory requirements. Ohio EPA regulatory authorities will be notified by the Department of Energy of the readiness to resume hazardous waste activities.

G-4b Identification of Hazardous Materials

The Emergency Coordinator (AEDO) immediately begins identification of the character, exact source, amount, and extent of the event or release.

The Emergency Coordinator (AEDO) will begin identification of the hazardous material by using the following procedure:

1) Visual inspection of the container labeling will be the initial identification method. The labeling includes all pertinent waste characterization information.

2) If labels are obscured or not easily read, site records such as the hazardous waste log sheets may be used to identify the composition and quantity of stored or released material. A detailed inventory of the location of every drum of hazardous waste is maintained and readily available from the Materials Control and Accountability (MC&A) inventory records.

3) Samples will be taken for analysis and characterization if the released material cannot be identified by the above methods.

G-4c Assessment

The Emergency Coordinator (AEDO) will assess potential hazards to human health or the environment from the incident. The assessment will consider both direct and indirect effects of the release such as the effects of any hazardous fumes released. The Emergency Coordinator (AEDO) assesses the event by evaluating:

- The population at risk (both on- and off-site);
- The environmental conditions contributing to the seriousness of the event such as wind speed and direction, precipitation, ground moisture, and temperature;
- Potential radionuclide hazards;
- Protective Action Guide (PAG) or Emergency Response Planning Guideline (ERPG) exposure levels; and
- The capabilities of available equipment.

The existing DOE event categorization system used by the FEMP provides a uniform, shared understanding of event severity. The emergency categorization system classifies emergency events based on the potential or actual impact of the event on facility safety, facility personnel health and safety, and on public health and safety. The site Emergency Plan provides for predetermined responses by the Emergency Coordinator (AEDO) based upon the incident categorization criteria.

Categorization Systems

As previously noted in Section G-3, the four major event categories, in order of increasing severity, are: Loggable Event, Off-Normal Event, Unusual Occurrence, and Emergency. Events are categorized using the criteria defined in Figure G-5.1, Event Categorization Level Guide. The categorization of a hazardous waste incident as an Emergency activates the Emergency Operations Center (EOC) and implements the contingency plan. Emergency levels are further classified, using the criteria in Figure G-5.2, Emergency Action Level Guide, as General Emergency (most severe), Site Area Emergency, or Alert (least severe) as defined below.

General Emergency

A General Emergency at a non-reactor facility such as the FEMP is declared when an event occurs which involves actual or imminent catastrophic reduction of facility safety systems with potential for loss of containment or confinement integrity. A General Emergency may involve a release of large quantities of hazardous waste to the environment and/or a release of hazardous waste (radiological or non-radiological) that can reasonably be expected to exceed appropriate Protective Action Guide or Emergency Response Planning Guideline exposure levels off-site.

A General Emergency is declared during a transportation incident when an actual or imminent catastrophic reduction in the safety of the shipment has occurred, any release of hazardous waste is expected to exceed appropriate Protective Action Guide or Emergency Response Planning Guideline exposure levels in a general public area, or if the event has occurred on a DOE site and the release is expected to exceed appropriate Protective Action Guide or Emergency Response Planning Guideline exposure levels off-site.

If a General Emergency is declared, the Emergency Coordinator (AEDO) immediately directs the Communication Operator to activate the EOC, the FEMP Off-site Emergency Warning System, the Sitewide Alarm System, and the Joint ~~Public~~ Information Center ~~(JPIC)~~ (JIC), to make the required announcements for site protective actions. Emergency Response Team assistance will be required and notification shall be made as described in Section G-4a. Off-site response assistance and/or response may be required.

Site Area Emergency

A Site Area Emergency at a non-reactor facility such as the FEMP is declared when events are in progress or have occurred which involve actual or likely major failures of facility functions needed for protection of workers and the public. A Site Area Emergency is also declared when a transportation incident has occurred which involves an actual or potential major reduction in the safety of the shipment. Any release of hazardous waste is expected to exceed appropriate Protective Action Guide or Emergency Response Planning Guideline exposure levels onsite or in the immediate vicinity of the transportation incident, but is not expected to exceed the

appropriate Protective Action Guide or Emergency Response Planning Guidelines off-site, or in a general public area.

If a Site Area Emergency is declared, the Emergency Coordinator (AEDO) immediately directs the Communication Operator to activate the EOC, the Sitewide Alarm System and to make the required announcements for information and for local or site protective actions. Full activation of the EOC is required. The Joint ~~Public~~ Information Center ~~(JPIC)~~ (JIC) may also be activated. ERT assistance will be required and notifications shall be made as described in Section G-4a. Off-site response assistance and/or response may be required.

Alert

An Alert is declared at a non-reactor facility such as the FEMP when events are in progress or have occurred which involve an actual or potential substantial impact on the safety of the facility.

An Alert is also declared when a transportation incident has occurred which involves an actual or potential substantial impact on the safety of the shipment. An event is classified as an Alert if any release of hazardous waste is expected to be limited to small fractions of the appropriate Protective Action Guide or Emergency Response Planning Guidelines exposure levels, both onsite or in the immediate vicinity of the transportation incident.

If an Alert is declared, the Emergency Coordinator (AEDO) immediately directs the Communication Center Operator to activate the EOC, the Sitewide Alarm System and to make the required announcements for local protective actions. The Joint ~~Public~~ Information Center ~~(JPIC)~~ (JIC) may also be activated. ERT assistance will be required and notifications shall be made as described in Section G-4a. Off-site response assistance and/or response may be required.

G-4d Control Procedures

Emergencies involving hazardous waste will fall under three general classifications for the purpose of this Contingency Plan:

- explosion
- fire
- spills or material release.

The FEMP Emergency Response Team is prepared for immediate response to fires, explosions, and spills at all times. Personal protective clothing, pumps, generators, and respiratory equipment are noted in Section G-5; containment supplies and procedures in Section G-5(b); and major self-propelled and other "heavy" equipment in Section G-5(a)(4).

The following Emergency Response Team members respond to fire alarms as needed:

- Emergency Chief with Fire & Rescue service vehicle
- Emergency Coordinator (AEDO) with vehicle
- Industrial Mechanics from Garage driving pumper truck and ambulance if requested.
- Security Officer with vehicle
- Emergency Coordinator (AEDO) or Emergency Chief, if required, will request Security to transport a driver from the fire scene to the heavy equipment building to obtain additional equipment (i.e., a second pumper truck).

Rescue of persons from an evacuated building or area will be undertaken only by the Emergency Response Team under the direction of the Emergency Chief.

Response procedures for the Emergency Response Team and other trained personnel are summarized below:

1) Immediately notify personnel to evacuate the danger area and activate the local evacuation alarm while taking action to ensure own personal safety.

2) Report urgent situations directly to the Communications Center via the Emergency Phone Number 6511, pull manual fire alarm, or have the report relayed to the Communications Center over the site-wide FM radio network, if a person with a portable radio is nearby. Otherwise, report information to a local supervisor who will relay the report to the Communications Center or Emergency Coordinator (AEDO).

3) Report the following information to the Emergency Coordinator (AEDO):

- Location;
- Type of emergency; fire, explosion, chemical release, and personnel, equipment, and chemicals or hazardous wastes involved and amounts if known;
- The magnitude of the emergency, such as an estimate of the extent, size, quantity, volume, intensity, area, etc.; and
- Emergency actions taken.

4) If possible, the facility personnel encountering the emergency should remain in the vicinity to direct emergency service groups to the scene.

5) Determine need for emergency service groups and summon them by calling 6511, pulling manual fire alarms, or relaying the information to the Communications Center via the FM radio network.

6) Shut off all operation equipment, air, water, steam, gas, and electricity.

7) Remove and segregate all non-burning combustible or otherwise hazardous wastes from the vicinity of the incident, depending on the location of the incident.

8) Unlock all doors.

9) Evacuate all personnel in the vicinity of the incident not actively involved in responding to the emergency.

10) Account for all personnel at location or at the Rally Point.

11) Assist the Emergency Coordinator (AEDO) if called upon.

12) Assess possible human health and environmental hazards of the event and define or assess the hazard impact including:

- Identify the involved substance and its source;
- Determine the extent and the amount of materials involved;

13) Assess the emergency and establish the initial event categorization;

14) Authorize the request for mutual aid;

15) Notify the EDO of significant actions prior to EOC being declared operational;

16) Set up a field command post to ensure coordination of all EOC instructions. The field command post shall formulate and forward requests for additional resources.

17) Initiate the "All Clear" signal when the emergency is under control and/or resolved;

18) Initiate necessary precautions to ensure that further fires, explosions and releases do not occur, recur or spread to other hazardous waste or materials;

19) Initiate appropriate monitoring for leaks, pressure build up, gas generation or rupture in valves, pipes, or other equipment;

20) Initiate reentry activities including recovery, treatment, storage, and/or disposal of any recovered waste, contaminated soil, surface water, or other materials resulting from the emergency;

21) Ensure that all emergency equipment is returned to normal status when the event has been terminated.

Should the EC or Emergency Coordinator (AEDO) determine that a fire is out of control and additional personnel are required, the Emergency Coordinator (AEDO) will direct the Communications Operator to initiate the call-in for additional FEMP fire response personnel by activating the Group C pagers.

Fire fighting support can be requested from surrounding community fire departments. The members of the arriving mutual aid fire department will be met at a staging area or at the gate by FEMP personnel, given any pertinent instructions, supplied with Thermal Luminescent Detector (TLD) badges, and escorted to the location of the fire.

The personnel responding from off-site departments will be under FEMP direction. They will be responsible for their own equipment and to their senior officer who will report to the Emergency Coordinator (AEDO) for instructions.

G-4e Prevention of Recurrence or Spread of Hazardous Waste Fires, Explosions or Releases

Actions to prevent the recurrence or spread of releases or fires include immediately determining the cause of the incident, stopping of processes and operations where applicable, cleaning up all debris from the incident and maintaining good housekeeping, containing and collecting released waste, recovering and isolating affected containers, ensuring fires are completely extinguished, and decontaminating affected areas and equipment. Procedures and policies will be reviewed and revised as necessary to prevent a recurrence, upon determining the cause of the incident.

G-4f Storage and Treatment of Released Waste

The Emergency Coordinator (AEDO) or his designee will immediately collect representative samples of all recovered wastes for analysis and characterization after an emergency. Waste will be placed in a compatible container. All waste materials generated during the emergency

response will be handled, treated, stored, and/or disposed of in accordance with the applicable hazardous waste regulations.

Methods for containment, cleanup, and decontamination of the affected areas are discussed in Sections G-4i, Container Spills and Leakage, and G-4j, Tank Spills and Leakage.

G-4g Incompatible Wastes

Containers and storage bays are marked with Reactivity Group Codes (RGCs) based upon the results of waste characterizations. The RGC chart is readily available in all RCRA storage units, and is provided as Figure F-2 in Section F, Procedures to Prevent Hazards. Adherence to the codes provides a convenient, reliable system to assure that incompatible wastes will be stored in separately bermed areas or in separate buildings, to prevent mixing in the event of a spill or leak. In addition, since water might commonly be used for flushing or fire suppression, waste material that is incompatible with water is clearly marked as such.

Thus, in the event of (large) spills or leaks, the AEDO can ensure against the mixing of incompatible substances by maintaining the integrity of the berms, or by creating temporary dikes to divert flow. As necessary, storage unit inventory records will be examined and facility owners consulted to identify released material. As described in Section G-4b, samples will be taken for analysis and characterization if identification proves impossible due to obliterated drum labels or inaccessible site records.

The recovered materials or wastes generated during cleanup will be characterized and stored in accordance with all applicable regulatory requirements.

G-4h Post-Emergency Equipment Maintenance

Emergency equipment which has been used in the affected area will be decontaminated, cleaned and readied for its intended use before operations are resumed in the affected area(s) of the FEMP. Depleted stocks of materials will be replenished. Self-contained breathing apparatus, protective clothing, and other emergency equipment which cannot be successfully cleaned, repaired, or decontaminated will be replaced as necessary.

An inspection of all safety equipment will be conducted by response personnel before operations are resumed in the affected area(s) of the facility.

The State regulatory authorities shall be notified of the readiness of the facility to resume hazardous waste operations after the equipment is returned to a clean and serviceable condition.

G-4i Container Spills and Leakage

The Emergency Coordinator (AEDO) will be contacted immediately, if inspectors during the scheduled weekly container inspections or other FEMP personnel observe spills and/or leakage. The Emergency Coordinator (AEDO) will then determine which types of industrial absorbents may be used (if necessary) to stop the spread of the leak or spill. Cleanup residues, along with the original drum's contents, will be overpacked and stored in the same area. For cleanup residues where the identity or waste status is in doubt, all absorbents, washings, etc., will be drummed and transferred to an appropriate temporary holding area, pending analysis, relabeling, and re-storing in accordance with hazardous waste regulations.

Very large spills involving the release of hazardous waste are unlikely in the container storage areas. Secondary containment structures in areas storing hazardous waste with free liquids are capable of holding at least 10% of the maximum volume of hazardous waste stored in that structure. If several drums are spilled simultaneously, the spilled material will be pumped from the containment area and re-containerized to prevent overflow of the containment area before attempting to use absorbent materials. Spilled hazardous waste will be treated, stored, and disposed of in accordance with the appropriate regulatory requirements.

G-4j Tank Spills and Leakage

G-4j(1) Stopping Waste Addition

Addition of hazardous waste into a tank system or secondary containment system will

be stopped immediately once a leak or spill is detected in that system. The system will be inspected to determine the cause of release.

G-4j(2) Removing Waste

Hazardous wastes are removed from a tank system by pumping, vacuuming (using a HEPA filter), or absorption using methods and spill response equipment in accordance with documented Emergency Response Team Manual Procedures. The method of removal is determined by the type and amount of hazardous waste spilled, or as directed by the Emergency Coordinator (AEDO). Removal of hazardous waste will be accomplished within 24 hours or as quickly as possible.

G-4j(3) Containment of Visible Releases

Suitable spill cleanup materials are designated for each applicable area. The material used for diking the spill is selected to be compatible with the released hazardous waste. In addition, many large tank systems are located within berms sufficient to contain most of the tanks' contents, and thus allow time for diversion of the spill, or repair and refilling of the tank. Visual examination of the spilled waste will be performed immediately. Based on results of the inspection, the appropriate methods will be selected to prevent further migration of the leak or spill. Visible contamination of soil or surface water will be cleaned up and disposed of in accordance with all applicable regulatory requirements.

G-4j(4) Notifications, Reports

All events are properly documented as directed by the Emergency Coordinator (AEDO), and/or Release Evaluator. Further information is provided in Section G-4a. Any release to the environment (except a leak or spill that is less than or equal to one pound and is immediately contained and cleaned up) will be reported to the Director of the Ohio EPA and the Regional Administrator within 24 hours of detection.

G-4j(5) Provision of Secondary Containment, Repair or Closure

Spilled hazardous wastes are prevented from entering floor drains or storm sewers by damming the spill. Released waste will be removed and repairs made as necessary before returning the system to service. The material used for diking the spill is selected to be compatible with the released material. The compatibility of the patching material with the waste will evaluated before patching dikes or tanks.

Secondary containment will be provided if the area is designated as a storage area for hazardous waste with free liquids. Temporary diked areas constructed of Herculite material spread over plastic pipes can be used to form an impervious diked area when necessary.

If a leak to the secondary containment system is detected, the primary tank system will be repaired before returning the primary system to service. The released waste will be cleaned up and removed.

If the source of the release was a leak to the environment from a component of a tank system without secondary containment, secondary containment will be provided, unless the leak source is from an aboveground component of the tank that can be visually inspected on a daily basis.

An aboveground component leak source, which can be inspected visually, will not be returned to service without certification by a registered professional engineer that the repaired component will safely handle hazardous wastes without release for the intended life of the system.

Components replaced to comply with this subparagraph will satisfy requirements for new tank systems or components specified in 40 CFR 264.192, 264.193, OAC 3745-55-92, and OAC 3745-55-93. In addition, any portion of a component from which a

leak has occurred and is not accessible for visual inspection will be provided with secondary containment for the entire component prior to return to service.

G-4k Surface Impoundment Spills, and Leakage

G-4k(1) Emergency Repairs

Inspections of hazardous waste surface impoundments are conducted monthly ~~weekly~~ and after storms to detect evidence of deterioration, malfunctions, or improper operation of run-on and run-off control systems, adequate free-board, and sudden drops in levels.

Inspection is increased to a daily inspection if evidence of malfunction or deterioration is observed. Inspections, sampling and analysis, and remedial actions will be performed, as necessary, to ensure the safe operation and maintenance of these units that is protective of human health and the environment.

Immediate remedial action is taken where a hazard is recognized as imminent.

G-4k(1)(a) Stopping Waste Addition

In the event of impoundment liner leakage or wall-deterioration, activities which generate wastes to that impoundment will be stopped, or those wastes will be diverted to another holding facility.

G-4k(1)(b) Containing Leaks

Surface run-on and run-off and adequate free-board will be maintained at levels to preclude further deterioration or exposure to the environment. Large leaks, from surface impoundments or from overrunning berms surrounding large tank systems, can be pumped to intact surface impoundments or portable tanks, respectively, or through the stormwater drains directly to the general sump or biosurge lagoon. In extreme cases, including during periods of heavy rainfall, the spill can flow into the stormwater drains and be routed to the dual Storm

Water Retention Basins (capacity of greater than 10 million gallons), where further appropriate action can be taken.

G-4k(1)(c) Stopping Leaks

Appropriate earth-moving equipment and/or construction materials will be used to repair leaks from impoundments; in many cases, the waste within the impoundment will be reduced to a level below the failure point, prior to the repair. All repairs of a permanent nature will be certified by a registered professional engineer as meeting the appropriate design specifications.

G-4k(1)(d) Preventing Catastrophic Failure

The performance of periodic inspections, followed by appropriate maintenance or repair are the control methods used to prevent the possibility of catastrophic failure of the hazardous waste surface impoundments. All repairs of a permanent nature will be certified by a registered professional engineer as meeting the appropriate design specifications.

G-4k(1)(e) Emptying the Impoundment

If situations arise such as a leak, an impending repair, or heavy rains, the contents of the impaired surface impoundment can be pumped through a large diameter hose or pipe to another holding facility; the stormwater retention basin can be emptied via bottom drains.

G-4k(2) Certification

Dike structural integrity will be certified by a registered professional engineer in the event that a hazardous waste surface impoundment has been removed from service due to actual or imminent dike failure.

G-4k(3) Repairs as a Result of Sudden Drop

For a hazardous waste surface impoundment that has been emptied and removed from service, an immediate structural remedial investigation will be implemented to

determine the appropriate remedial actions to repair the unit. All repairs of a permanent nature will be certified by a professional engineer as meeting the appropriate design specifications.

G-4k(3)(a) Existing Portions of Hazardous Waste Surface Impoundments

If a hazardous waste surface impoundment has been emptied and removed from service, response actions will be consistent with the CERCLA Consent Agreement and the Consent Decree and its Stipulated Amendment.

G-4k(3)(b) Liner Repairs to Hazardous Waste Surface Impoundments

For the liner portion of the surface impoundment, the repaired liner system must be certified by a qualified engineer as meeting the appropriate design specifications.

G-5 EMERGENCY SUPPORT AND EQUIPMENT

The Emergency Coordinator (AEDO) when notified of an event involving hazardous waste or hazardous waste constituents, may utilize the emergency resources, support and equipment summarized below. The facilities and equipment available for use in an emergency at the FEMP are the Emergency Operations Center (EOC), a Mobile Operations Center (MOC), the Joint ~~Public~~ Information Center ~~(JPIC)~~ (JIC) in ~~Fairfield~~ Springdale, Ohio, and the Communications Center. Supporting equipment and resources include warning systems (on-site and off-site), response vehicles, personnel decontamination equipment, medical support, radiological monitoring, and industrial hygiene monitoring equipment. The FEMP also maintains mutual aid agreements with local emergency response agencies as described in Section G-6. Copies of Mutual Aid Agreements are maintained as part of the FEMP Operating Records.

Emergency Operations Center (EOC)

The EOC is located in the FEMP Administration Building. EOC staffing and responsibilities are outlined in Section G-1b. Resources available in the EOC include maps, engineering drawings, and other emergency reference materials. The EOC is equipped with an air-purification system, which can sustain air quality and a backup power generator.

A comprehensive communications system in the EOC includes telephones, telefax, computers, portable radios and a control module for the radio equipment in the Communications Center. The EOC can monitor or augment the FEMP emergency communications control system in the Communications Center. Radio and cellular telephone communications can be utilized as backup communications if telephones are not available. A VHF radio is programmed for various DOE and FEMP frequencies, and an HF radio can be utilized for long distance communication. A paging system links response personnel with the Communications Center. All response personnel can be alerted simultaneously or individually, in case of an event.

Computer support systems in the EOC maintain a historical record, perform meteorological and heavy gas modeling, aid in reporting current event status information to local county officials, and aid in drafting and transmitting press releases.

Mobile Operations Center

The Mobile Operations Center is designed and equipped to serve as a mobile command/communications post in the event that mobile communications are required at the site of an emergency or if the EOC is rendered unusable. The Mobile Operations Center can also be used by other organizations, such as Butler and Hamilton County officials or other DOE sites in the event they have a need for a portable command center.

The Mobile Operations Center is outfitted with similar capabilities as the FEMP-fixed EOC located in the Administrative Building.

The Mobile Operations Center is equipped with extensive communications capabilities as follows:

- A telephone key system capable of handling a maximum of twelve incoming/outgoing trunk lines and 24 extension lines. There are also provisions for a maximum of 8 external extensions.

- A VHF radio is programmed for various DOE and FEMP frequencies; an amateur band (144 mHz) radio for use with Civil Defense or for other civil emergency situations; and an HF radio for long distance communications capabilities.

- A CB radio in the cab intended for maintaining communications with any vehicles that may accompany the Mobile Operations Center during transportation.

The Mobile Operations Center, which seats 12 people, is also equipped with office supplies, computers, FAX machine, copier, refrigerator, respirators, maps, event status pads, white boards, markers, erasers, and other items required to support the personnel responding to an emergency situation. The computer hardware has the capability to allow the FEMP to analyze the plume direction of a chemical release and predict the expected exposure. The MOC is designed to be self-contained with an independent diesel generator, heat pump for heating and cooling and an internal lighting system.

~~Joint Public Information Center (JPIC)~~ Joint Information Center (JIC)

The Joint ~~Public~~ Information Center serves as a clearinghouse for information for the FEMP and would become the central contact point for information during an emergency. The Joint ~~Public~~ Information Center disseminates necessary and relevant information to the public via the news media. The Joint ~~Public~~ Information Center has a media briefing ~~room~~ area, a telephone bank for media inquiries, ~~a media monitoring room,~~ a telephone bank for concerned citizens' inquiries, and clerical support areas. Telephone lines link the Joint ~~Public~~ Information Center with Butler County, Hamilton County, and the FEMP EOC.

Communications Center/Security

Security maintains the safeguard and integrity of the FEMP and provides communications, as needed in an emergency. The Communications Center is typically the first to be advised of an emergency via plant alarm or personnel.

The Communications Center includes a full complement of one-way and two-way radio communications facilities, including a mobile and portable FM radio network, scanners, a high-frequency single-sideband

emergency radio, a shortwave receiver, special telephone system, and a paging system. Special monitoring systems include a computerized emergency monitoring system.

On-site Security Inspectors are equipped with emergency vehicles with lights and siren, portable communications equipment, a mobile radio-telephone, and a bullhorn.

Warning Systems

There are on-site, local building, and off-site warning systems at the FEMP.

Facility Alarm System

This system is centered in the Communications Center. Signals from manual fire alarm boxes and automatic fire monitoring and/or extinguishing systems located throughout the plant are transmitted to the Communications Center and monitored by a Honeywell Delta 1000 system. The Communications Operator, using the control panel, activates an alarm via bells and air horns located throughout the facility. ~~This system is used for sounding special two-digit signals to provide warnings and other emergency information. The two-digit warning signals are detailed in Table G-5.~~

Each alarm system is tested by safety and fire personnel according to the following schedule, and the results are recorded.

Manual alarm boxes:	Every six months
Automatic systems:	Every two months
Bells and Horns:	Every week

Emergency Message System

The Emergency Message System is a one-way system used by the Communications Center to transmit verbal instructions and important information to facility personnel following the sounding of a warning signal.

Local Evacuation Alarm

All process areas are linked to a Honeywell Evacuation Alarm (loudspeaker) system. In the event of an emergency in any location, dialing 6511 or calling "CONTROL" by radio will alert Emergency Preparedness via the Control Center. Appropriate evacuation and other messages will be broadcast over the loudspeakers in affected and adjacent locations. The speaker system is tested daily.

Ambulance Alarm

Primary ERT members are notified simultaneously from the Communications Center via special Alert Pagers. ~~A manually-operated alarm, activated from the Communications Center, alerts the garage that a call has been made for the ambulance.~~ The pagers alert garage personnel and assigned ERT members that a call has been made for the ambulance.

Offsite Emergency Warning System

In emergencies with offsite implications the Offsite Emergency Warning System warns citizens within the 2-mile immediate notification zone surrounding the FEMP. Activating the sirens alerts residents to take shelter immediately, tune to a radio or TV station and listen for an Emergency Broadcast System (EBS) message for information.

The warning system consists of eleven electronic sirens (seven offsite and four onsite) and numerous tone-alert radio receivers. The sirens are located within or just outside the 2-mile immediate notification zone. This system is tested on the first Wednesday of each month at noon.

Fire and Rescue

Fire and rescue equipment at the FEMP includes several vehicles with forcible entry tools, communications equipment, electric lights and generators, portable pumps, protective equipment, and heavy equipment.

Fire protection and extinguishing equipment at the FEMP includes building sprinkler systems (both wet-pipe and dry-pipe), fire and smoke alarm systems, hand-held fire extinguishers, and fire hydrants. Detailed information on fire and rescue equipment appears in Section G-5a(4).

Decontamination Equipment

Decontamination equipment is stored in the mobile emergency spill response vehicle and in Building 46. This equipment consists of brushes, soap, diking devices and recovery containers. All of the equipment is designed to be used in conjunction with a portable water supply or water supplied from emergency equipment (pumpers/tankers). The mobile emergency spill response vehicle is described in further detail in Section G-5a(4).

Medical

Medical Services, located in Building 53A, is staffed by physicians, nurses, and technicians. Medical vehicles for emergency use include two fully-equipped ambulance vehicles. There are also various pieces of diagnostic equipment, hospital wards, and other equipment. Detailed information on medical equipment appears in Section G-5e.

Environmental Radiological Monitoring

Environmental radiological monitoring equipment includes dosimeters, stack alarms (laboratory only), friskers, and other radiation survey instruments and monitors. Multimedia baselines are continuously established in all areas using airborne radioactivity air sampling pumps and friskers. Should an incident occur, changing and/or radiologically hazardous conditions can be monitored by direct reading dosimeters, swipes, friskers, and personal contamination monitors. This information can be used to establish boundaries of the contaminated area, and to provide control point monitoring of personnel and equipment involved in the incident.

Industrial Hygiene Equipment

Industrial hygiene equipment includes devices for detecting multimedia hazardous materials and hazardous conditions. Sampling of large or small air spaces for chemical contaminants is accomplished by means such as: photoionization detector, combustible gas analyzer, oxygen meter, hang-on personal dosimeter (for nitrogen dioxide, sulfur dioxide, carbon monoxide, ammonia), direct-reading colorimetric (Draeger) tubes, and mercury vapor monitors. The output from the first two can be analyzed in the field by a portable gas chromatograph or a MIRAN infrared gas analyzer, the latter of which is also a direct-reading analyzer. Non-chemical hygiene hazards can be detected/determined by:

sound level meter, microwave survey meter, low-frequency electromagnetic radiation meter, and a light-scattering (airborne) dust monitor.

Emergency Power System

Dedicated emergency generators supply emergency power for lighting, communications, and for certain designated facilities. The emergency generators are tested at least once each week by the Emergency Coordinator (AEDO) according to established procedures. Records of these tests are maintained at the facility. A portable unit is available when a power failure affects the Communications Center and the emergency generator fails to start.

Additional Emergency Equipment

The following additional emergency equipment is maintained at the FEMP:

- Self-contained breathing apparatus (SCBA) and other respiratory equipment
- Chemically resistant clothing, boots, and gloves;
- Showers and eye wash stations in fixed locations throughout the plant
- Emergency power and lighting equipment, including power-failure lighting
- Submersible electric pumps
- Portable electric generators
- Portable gasoline-powered pumps (to 250 gpm)
- Mobile gasoline-powered pump (trailer-mounted, @ 500 gpm).

A list of FEMP emergency respiratory equipment and their typical applications and limitations is provided in Table G-3. A summary of pressurized fire extinguishers is provided in Table G-4. ~~A summary of FEMP Emergency Alarm Signals is provided in Table G-5.~~

G-5a Fire Protection Equipment

G-5a(1) Plant Water Supplies and Fire Loop Water Supply

The FEMP water systems and related equipment provide the FEMP with the first line of defense in fighting fires and supply the primary means of fire extinguishment.

Water supply storage at the FEMP consists of several ground level and elevated water storage tanks for both fire protection and potable water supply. ~~Potable water supply consists of one ground level storage tank with a capacity of 750,000 gallons and one elevated storage tank with a capacity of 200,000 gallons.~~ Fire protection storage tanks consist of one ground level storage tank with a capacity of 300,000 gallons plus one elevated tank of 350,000 gallons, for a total fire protection storage capacity of 650,000 gallons.

Underground water main systems supply water to hydrants, sprinkler systems, and stand pipes at all major buildings and processing areas of the FEMP. The water main system is a loop therefore no building will have the water supply cut-off under any circumstances. If a leak or plug in a line occurs, the flow to that section of pipe will be cut-off by valves and the water flow to the area rerouted while repair work is in progress.

Low-pressure (60 psi) and high-pressure (120 psi) fire hydrants are located throughout the site; they are listed in Attachment G-2.

G-5a(2) Automatic Sprinklers

Automatic sprinklers are an effective means of fire protection, and will extinguish or contain most fires. Major buildings and processing areas are protected by heat-activated automatic sprinkler systems.

The automatic sprinklers release water when heat at the sprinkler head reaches a predetermined temperature. The Emergency Response Team will immediately proceed to the area where an automatic sprinkler system is activated and take appropriate actions.

The following buildings are fully sprinklered with dry pipe systems:

- ~~KC-2 Warehouse~~
- Building 56 Warehouse
- ~~Building 64 Warehouse~~
- Building 79 Warehouse
- Building 80 Warehouse
- Building 81 Warehouse
- ~~Trane Thermal Liquid Incinerator~~

~~The Pilot Plant is a partially sprinklered building with a wet pipe sprinkler system in the extraction area.~~

G-5a(3) Fire Extinguishers

CLASSES OF FIRE EXTINGUISHERS

Fires are placed in one of four classes according to the type of fuel involved. The class of fire determines the method of extinguishment and, for this reason, all fire extinguishers are marked according to class. The various classes of fires are as follows:

- Class A fires involve ordinary combustibles such as wood or paper. These are most readily extinguished by removing the heat. Water extinguishers are best suited here. All-purpose dry chemical extinguishers may also be used.

- Class B fires involve flammable liquids such as gasoline or alcohol. Since these are liquid fires, the application of water may tend to "float" the fire away. The best method of extinguishment here is to remove the oxygen. Carbon dioxide, foam, or dry chemical extinguishers are best suited for Class B fires.

- Class C fires involve energized electrical equipment. Since some extinguishing agents conduct electricity and the best method of extinguishment is to remove the oxygen, carbon dioxide and dry chemicals are recommended here. An electrical fire, if the electricity can be turned off, is usually Class A and can be easily extinguished.

- Class D fires involve certain combustible metals such as magnesium which require specific extinguishing compounds to put them out.

Table G-4, Types of Pressurized Fire Extinguishers, describes the five types of pressurized fire extinguishers used at the FEMP and lists typical applications and limitations for each type of extinguisher.

G-5a(4) FEMP Emergency Response Equipment

The facility also has emergency response vehicles and equipment in addition to the automatic fire protection already described. The fire trucks and equipment to be used by the Emergency Response Team are properly maintained at all times to ensure readiness in the event of a fire. The fire response vehicles are stocked with standard fire-fighting and fire-related safety equipment, and are equipped with all standard warning devices.

FIRE AND SAFETY VEHICLES

Fire vehicles are equipped with forcible entry tools, communications equipment, electric lights and generators, portable pumps and protective equipment for the fire fighters including breathing apparatus, resuscitators, smoke ~~detectors~~ ejectors, and protective clothing.

FIRE AND SAFETY RESCUE UNIT 301

This unit is a 1993 Ford F-350 service body equipped with a two-way two-channel radio, fire extinguishers, self-contained breathing apparatus, explosimeters, tools,

protective clothing, and medical supplies. This vehicle is in daily use for routine purposes and is driven by emergency response personnel.

FIRE AND SAFETY SERVICE UNIT 300

This unit is a 1990 Ford Ranger equipped with manuals, SCBAs, preplans, ~~explosimeters~~, and a two-way, seven- channel radio.

TANK TRUCK UNIT 322

One Mack 2,600 ~~2,500~~-gallon tanker is available, equipped with a 500-gpm centrifugal pump, two-way ~~six~~ 32 channel radio, protective clothing, tools, fire extinguishers, two SCBAs, and hose.

FIRE TRUCK - ENGINE NUMBER 311

This 1993 Boardman custom fire truck is fully equipped with a 1,250 ~~1,000~~ gpm single-stage centrifugal water pump, 500-gallon booster tank, two-way 32 ~~six~~-channel radio, SCBAs, protective clothing, extension ladders, deluge gun, tools, and hose.

FIRE TRUCK - ENGINE NUMBER 312

This is a 1990 Pierce vehicle equipped with 1,250-gpm single-stage centrifugal pump, 500-gallon booster tank, 50-gallon foam tank, two-way 32 ~~six~~-channel radio, SCBAs, hose, ladders, and tools.

AMBULANCES

Two fully-equipped ambulances meeting federal specifications are operated and maintained onsite.

SPILL RESPONSE VEHICLE - UNIT 328 (1988)

This Chevrolet 30-Series van, ~~parked at the rear of Building 53~~, is stocked with a full array of ERT Spill Response Equipment, an on-board communications system. Other types of emergency response equipment stored in this vehicle include:

Personal Protective Equipment: a full range of shoe covers, gloves (nitrile, neoprene, latex, leather, etc), chemically-resistant suits (Saranex, Tyvek, etc), cover suits, SCBAs, respirators (with all potentially needed cartridges), hard hats, boots, goggles, ear plugs, confined space entry hardware and supplies;

Environmental Monitoring Equipment: Combustible gas monitor, sampling containers, charcoal tubes, pH meter, flashlights;

Spill Control and Clean-up Materials: Absorbent pillows, pigs, and pads; wet vacuum, Spill-X spill guns (solvent, acid, caustic), waste storage drum, traffic cones, soap, small tool kit (hammers, wrenches, pliers, etc);

Communications: Computer and Printer, fax, cellular phone; and, a set of reference books (ACGIH, NIOSH, etc).

Additionally, the Spill Response Vehicle can pull a trailer, which is equipped with renewal supplies and additional equipment, such as: brushes, mops, shovels; spill stoppers, leak plugs, sponges; decon showers and stations; buckets, overpack drums.

MOBILE AIR UNIT

This unit consists of a trailer mounted 9-bottle, high pressure cascade system with air-line capability capable of filling up to 70 low pressure SCBA units or 45 high pressure units.

HEAVY EQUIPMENT

The following equipment, although not designated specifically for emergency use, is available to support emergency response activities if needed:

- 2 flatbed trucks
- 2 dump trucks
- 4 tow tractors

- 6 semi-trailers
- 3 semi-tractors
- 1 tank truck
- 32 industrial trucks
- 45 industrial hand stackers
- 1 locomotive engine
- 2 front end loaders
- 4 bulldozers
- 1 road grader
- 2 cranes
- 1 back hoe
- 1 cement mixer
- 1 portable generator
- numerous tractors, pickup trucks, and small vehicles
- 1 vacuum tanker truck, "Super Sucker"

G-5b Spill Control and Monitoring Equipment

Spill Control and Emergency Spill Response Equipment

Spill response equipment is available for use at the FEMP. Stockpiles of absorbent material (such as clay absorbent and spill booms or absorbent pillows called "PIGS") along with shovels and brooms are located at each storage facility and at certain satellite accumulation points. Runoff can be diverted by temporary diking to prevent entry into the storm sewer. Contents from the storm sewer system can be diverted and held in the Stormwater Retention Basin to control offsite releases.

The FEMP also maintains a mobile emergency spill response vehicle, as described in Section G-5a(4). This vehicle is stocked with appropriate emergency absorbent material and protective equipment.

MONITORING EQUIPMENT

Equipment used to monitor for contamination, explosive atmospheres, and hazardous releases is located on various emergency vehicles and in Building 53. This equipment includes detector tubes, air sampling equipment, explosive gas detectors, chemical analyzers and personal dosimeters.

G-5c Alarm and Electronic Monitoring Systems

Descriptions of alarm systems for HWMUs ~~and the 90 Day Storage Area~~ are included in Attachment G-1. Automatic electronic alarm and monitoring systems consist of the Honeywell D-1000 System and the Meteorological Tower Monitors.

HONEYWELL D-1000 SYSTEM

This centralized, computer-controlled system has two main parts:

(A) Multiplex, Digital Alarm System

(1) Remotely monitors activation of alarm sensors throughout the plant.

(2) Signals are converted by the Delta-1000 microprocessor to plain language messages.

(3) The CRT display includes:

- Alarm type
- Signal number
- Location
- Action to be taken by Communications Center personnel

(4) Alarm sensors monitor the following:

- Fire alarms
- Sprinkler system
- Intrusion alarm

- Smoke alarms
- Radiation detection alarms
- Supervisory alarms, including tampering, equipment malfunction, and pressure varieties
- Process alarms for temperature and gas detection
- Storm sewer pH monitors
- Dust collector monitors

(B) Audible Alarm System

(1) Activated by Communications Center.

(2) Transmits a coded signal throughout the plant complex to activate vibrating and Kodaire type alarm horns.

METEOROLOGICAL TOWER MONITORS

(A) Meteorological information collected includes wind speed and direction.

(B) Information is used to calculate plume direction during a radiological or gaseous hazardous materials emergency.

(C) ~~Monitor readouts are received in digital readout and strip chart analog hard copy in Building 53A.~~ Monitors displaying near real-time conditions are located in Building 14 along with computer plume models.

(D) Communications Center personnel can relay the information to the Emergency Coordinator (AEDO).~~, Emergency Chief (EC) and/or Meteorologist.~~ National Weather Service information is available in case back-up data is needed.

G-5d Communication System

The FEMP utilizes other special radios, receivers and scanners, telephones and telephone services and monitoring equipment, in addition to the Alarm Systems described in the previous section. The following communications and monitoring equipment is located in the FEMP Communication Center and is operated by Security personnel on duty, seven days a week:

TWO-WAY RADIOS

The FEMP utilizes five separate high-band radio frequencies. A separate band can be used to communicate with other DOE facilities.

RADIO RECEIVERS

These include the following:

- Scanner - area police and fire departments, and
- All band short-wave receiver - 0.558 Mhz to 32 Mhz

SPECIAL TELEPHONES AND TELEPHONE SERVICE

These include the following:

- National Warning System (NAWAS) equipped with voice-activated recorder.
- Emergency telephone number 6511 (also 6512, which is an automatic switch over, when 6511 is busy).
- Emergency message system through which the Communications Center furnishes information to onsite personnel relative to emergencies and general information
- Mobile and cellular radio telephones utilized by the Security vehicles.

G-5e First Aid and Medical Supplies

G-5e(1) Emergency Treatment

Personnel are provided first aid treatment in the emergency treatment room in Building 53A of Medical Services. A doctor is normally on duty and nurses are always on duty during the day shift, Monday through Friday. First aid and/or arrangements for transport of ill or injured for treatment is provided at other times, by safety and fire personnel (who are state certified Emergency Medical Technicians). A minimum of two state certified Emergency Medical Technicians are ~~onsite at all times~~ scheduled for each shift. Safety and fire personnel may be summoned by calling the Communications Center in an emergency.

G-5e(2) Ambulance Service - General

Injured or ill employees will be transported by FEMP ambulance or through mutual aid equipment to pre-designated area hospitals.

G-5e(3) Ambulance Service, 2nd and 3rd Shifts, Weekends, Holidays, Vacation Shutdown

Ambulance service is provided during second and third shifts, weekends, and holidays in the same manner as during regular day shift hours.

G-6 COORDINATION AGREEMENTS

The FEMP participates in a mutual aid agreement with other emergency organizations within the FEMP site area and provides assistance to these organizations in the event of a major fire or other serious emergency.

Off-site emergency organizations have signed mutual aid agreements and/or have agreed to provide needed assistance to the FEMP at local, county, state and federal levels. All mutual aid agreements are maintained as part of the FEMP Operating Record. Copies of the current agreements are included as Attachment G-3. A list of participants in mutual aid agreements, prefixed by the acronym "MuAid", is provided in the list of Off-Site Organizations in Table G-1.

Off-site organizations have been provided information of facility layouts, associated hazardous areas, entrances to the facility and primary evacuation routes to facilitate emergency response. Hospitals have been familiarized with the types of injuries and illnesses which may potentially occur at the facility. In addition, off-site responders are provided with annually updated facility layouts, evacuation routes, floor plans, etc., and are invited to participate in ~~annual~~ joint emergency exercises conducted every three years (more often if changing conditions warrant). Emergency Preparedness holds a monthly meeting to ensure an adequate level of integrated planning among the FEMP and the off-site emergency organizations.

The Emergency Coordinator (AEDO) will request the Communications Center Operator to initiate the call-in of additional mutual aid assistance if determines a fire or similar emergency is out of control and additional personnel are required. Equipment dispatched for such requests operate under the immediate supervision of the responder's senior on-scene official, but under the general direction of the requester's senior on-site official.

The Communications Center Operator, in the event of Contingency Plan Implementation and at the request of the Emergency Coordinator (AEDO), shall request additional assistance by calling one or more of the off-site organizations' telephone numbers listed in Table G-1; see Figure G-7 for interrelationships between these organizations.

G-7 EVACUATION PLAN

EVACUATION OF RCRA FACILITIES

Personnel will respond to voice warnings from a supervisor, audible alarms, or (when alone without supervision) to their own cognition of the events without the benefit of signals.

As determined by the AEDO, personnel may have to ~~perform in-place accountability, or in the event evacuation is required, proceed~~ evacuate to their rally point. ~~The accountability procedures are shown in Figure G-8.~~ Personnel will be instructed as to what action to take, if further movement is necessary. A discussion and maps of the evacuation routes and rally points are provided for each HWMU in Attachment G-1.

GENERAL EVACUATION

All major emergencies require prompt and deliberate action. Following an established set of procedures is required, in the event of any major emergency, for the safe evacuation of personnel. In specific emergency situations, however, the Emergency Coordinator (AEDO) may deviate from the procedures to provide a more effective plan for bringing the situation under control. The Emergency Coordinator (AEDO) is responsible for advising Management of the necessity for any evacuation.

The following actions, in the event that a facility evacuation is required, will be taken by those present in the Hazardous Waste Management Unit (HWMU) areas:

(A) The Sitewide Alarm System will be activated at the Communications Center followed by an announcement over the emergency message system.

(B) Employees shall carry out assigned responsibilities during an emergency shutdown. For example, individuals may have assignments to shut off fuel gas, water, steam, electricity and/or perform other special duties.

(C) All employees will report to their predetermined rally point for accountability and further instruction. Should the emergency involve a nuclear criticality, all employees will report instead to the specific locations indicated in the Site Criticality Procedure.

G-8 REPORTS

Certain notifications and reports may be required by the regulatory authorities, in the event of an emergency that requires implementation of the Contingency Plan. Section G-4a describes the oral notifications and written reports required upon the implementation of the Contingency Plan. Any one or more of these reports may be required depending on the nature and extent of the emergency. Current recordkeeping/reporting procedures are maintained in the Operating Record in Building 53a.

G-8a Required Written Reports

GENERAL INCIDENT REPORTING

The FEMP will note in its operating and event reporting records the time, date, and details of any incident that requires implementation of this Contingency Plan.

A written report within 15 days after the occurrence of an incident that requires implementation of the Contingency Plan, notifying Ohio EPA that this Contingency Plan has been implemented (Form B Notification to Ohio EPA of Implementation of Contingency Plan) shall be submitted to the Ohio EPA by DOE as outlined in Section G-4a. Form B is shown in Figure G-10.

RESUMPTION OF OPERATIONS REPORTING

The State regulatory authority shall be notified of the readiness to resume hazardous waste operations by using Form C (Written Notice to Ohio EPA and Appropriate Local Authorities of Resumption of Hazardous Waste Operations). Prior to notification the equipment must be returned to a clean and serviceable condition (as described in Section G-4h). An example of Form C is shown in Figure G-11.

G-9 AMENDING THE CONTINGENCY PLAN

The regulatory compliance group has the responsibility for amending the plan, and distributing amended copies, when any of the following occur:

a) The facility permit is revised; or,

b) The plan fails in an emergency; or,

c) The list of emergency coordinators changes; or,

d) The list of emergency equipment changes; or,

e) Changes in the facility increase the potential for fires, explosions, or releases of hazardous waste, or change the response necessary in an emergency.

Table G-1

Emergency Operation Personnel & Organizations

EMERGENCY COORDINATORS - ASSISTANT EMERGENCY DUTY OFFICERS (Utility Engineers)

NAME	HOME PAGER*	OFFICE	HOME ADDRESS	TELEPHONE
~~Braun, F.~~	~~589-2620~~	~~6295~~	~~8280 Hartman Rd Guilford, IN 47022~~	~~(812) 623-3639~~
~~Cleeter, M.**~~	~~589-2618~~	~~6295~~	~~Box 315 Dillsboro, IN 47018~~	~~(812) 432-5696~~
Duckworth, R.**	~~589-2622~~ 920-7928	~~6295~~ 4749	208 Etta Ave. Harrison, OH 45030	(812) 367-6859
Medl, E.	920-5927	4749	4208 Larchview Dr. Cincinnati, OH 45236	(513) 891-9484
Meeks, J.	~~589-9329~~ 920-7932	~~6295~~ 4749	2034 Morgan-Ross Rd. Hamilton, OH 45013	~~738-4954~~ (513) 738-4876
~~Sparks, T.~~	~~589-5851~~	~~6295~~	~~414 Douglas Ave. Trenton, OH 45067~~	~~988-9470~~
Stacey, E.	920-7929	4749	7643 Bridgetown Rd. Cincinnati, OH 45248	(513) 941-2284

* The most effective means for reaching the on-site Emergency Coordinator (AEDO) is via pager, or Radio # 202. The on duty Emergency Coordinator may also be reached by:

- o radio through the 24-hour-staffed FEMP Communications Center, ~~(513) 738-6295,~~ (513) 648-4444;
- o office, ~~(513) 738-6431,~~ (513) 648-4749;
- o portable cellular telephone, ~~(513) 535-2197,~~ (513) 582-2584; or
- o mobile vehicle cellular telephone, (513) 535-1365

There is an Emergency Coordinator (AEDO) on-site at all times, 24 hours per day, 365 days per year. The home addresses and telephone numbers of all Emergency Coordinators (AEDO)s (and other Emergency Operations personnel as well) are available on-site from the Communications Center or the Emergency Operations Center, if, for some reason, an off-duty Emergency Coordinator (AEDO) would need to be reached.

** ~~M. Cleeter~~ R. Duckworth has been designated the primary emergency coordinator in order to comply with OAC 3745-65-52. The on-site/on-duty Emergency Coordinator (AEDO) at the time of an incident will be the primary Emergency Coordinator (AEDO) for that incident.

Table G-1

OTHER

All Emergencies	~~738-6511~~ 648-6511
FEMP Communications Center	~~738-6295~~ 648-4444
Security Portable	~~535-7134~~ 646-5534 or 532-4092
DOE Site Office	648-3155
Utility Engineer/Emergency Coordinator (AEDO) Vehicle	535-1365
Emergency Coordinator (AEDO) Portable	582-2584
Fire & Safety Vehicle #301	535-1367
Fire & Safety Portable	535-2917 582-2831
Security Vehicle	535-1366
~~Security Portable~~	~~535-7134~~
Industrial Hygiene Vehicle	646-3367
~~Industrial Hygiene Portable~~	~~535-4734~~
~~Industrial Hygiene Portable~~	~~535-4735~~
Environment & Radiological Monitoring Techs Portable	~~646-5540~~ 460-7839
Medical Portable	543-0783
Release Evaluators (Office)	~~738-8462~~ 648-4204
Spradlin, T (Pager)	~~249-5016~~ 920-5046
~~Seifert, Caran (Pager)~~	~~249-5019~~
Ogilvie, Ed (Pager)	920-5055
US EPA Region 5	312-353-2318
USEPA RCRA Hotline	(800) 424-9346 (800) 535-0202

Table G-1

Off-Site Emergency Operation Organizations

OFF-SITE NOTIFICATION

DEPARTMENT OF ENERGY

~~ORO Emergency Communications Center . . . . . (615) 576-1005~~
~~DOE Headquarters, Washington, D.C. . . . . (FAX) (202) 586-0420~~
~~(202) 586-8100~~
~~DOE ORO Environmental Protection Branch . . . . . (615) 576-0846~~
~~DOE ORO Public Information Officer . . . . . (615) 576-0885~~
~~DOE Headquarters (Program Manager) . . . . . (301) 903-8141~~
DOE Headquarters, Washington, D.C. (202) 586-5000
DOE Headquarters Emergency Operations Center (202) 586-8100
DOE Ohio Field Office (513) 865-3020

STATE OF OHIO

Ohio Emergency Management Agency . . . . . (614) 889-7150
Ohio EPA Emergency Response Center . . . . . (800) 282-9378
Ohio EPA Columbus . . . . . (614) 244-094
(614) 644-2100
Ohio EPA Southwest District Office . . . . . (513) 285-6357
or (800) 686-8930
Ohio Department of Health . . . . . ~~(614) 466-2596~~
(614) 466-3543
Ohio State Highway Patrol . . . . . (513) 863-4606
ORSANCO . . . . . (513) 421-1151
Ohio State Fire Marshall . . . . . (800) 686-0736

HAMILTON COUNTY

Communications Center	(513) 825-2280
Local Emergency Planning Committee	(513) 851-7080
Hamilton Cty. Dept. of Environ. Svces., Air Quality Pgms.	(513) 651-9437
Southwest Local School District	(513) 367-4139
Sheriff's Department	~~(513) 825-1500~~ (513) 825-2280

BUTLER COUNTY

Sheriff's Office	~~(513) 844-1515~~ (513) 887-3010
~~Civil Defense~~ Emergency Management Agency	(513) 844-8020

Table G-1

Off-Site Emergency Operation Organizations

LOCAL FIRE DEPARTMENTS

MuAid: Crosby Township ..... 911 or (513) 825-2260

MuAid: Ross Township ..... 911 or ~~(513) 844-1515~~ (513) 887-3010

MuAid: Colerain Township ..... 911 or (513) 825-2260 or 513-825-6143

LOCAL AMBULANCE

Butler County ..... 911 or (513) 844-1515

Hamilton County ..... 911 or (513) 825-2280

MuAid: Crosby Township Life Squad Mobile Telephone ..... 911 or (513) 977-6337

LOCAL HOSPITALS

MuAid: Providence Hospital--Emergency Room ..... (513) 853-5222

MuAid: Mercy Hospital--Emergency Room ..... (513) 867-6450

MuAid: University--Emergency Room ..... (513) 558-4571

Fort Hamilton Hughes--Emergency Room ..... ~~(513) 867-2266~~ (513) 867-2490

EMERGENCY CARE CENTER

Franciscan Ambulatory Care Unit (Harrison) ..... (513) 367-2222

EMERGENCY HELICOPTER SERVICE

MuAid: University Air Care ..... (800) 826-8100

~~Non-Emergency ..... (513) 558-7522~~

Chemical Referral Center, CMA ..... (800) 262-8200

Coast Guard/DOT National Response Center ..... (800) 424-8802

National Weather Service (Cincinnati)	~~(513) 283-3195~~ (513) 383-0228
EPA Chemical Emergency Prep. Hotline	(800) 535-0202
American Red Cross	(513) 579-3000
Chemtrec	(800) 424-9300

Table G-2

The FEMP Emergency Organization Roster

EMERGENCY RESPONSE TEAM

- Assistant Emergency Duty Officer
- Emergency Chief
- Firefighters
- Driver-Operators
- Emergency Medical Technicians
- Radiological Safety Technicians
- Industrial Hygiene Technicians

ADDITIONAL FIELD PERSONNEL

Operations Response

- Plant Supervisors
- Facility Owner
- Operations Personnel

Security Response

- Shift Lieutenant
- Security Inspectors
- Communications Center Officer
- Security Support Group

EMERGENCY OPERATIONS CENTER

- Emergency Duty Officer
- DOE Site Manager
- Emergency Director
- Emergency Management Advisor
- Deputy Emergency Director
- Safety and Health Advisor
- Safety and Health Support
- Meteorologist
- Operations Advisor
- Environmental Advisor
- Public Information Advisor
- Public Information Support
- Security Advisor
- ~~EOC Supervisor~~
- DOE Liaison
- ~~County Notification Advisor (2)~~ Off-site Notification Officer (2)
- ~~County Liaison (2)~~ Off-site Liaison(2)
- ~~EOC Communications Officer~~ (Field Communicator)

The FEMP Emergency Organization Roster (continuedd)

EMERGENCY OPERATIONS CENTER (continued)

Information Plotters
Runners
Historian
Administrative Support

JOINT ~~PUBLIC~~ INFORMATION CENTER TEAM

Joint ~~Public~~ Information Center Manager
DOE PIO
FEMP PIO
FEMP Citizen Hotline Operator
Butler County PIO
Butler County Citizen Hotline Operator
Hamilton County PIO
Hamilton County Citizen Hotline Operator
State PIO
Media Room Duty PIO
Technical Advisor
Administrative Support Supervisor
Media Monitoring Supervisor
Media Query and Citizen Hotline Telephone Banks Supervisor

~~Table G-5~~

~~FEMP Emergency Alarm Signals~~

~~EMERGENCY SIGNALS TRANSMITTED VIA ALARM HORNS & BELLS~~

~~2-2, 2-2 Ambulance, Fire, Security Event~~

~~Radio message to ERT. EMS message follows with general information.~~

~~3-3, 3-3 Supervisory Alert~~

~~Take appropriate action EMS and radio message follow, may include weather information, all-clear, evacuation, test (every Monday at 2 pm), or other announcements.~~

~~4-1, 4-1 CO Alert~~

~~Discontinue use of airline respirators.~~

~~TO REPORT ANY EMERGENCY DIAL EXTENSION 6511~~

FIGURE G-8 HAS BEEN REMOVED

ATTACHMENT G-1

Emergency Procedures, Site Layout and Equipment Information

Attachment G-1 contains the description of evacuation procedures, a listing of safety and emergency equipment and site layouts of the hazardous waste management units (HWMUs). Hazardous Waste Management Units for which information is presented are listed below. The listing is followed by a description of the general procedures to be implemented by FEMP personnel in the event of an explosion, fire or spill. The remainder of Attachment G-1 describes the evacuation routes from individual units to Rally Points, and safety and emergency equipment for each HWMU and the 90 Day ~~Storage Area~~ Hazardous Waste Storage Locker.

90 Day ~~Storage Area~~ Hazardous Waste Storage Locker

The 90 Day ~~Storage Area~~ Hazardous Waste Storage Locker is used to store hazardous wastes in containers 90 days or less. Fire and safety equipment allocated to this area is described in the following pages.

Hazardous Waste Management Units

The following HWMUs are storage units for which a permit is being applied for and that have fire and safety and emergency equipment provided at each unit:

- HWMU No. 19 - CP Storage Warehouse-Building 56 (Butler Building)
- HWMU No. 20 - Plant 1 Pad
- HWMU No. 29 - Plant 8 Warehouse (Building 80)
- ~~HWMU No. 33 - Pilot Plant Warehouse~~
- HWMU No. 34 - KC-2 Warehouse (Building 63)
- HWMU No. 35 - Plant 9 Warehouse (Building 81)
- HWMU No. 37 - Plant 6 Warehouse (Building 79)

The Pilot Plant Warehouse (Building 68) is also included in the permit application for the storage of containers of hazardous waste. This unit is currently not being used for hazardous waste storage so that there is no safety/emergency equipment identified with this unit.

The following HWMUs are units for which a permit is not being sought. They are included here to present a complete picture of all HWMUs, as discussed on page G-3. Existing fire and safety equipment is listed as available but may not be applicable to each HWMU due to the lack of hazardous waste currently in the area:

- HWMU No. 1 - Fire Training Facility
- ~~HWMU No. 2 - Parts Cleaner in Welding Shop (Maintenance Bldg 12)~~(Removed)
- ~~HWMU No. 3 - Waste Oil Storage in Garage~~ (Closed)
- HWMU No. 4 - Drum Storage Area Near Loading Dock (Lab Bldg)
- HWMU No. 5 - Drum Storage Area South of W-26 (Lab Bldg)
- ~~HWMU No. 6 - Drummed HF Residue/Associated Storage Areas Inside Plant 4~~ (Closed)
- ~~HWMU No. 7 - Drummed HF Residue/Associated Storage Areas Northwest of Plant 4~~ (Closed)
- ~~HWMU No. 8 - Drummed HF Residue/Associated Storage Areas S. of Cooling Towers~~ (Closed under "Generator Closure Protocol")
- ~~HWMU No. 9 - Nitric Acid Rail Car and Area~~ (Closed)
- HWMU No. 10 - NAR System Components
- HWMU No. 11 - Tank Farm Sump
- ~~HWMU No. 12 - Wheelabrator (Building 66)~~ (Removed)
- ~~HWMU No. 13 - Wheelabrator Dust Collector (Building 66)~~ (Closed)
- HWMU No. 14 - Box Furnace
- HWMU No. 15 - Oxidation Furnace #1
- ~~HWMU No. 16 - Primary Calciner~~ (Closed)
- HWMU No. 17 - Plant 8 East Drum Storage Pad
- HWMU No. 18 - Plant 8 West Drum Storage Pad
- ~~HWMU No. 21 - Hilco Oil Recovery~~ (Removed)
- HWMU No. 22 - Abandoned Sump West of Pilot Plant
- ~~HWMU No. 23 - Well Drilling Storage Area~~ (Removed)
- ~~HWMU No. 24 - Equipment Storage Area~~ (Removed)
- HWMU No. 25 - Plant 1 Storage Building (Building 67)

- ~~HWMU No. 26 - Detrex Still~~ (Closed)
- HWMU No. 27 - Waste Pit No. 4
- HWMU No. 28 - Trane Thermal Liquid Incinerator
- ~~HWMU No. 30 - Barium Chloride Salt Treatment Facility~~ (Closed)
- ~~HWMU No. 31 - Tank for Bulk Storage Solvents, T-5~~ (Closed)
- ~~HWMU No. 32 - Tank for Bulk Storage Solvents, T-6~~ (Closed)
- HWMU No. 36 - Storage Pad North of Plant 6
- ~~HWMU No. 38 - HF Tank Car~~ (Closed)
- ~~HWMU No. 39 - Clearwell~~ (Removed)
- ~~HWMU No. 40 - Bio-Surge Lagoon~~ (Removed)
- HWMU No. 41 - Sludge Drying Beds
- HWMU No. 42 - Waste Pit No. 5
- ~~HWMU No. 43 - Lime Sludge Ponds~~ (Removed)
- ~~HWMU No. 44 - Coal Pile Runoff Basin~~ (Removed)
- ~~HWMU No. 45 - UST No. 5~~ (Removed)
- HWMU No. 46 - Uranyl Nitrate Tanks (NFS Storage Area)
- HWMU No. 47 - Uranyl Nitrate Tanks (North of Plant 2)
- HWMU No. 48 - Uranyl Nitrate Tanks (Southeast of Plant 2)
- HWMU No. 49 - Uranyl Nitrate Tanks (Digestion Area)
- HWMU No. 50 - Uranyl Nitrate Tanks (Raffinate Building)
- ~~HWMU No. 51 - Experimental Treatment Facility (ETF)~~ (Removed)
- ~~HWMU No. 52 - North and South Solvent Tanks (Pilot Plant)~~ (Closed)
- ~~HWMU No. 53 - Safe Geometry Digestion Sump (Plant 1)~~ (Closed)
- HWMU No. 54 - Thorium Nitrate Storage Tank, T-2

General Information

Hazardous Waste Management Unit (HWMU) and the 90-Day ~~Storage Area~~ Hazardous Waste Storage Locker emergency procedures are described specifically in this section. Responses to an

event are identical for each HWMU and the 90-Day Storage Area and the details are given for the response to the three types of events:

1) an explosion;
2) a fire; or
3) a spill of hazardous waste

A response involves the action that endangered personnel must take when encountering an actual or potential explosion, fire, or spill. Personnel may have the knowledge and judgement to discern the severity of the situation. Personnel lacking knowledge sufficient to discern the severity of the situation should immediately move to a safe location and contact the Emergency Coordinator (AEDO). The categorization level of an EVENT may not reach an EMERGENCY level, and thus will not cause the implementation of this Contingency Plan. The situation may nevertheless warrant a protective and remediation response. For example, an incident that does not involve the Emergency Response Team may be handled by personnel properly trained under the RCRA training curriculum; small spills or fires may be handled by immediate action of the individuals discovering the event. Even events that involve response by the Emergency Response Team, if the Emergency Coordinator (AEDO) so determines, may not require implementation of this Contingency Plan. See Section G-3 and G-4c for guidelines the Emergency Coordinator (AEDO) uses in determining implementation of this Contingency Plan. See Section G-4 of this Contingency Plan for general emergency response procedures.

EVACUATION & SAFETY PLAN FOR FEMP HAZARDOUS WASTE MANAGEMENT UNITS (HWMUs)

1. Purpose and Scope of the Contingency Plan

To protect the lives and property of all personnel inside and in the vicinity of an event at the FEMP, and the prevention of environmental damage.

2. Reason for Activating the Contingency Plan

2.1 Explosion

2.1.1 Any employee who detects an actual or potential explosive situation in the vicinity should immediately alert all nearby workers unless the situation is self evident.

2.1.2 Pull the nearest fire alarm. Report the exact location of the fire to the Communication Center by two-way radio or telephone, if an alarm box is not near.

2.1.3 Leave the area promptly by the least dangerous and most direct or designated route. Continue the escape by evacuating to the designated rally point (Figure G-1) before trying to make a radio report to summon the Emergency Response Team (ERT).

2.1.4 Using nearby emergency equipment may not be possible if it is in what appears to be the danger zone.

2.1.5 Report the nature of the problem and exact location to the Communication Center by two-way radio or telephone and wait for assistance from the ERT.

2.1.6 Supervisor or senior person in charge should take account of all personnel and summon immediate medical attention to seriously injured personnel.

2.1.7 Continue evacuation to the next safe rally point before taking account of all personnel, if it is evident that the explosion poses a threat to the designated Rally Point or if this rally point is downwind in the path of smoke or vapors.

2.1.8 Use any available and appropriate emergency equipment such as eyewash and shower, if exposed to fumes, smoke, or other hazardous physical irritations. Notify your supervisor and report to medical personnel in Building 53A immediately. Anyone who is aware of any exposure to a fellow worker should request immediate medical help for that person.

2.2 FIRE

2.2.1 Any employee who detects an actual or potential fire situation in the vicinity should immediately alert all nearby workers.

2.2.2 Pull the nearest fire alarm. Report the exact location of the fire to the Communication Center by two-way radio or telephone, if an alarm box is not near.

2.2.3 Use available fire fighting equipment to fight the fire until the ERT arrives if there is no immediate danger involved and you have proper training and certification. Provide yourself with protection from fire, fumes, and smoke before using this equipment. Close any equipment (such as ventilation) that does not serve to control the fire in the building.

2.2.4 Immediately use available emergency equipment to provide first aid for burns and other minor injuries.

2.2.5 Supervisor or senior person in charge should take account of all personnel and summon immediate medical attention to seriously injured personnel.

2.2.6 Leave the building quickly and calmly by the least dangerous and most direct or designated route, if there are noticeable vapors, smoke, irritation, or other discernible imminent or immediate danger to your health.

2.2.7 Evacuate to the designated rally point, if there is an immediate danger or evidence that the fire cannot be controlled by local action. Supervisor or senior person in charge should take account of all personnel.

2.2.8 Continue evacuation to the next safe rally point, if this rally point is downwind in the path of smoke or fumes, before taking account of all of the personnel.

2.2.9 Use any available and appropriate emergency equipment such as eyewash and shower, if exposed to vapors, smoke, or other hazardous physical irritations. Notify your supervisor and report to medical personnel in Building 53A as soon as possible. Anyone who is aware of any exposure to a fellow worker should see that medical help is provided to that person.

2.3 HAZARDOUS WASTE SPILL

2.3.1 Any employee who detects an actual or potential hazardous waste spill situation in the vicinity should immediately alert all nearby workers.

2.3.2 Quickly leave the immediate area of the spill in the event of a spill or leak. Alert all other individuals in the area and summon the ERT by pulling the nearest fire alarm. Report the situation and details to the Communication Center by two-way radio or telephone, if an alarm box is not near.

2.3.3 Obtain protection from spills and vapors by using the appropriate, available emergency equipment. If no immediate danger is involved and you have proper hazardous waste training and certification, use available spill control material and equipment to contain the spill until the ERT arrives. Also shut

off any equipment that does not serve to control the spill. Ventilation should be left on unless a fire or electrical sparking poses a fire hazard in the building.

NOTE: **Only trained personnel equipped with proper respiratory and skin/eye protection should attempt to contain extensive spills.**

2.3.4 Immediately use available emergency equipment to provide first aid for bodily contact with leaked materials and minor injuries.

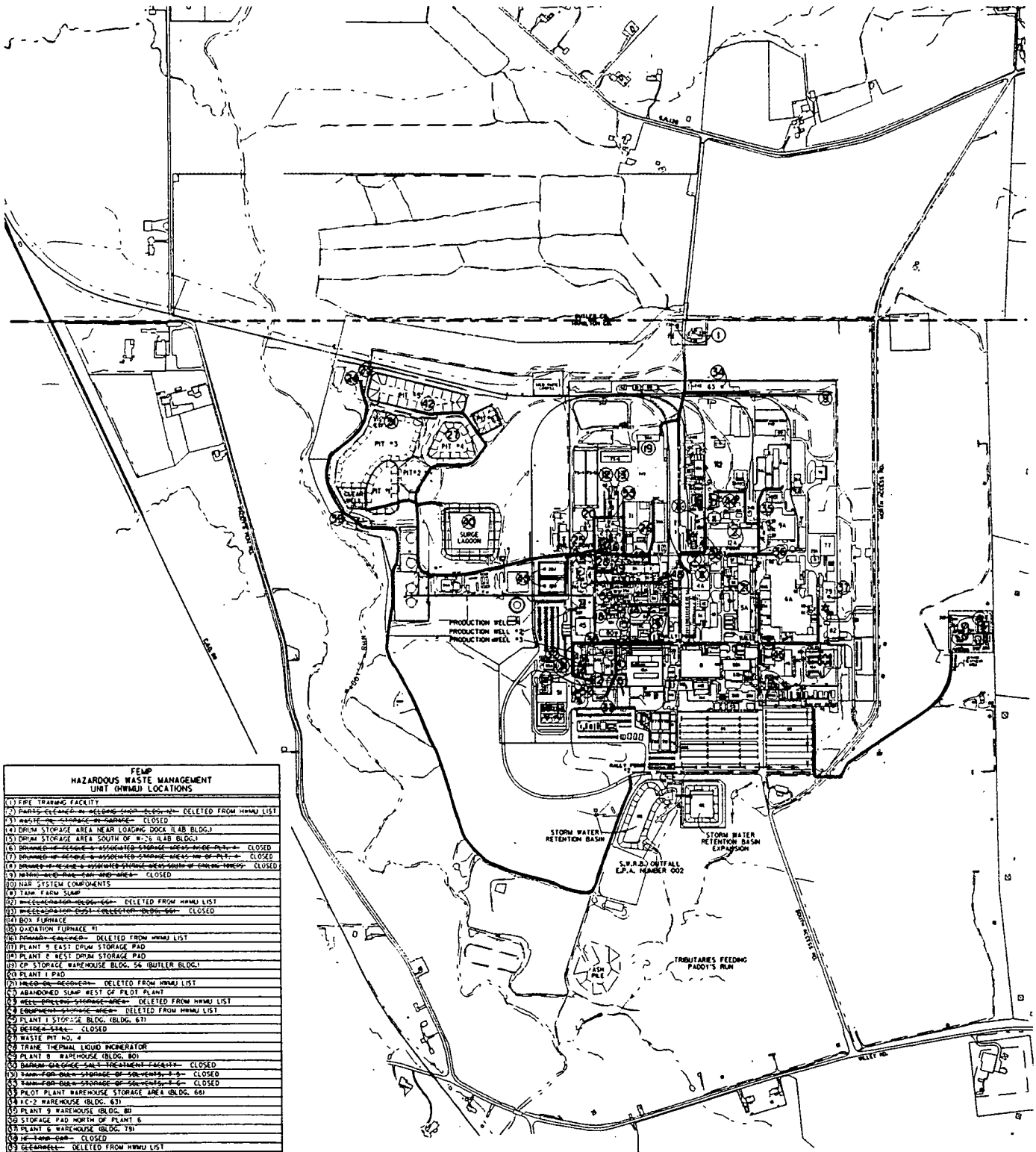
2.3.5 Supervisor or senior person in charge should take account of all personnel and summon immediate medical attention for seriously injured personnel.

2.3.6 Leave the area promptly by the least dangerous and most direct or designated route to the designated rally point, if there is an immediate danger involved or it is evident that the spill cannot be controlled by local action.

2.3.7 Continue evacuation to the next safe rally point before taking account of all personnel, if this rally point is in the path of spillage or downwind in the path of vapors.

2.3.8 Use any available and appropriate emergency equipment such as eyewash and shower, if exposed to contact with waste materials or other hazardous physical irritations. Notify supervisor and report to medical personnel in Building 53A as soon as possible. Anyone who is aware of any exposure to a fellow worker should see to it that medical help is provided to that person.

8018



FEMP
HAZARDOUS WASTE MANAGEMENT
UNIT (HWMU) LOCATIONS

(1) FIRE TRAINING FACILITY
~~(2) PARTS CLEANER W/ SELDANE UNIT BLDG. 41~~ DELETED FROM HWMU LIST
~~(3) WASTE OIL STORAGE IN GARAGE~~ CLOSED
(4) DRUM STORAGE AREA NEAR LOADING DOCK (LAB BLDG.)
(5) DRUM STORAGE AREA SOUTH OF W-26 (LAB BLDG.)
~~(6) DRAINED OIL STORAGE & ASSOCIATED STORAGE AREA NEAR PIT 4~~ CLOSED
~~(7) DRAINED OIL STORAGE & ASSOCIATED STORAGE AREA W. OF PIT 4~~ CLOSED
~~(8) DRAINED OIL STORAGE & ASSOCIATED STORAGE AREA SOUTH OF CHLORINE AREA~~ CLOSED
~~(9) NITRIC ACID PAD EAST AND WEST~~ CLOSED
(10) NAR SYSTEM COMPONENTS
(11) TANK FARM SUMP
~~(12) EVAPORATION POND #1~~ DELETED FROM HWMU LIST
~~(13) EVAPORATION POST COLLECTION POND #1~~ CLOSED
(14) BOX FURNACE
(15) OXIDATION FURNACE #1
~~(16) DRUMS CRUSHED~~ DELETED FROM HWMU LIST
(17) PLANT 9 EAST DRUM STORAGE PAD
(18) PLANT 8 WEST DRUM STORAGE PAD
(19) CP STORAGE WAREHOUSE BLDG. 56 (BUTLER BLDG.)
(20) PLANT 1 PAD
~~(21) USED OIL SCRUBBER~~ DELETED FROM HWMU LIST
(22) ABANDONED SUMP WEST OF PILOT PLANT
~~(23) WELL DRILLING STORAGE AREA~~ DELETED FROM HWMU LIST
~~(24) EQUIPMENT STORAGE AREA~~ DELETED FROM HWMU LIST
(25) PLANT 1 STORAGE BLDG. (BLDG. 67)
~~(26) DEFROST STILL~~ CLOSED
(27) WASTE PIT NO. 4
(28) TRANE THERMAL LIQUID INCINERATOR
(29) PLANT 8 WAREHOUSE (BLDG. 80)
~~(30) BARIUM GARAGE OIL TREATMENT FACILITY~~ CLOSED
~~(31) TANK FOR BULK STORAGE OF SOLVENTS 7 & 8~~ CLOSED
~~(32) TANK FOR BULK STORAGE OF SOLVENTS 7 & 8~~ CLOSED
(33) PILOT PLANT WAREHOUSE STORAGE AREA (BLDG. 66)
(34) KC-2 WAREHOUSE (BLDG. 63)
(35) PLANT 9 WAREHOUSE (BLDG. 80)
(36) STORAGE PAD NORTH OF PLANT 6
(37) PLANT 6 WAREHOUSE (BLDG. 79)
~~(38) HF TANK 008~~ CLOSED
~~(39) CLEARWELL~~ DELETED FROM HWMU LIST
~~(40) BIO SURGE LAGOON~~ DELETED FROM HWMU LIST
(41) SLUDGE DRYING BEDS
(42) WASTE PIT NO. 5
~~(43) LIME SLUDGE POND~~ DELETED FROM HWMU LIST
~~(44) COAL PILE RUNOFF BASIN~~ DELETED FROM HWMU LIST
~~(45) WPC-45~~ DELETED FROM HWMU LIST
(46) URANYL NITRATE TANKS (NE'S STORAGE AREA)
(47) URANYL NITRATE TANKS (NORTH OF PLANT 2)
(48) URANYL NITRATE TANKS (SOUTHEAST OF PLANT 2)
(49) URANYL NITRATE TANKS (DIGESTION AREA)
(50) URANYL NITRATE TANKS (RAFFINATE BLDG.)
~~(51) EXPERIMENTAL TREATMENT FACILITY (TFF)~~ DELETED FROM HWMU LIST
~~(52) NORTH & SOUTH OIL-WATER SEPARATOR TANKS~~ CLOSED
~~(53) SURFACE IMPOUNDMENT (SOUTH)~~ CLOSED
(54) THORIUM NITRATE STORAGE TANK, T-2

000189

NO.	REVISIONS	DATE	DRN. BY	APPD.	REF. DWG. NO.

NOTE: FERNCO C.A.D. DRAWING NOT TO BE REVISED MANUALLY

CONFIGURATION MANAGEMENT RECORD

APPROVALS	
FAC. & STR.	SAFETY ENG.
ELECTRICAL	MAINTENANCE
ENGINEER	P.A.
INSTRUMENT	ENV. PROTECT.
MECHANICAL	WASTE MANAGE.
	SECURITY
CHECKED	OTHER
APPROVED	

FERNALD ENVIRONMENTAL RESTORATION MANAGEMENT CORPORATION
Fernald
Environmental Management Project
U.S. DEPARTMENT OF ENERGY

SITE PLAN

EVACUATION ROUTES
SCALE: 1" = 300'

FILE NAME: /RES3093/EVACNEW.DGN

SAFETY EQUIPMENT

HWMUs are supplied with varying levels and amounts of safety equipment depending upon the use, occupancy, and contents of the unit. The remainder of Attachment G-1 lists the locations of safety and emergency equipment designated for each HWMU. Only personnel with the appropriate training and experience shall utilize the specified safety equipment: fire extinguishers, respirators and protective clothing, and spill clean-up equipment.

90 DAY ~~STORAGE AREA~~ HAZARDOUS WASTE STORAGE LOCKER

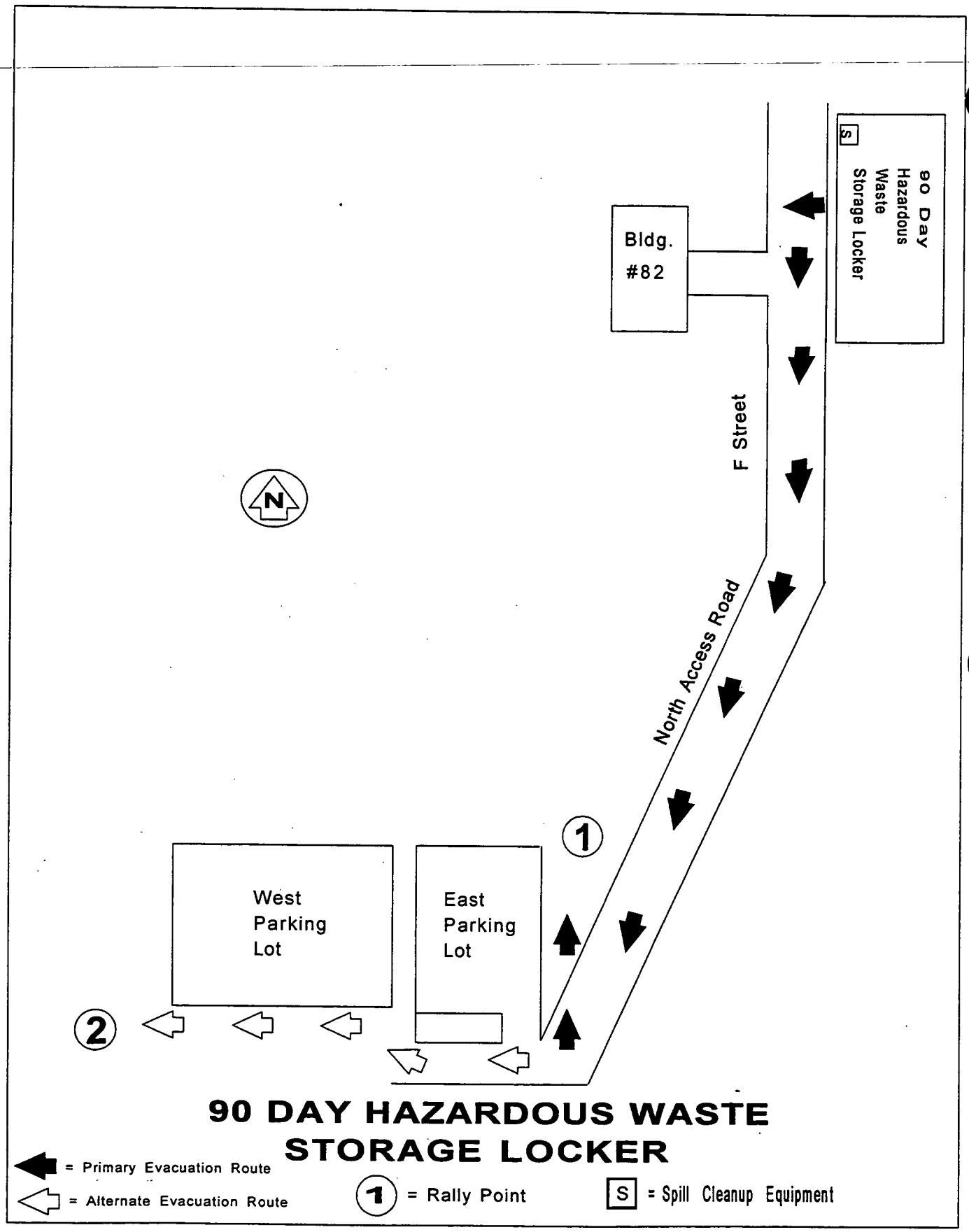
~~The 90 Day Storage Area is a temporary container storage area. This area has been moved to Bay 3 of the KC-2 Warehouse (Building 63). Refer to HWMU No. 34 -KC-2 Warehouse for additional information.~~

The 90 Day Hazardous Waste Storage Locker is a temporary container storage area located east of the Receiving and Incoming Materials Inspection Area (RIMIA). The locker is used to store hazardous waste that is non-radiologically contaminated for less than ninety days prior to shipment off-site for recycle or disposal.

Personnel should evacuate to Rally Point No. 1. Rally Point No. 1 is located at the Northeast corner of the FEMP East Parking Lot. Movement to Rally Point No. 1 is south on F street to the North Access Road and through the East Parking Lot to the rally point. ~~**northeast through the FEMP West and East Parking Lots to the rally point.**~~

The Alternate Rally Point is No. 2. Rally Point No. 2 is located at the West side of the FEMP West Parking Lot, just north of the Stormwater Retention Basin. Movement to Rally Point No. 2 is south on F street to the North Access Road and west through the FEMP East and West Parking Lots to the rally point.

- Spill Cleanup Equipment
  1) Located inside 90 Day Hazardous Waste Storage Locker



90 DAY HAZARDOUS WASTE STORAGE LOCKER

= Primary Evacuation Route

= Alternate Evacuation Route

1 = Rally Point

S = Spill Cleanup Equipment

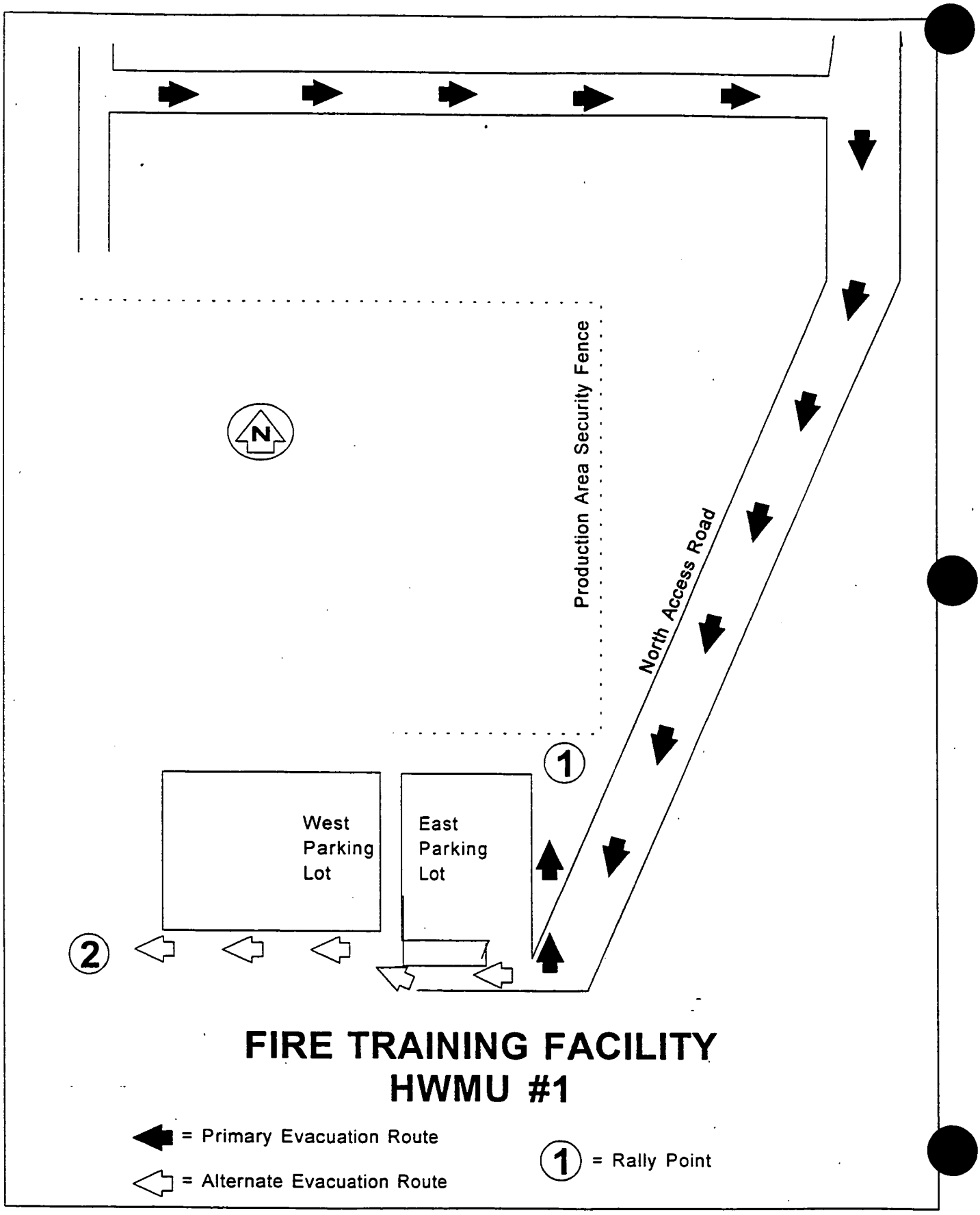
HWMU No. 1 - FIRE TRAINING FACILITY

This facility is located due north of the KC-2 Warehouse outside the perimeter fence.

Personnel should evacuate to Rally Point No. 1. Rally Point No. 1 is located at the Northeast corner of the FEMP East Parking Lot. Movement is east on the unnamed gravel road to south on the North Access Road to the FEMP East Parking Lot, then north to Rally Point #1 at the Northeast corner of the Parking Lot.

The Alternate Rally Point is No. 2. Rally Point No. 2 is located at the West side of the FEMP West Parking Lot, just north of the Stormwater Retention Basin. Movement to Rally Point No. 2 is west through the parking lot to the rally point.

There is no safety equipment assigned to this unit. Those personnel desiring access to this HWMU are required to have a two-way radio for emergency notification purposes.



FIRE TRAINING FACILITY
HWMU #1

= Primary Evacuation Route

= Alternate Evacuation Route

1 = Rally Point

HWMU No. 2 - PARTS CLEANER IN WELDING SHOP (MAINTENANCE BLDG 12)

This unit consists of a chemical cleaner and vent hood and was used to clean tools and other items with 1,1,1-trichloroethane. This has been removed from the HWMU list.

HWMU No. 3 - WASTE OIL STORAGE IN GARAGE

This area was located on the West wall of Building 31 (garage). The containers stored oil mixed with hazardous waste. This unit has been closed in accordance with OEPA letter dated June 6, 1996.

~~Personnel should evacuate to Rally Point No. 5. Rally Point No. 5 is located at the intersection of 1st Street and "D" Streets. Movement is north on "D" Street to the intersection of "D" Street and 1st Street.~~

~~The Alternate Rally Point is No. 4. Rally Point No. 4 is located on "D" Street East of the Security Building (Building 28A). Movement is directly south on "D" Street.~~

~~The following is a list of safety equipment assigned to this unit:~~

- ~~Manual Fire Alarm~~
  - ~~1) Located on East wall by Men's Restroom~~

- ~~Fire Extinguishers~~
  - ~~1) 15# CO_2 North end by office on East wall~~
  - ~~2) 10# ABC North end by office on East wall~~
  - ~~3) 10# ABC South end by overhead door~~

- ~~Eye Wash/Safety Shower Station~~
  - ~~1) Located on East wall of garage across from HWMU (Portable Unit)~~

- ~~Spill Cleanup Equipment~~
  - ~~1) Outside by South truck door~~

- ~~Respirator Cabinet~~
  - ~~1) Located outside Supervisor's Office on East wall~~

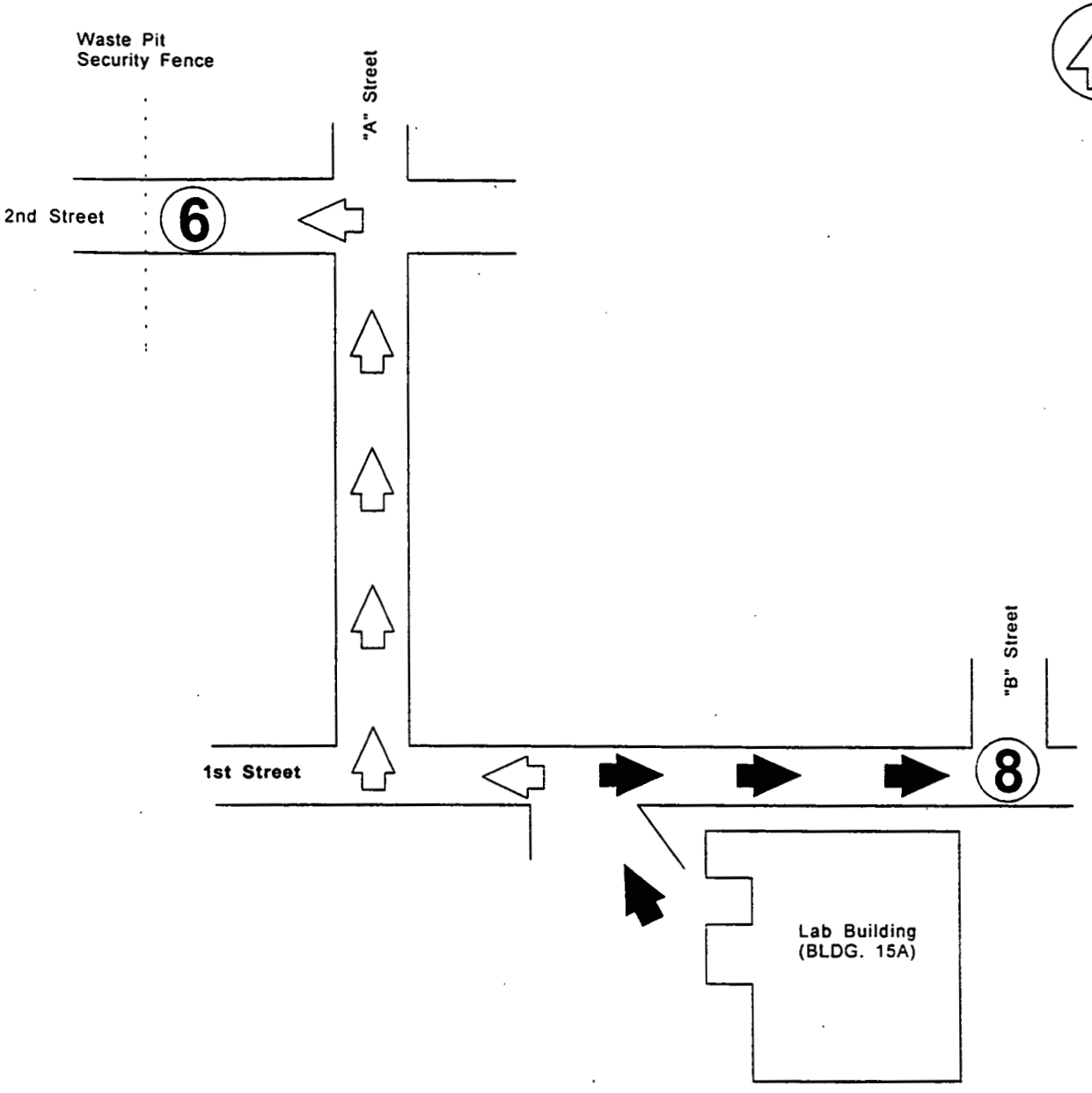
HWMU No. 4 - DRUM STORAGE AREA NEAR LOADING DOCK (LAB BLDG.)

This was a container storage and waste transfer area which operated from 1952 to 1983. The area is presently covered with concrete due to loading expansion.

Personnel should evacuate to Rally Point No. 8. Rally Point No. 8 is located at the intersection of 1st and "B" Street. Movement is north to 1st Street, then east to "B" Street.

The Alternate Rally Point is No. 6. Rally Point No. 6 is located north of the West Water Tower, at the Waste Pit Area access gate. Movement to Rally Point No. 6 is north to 1st Street, west to "A" Street, then north to 2nd Street and west to the rally point.

There is no safety equipment assigned to this unit. Those personnel desiring access to this unit are required to have a two-way radio for emergency notification purposes.



DRUM STORAGE AREA NEAR LOADING DOCK (LAB BLDG.) HWMU #4

= Primary Evacuation Route = Alternate Evacuation Route 8 = Rally Point

HWMU No. 5 - DRUM STORAGE AREA SOUTH OF ROOM W-26 (LAB BLDG.)

This area was located in an unpaved area near Building 15 and operated from 1983 to 1989.

Personnel should evacuate to Rally Point No. 8. Rally Point No. 8 is located at the intersection of 1st and "B" Street. Movement is north to 1st Street, then east to "B" Street.

The Alternate Rally Point is No. 6. Rally Point No. 6 is located north of the West Water Tower, at the Waste Pit Area access gate. Movement to Rally Point No. 6 is north to 1st Street, west to "A" Street, then north to 2nd Street and west to the rally point.

There is no safety equipment assigned to this unit. Those personnel desiring access to this unit are required to have a two-way radio for emergency notification purposes.

~~The following is a list of safety equipment assigned to this unit.~~

~~• Manual Fire Alarm~~
~~1) Located in South corridor by S-42~~

~~• Fire Extinguishers - West Corridor~~
~~1) 5# CO_2 Southwest corner of W-26~~
~~2) 5# CO_2 Southwest corner of W-26~~
~~3) 5# CO_2 First Floor at West end of Room W-18~~

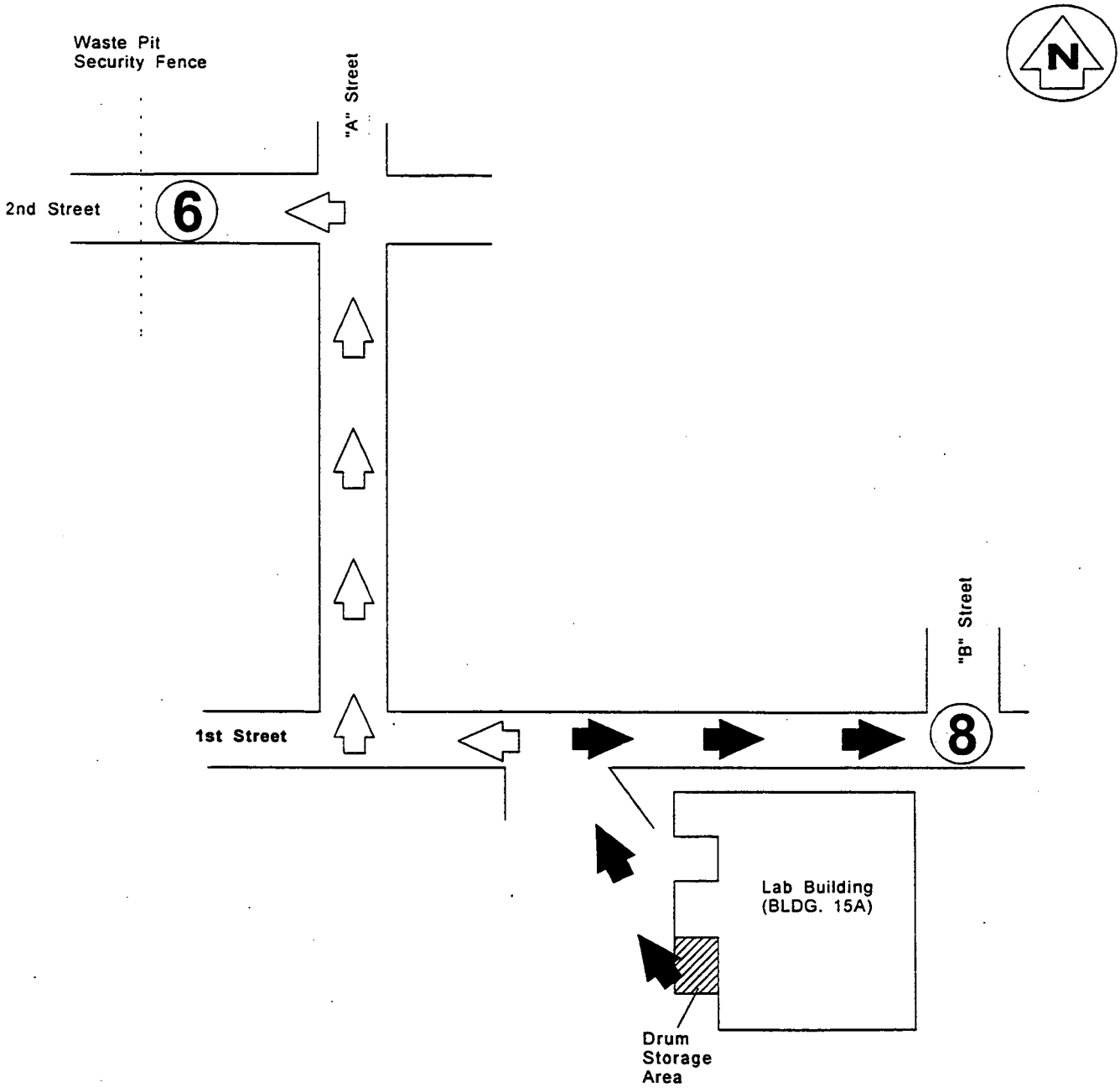
~~• Eye Wash Station~~
~~1) In hallway by W-24~~

~~• Safety Shower~~
~~1) Located in doorway to Room W-22A~~

~~HWMU No. 5 - DRUM STORAGE AREA SOUTH OF ROOM W-26 (LAB BLDG.)~~

- ~~Spill Cleanup Equipment~~
  1) ~~Located in Room W-22A~~

- ~~Respirator Cabinet~~
  1) ~~East wall Room W-28 by doorway to W-24~~



DRUM STORAGE AREA SOUTH OF ROOM W-26 (LAB BLDG.) HWMU #5

= Primary Evacuation Route

= Alternate Evacuation Route

8 = Rally Point

HWMU No. 6 - DRUMMED HF RESIDUE/ASSOCIATED STORAGE AREAS INSIDE PLANT 4

This unit ~~is~~ was located in the North section of Plant 4 near the elevator. Closed in accordance with OEPA letter of April 28, 1995.

HWMU No. 7 - DRUMMED HF RESIDUE/ASSOCIATED STORAGE AREAS NORTHWEST OF PLANT 4

This container storage area was located on a graveled lot Northwest of Plant 4 and was operated from January 1990 to August 1990. This unit has been closed in accordance with OEPA letter dated June 13, 1996.

~~Personnel should evacuate to Rally Point No. 3. Rally Point No. 3 is located at the intersection of 2nd Street and "C" Street. Movement is west to "B" Street, north on "B" Street, and east on 2nd Street to the intersection of "C" Street.~~

~~The Alternate Rally Point is No. 8. Rally Point No. 8 is located at the corner of 1st Street and "B" Street. Movement to Rally Point No. 8 is south on "B" Street to the corner of 1st Street.~~

~~There is no safety equipment assigned to this unit. Those personnel desiring access to this unit are required to have a two-way radio for emergency notification purposes.~~

HWMU No. 8 - DRUMMED HF RESIDUE/ASSOCIATED STORAGE AREAS S. OF COOLING TOWERS

This unit ~~is~~ was located in a graveled area South of the Cooling Towers. This unit has been closed under the "generator closure" protocol as discussed in the OEPA correspondence to ~~DOE-FN~~ DOE-FEMP dated April 13, 1995.

HWMU No. 9 - NITRIC ACID RAIL CAR AND AREA

The Nitric Acid Rail Car Area is located near the end of track #2, due East of Building 63 (KC-2 Warehouse). The tank car contained 50 to 100 gallons of waste nitric acid. The acid has been removed and treated and the tank car has been cut into small pieces for scrap. Closed in accordance with OEPA letter of April 25, 1995.

HWMU No. 10 - NAR SYSTEM COMPONENTS

This unit is located in the NAR Tank Farm and in the Denitrification Area which converted uranyl nitrate to uranium oxide. The tanks are empty but residues remain in the pots and ancillary equipment.

Personnel should evacuate to Rally Point No. 6. Rally Point No. 6 is located North of the Water Tower. Movement can be north out of Building 2A to 2nd Street then west to the Waste Pit Area access gate. Movement can also be south out of the building to 102nd Street, west to "A" Street, north on "A" Street to 2nd Street then west to the Waste Pit Area access gate.

The Alternate Rally Point is No. 8. Rally Point No. 8 is located at the intersection of 1st Street and "B" Street. Movement is east to "B" Street, and south on "B" Street to the intersection of 1st Street.

The following is a list of safety equipment assigned to this unit:

- Manual Fire Alarms
  1) West side of North personnel door in the Denitrification Area
  2) West wall of Extraction Area by Column B-8

- Fire Extinguishers
  1) 10# ABC First floor Denitrification Area by Column B-14
  2) 10# ABC First floor Denitrification Area by Column D-16
  ~~3) 10# ABC Inside door of Supervisor's Office~~
  4) ABC First floor Denitrification Area by Column A-17
  5) ABC First floor Denitrification Area by Column C-20
  ~~6) ABC Second floor Denitrification Area by Column A-17~~
  ~~7) ABC Second floor, lower level, by Column A-20~~
  ~~8) ABC Second floor, lower level, by Column C-15~~
  ~~9) BC Third floor by Column C-20~~

HWMU No. 10 - NAR SYSTEM COMPONENTS

- ~~Eye Wash/Safety Shower Stations~~

~~1) Secondary containment area (Tanks F1-23 and F1-24) located outside and south of Plant 2/3~~

- Portable Eyewash/Safety Showers

Portable eyewash/safety showers are to be placed in areas where hazardous work is occurring. ~~Areas of concerns within HWMU 10 include the denitrification area, and the secondary containment area located outside and south of Plant 2/3.~~

- ~~Mounted Heated Eyewashes~~

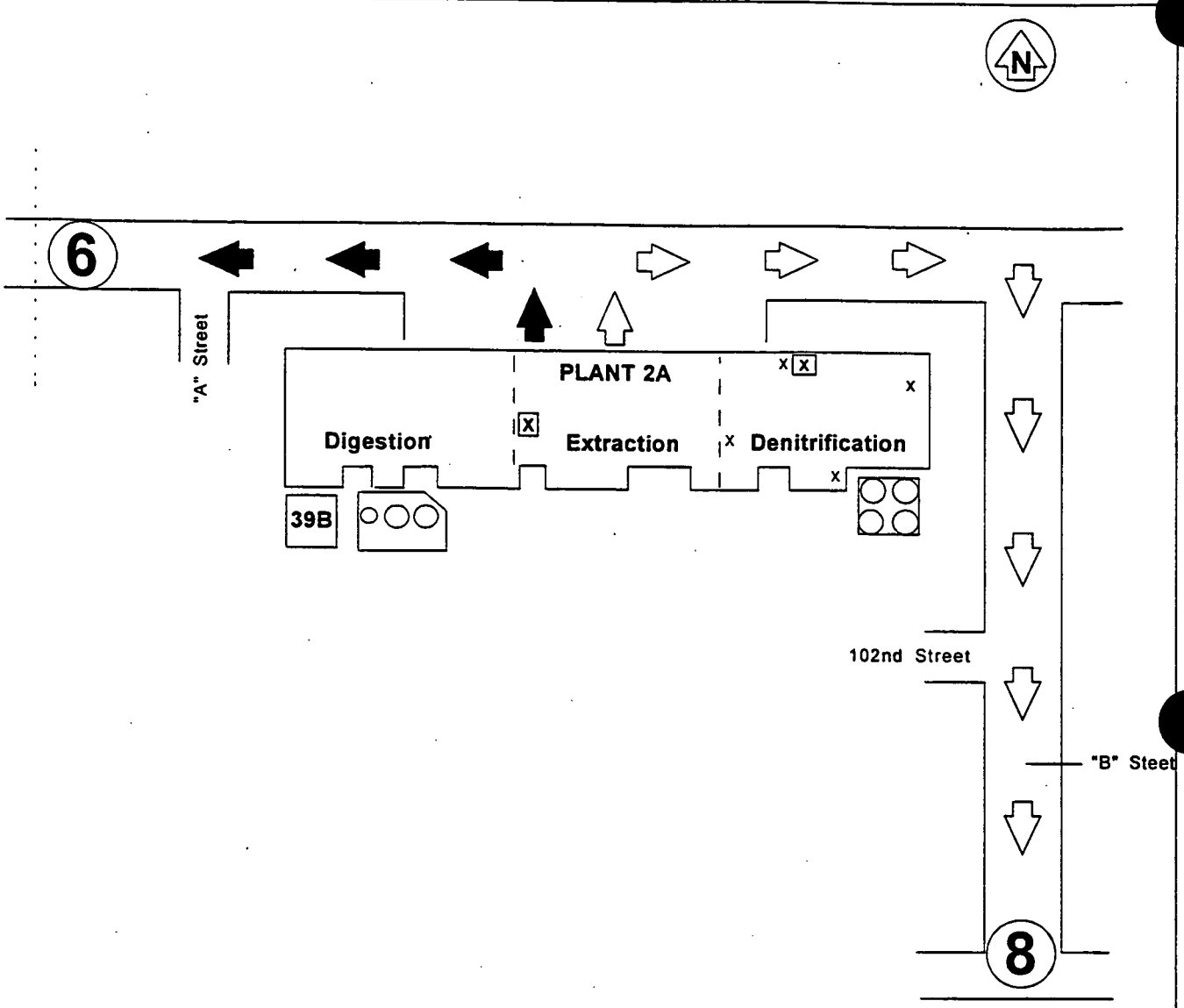
~~1) First floor, Denitrification area, by Column C-16~~

- ~~Spill Cleanup Equipment~~

~~1) First Floor Denitrification Area East of Column B-17~~

~~2) First Floor Denitrification Area East of Column C-19~~

Those personnel desiring access to this unit are required to have a two-way radio for emergency notification.



NAR SYSTEM COMPONENTS
HWMU #10

[X] = manual fire alarm

X = fire extinguisher

6 = rally point

= primary evacuation route

= alternate evacuation route

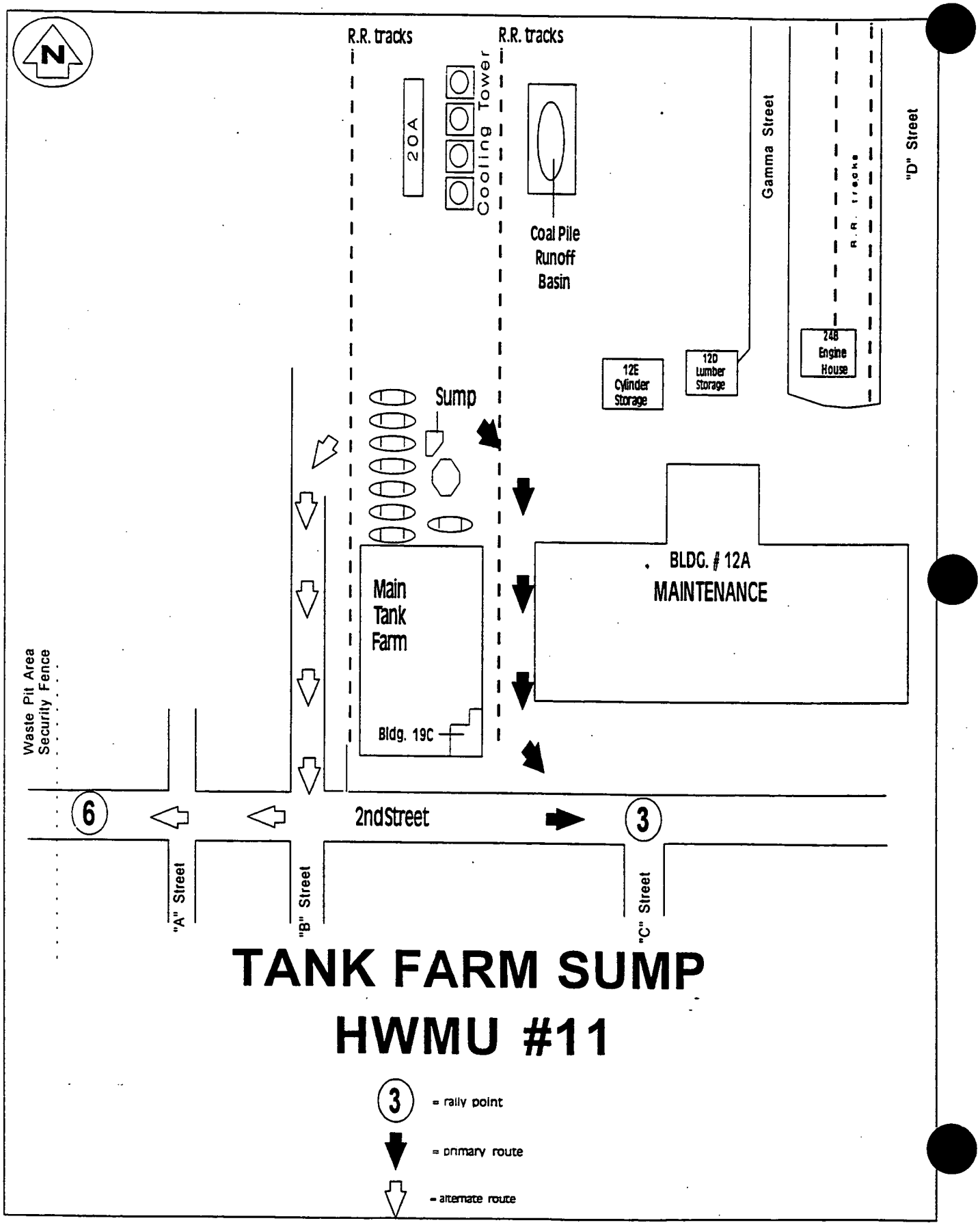
HWMU No. 11 - TANK FARM SUMP

The Tank Farm Sump is a surface impoundment located South of the Cooling Towers.

Personnel should evacuate to Rally Point No. 3. Rally Point No. 3 is located at the intersection of 2nd Street and "C" Street. Movement is south to 2nd Street and east on 2nd Street to the intersection of "C" Street.

The Alternate Rally Point is No. 6. Rally Point No. 6 is located north of the West Water Tower, at the Waste Pit Area access gate. Movement to Rally Point No. 6 is south on "B" Street, then west on 2nd Street to the Waste Pit Area access gate.

There is no safety equipment assigned to this HWMU. Those personnel desiring access to this unit are required to have a two-way radio for emergency notification purposes.


N
R.R. tracks
R.R. tracks
20A
Cooling Tower
Coal Pile Runoff Basin
Gamma Street
"D" Street
R.R. tracks
24B Engine House
12E Cylinder Storage
12D Lumber Storage
Sump
Main Tank Farm
Bldg. 19C
BLDG. # 12A
MAINTENANCE
Waste Pit Area Securily Fence
6
2nd Street
3
"A" Street
"B" Street
"C" Street
TANK FARM SUMP
HWMU #11
3 = rally point
= primary route
= alternate route

HWMU No. 12 - WHEELABRATOR (BUILDING 66)

The Wheelabrator was used in the second stage of drum reconditioning to remove paint from old empty drums by an abrasive blasting method using steel shot. This has been removed from the HWMU list.

HWMU No. 13 - WHEELABRATOR DUST COLLECTOR (BUILDING 66)

The Wheelabrator Dust Collector is a component of the drum reconditioning system in Building 66. This unit has been closed in accordance with OEPA letter dated April 5, 1996.

~~Personnel should evacuate to Rally Point No. 6. Rally Point No. 6 is located North of the West Water Tower at the Waste Pit Area access gate. Movement is south on "A" Street to the intersection of 2nd Street, then west on 2nd Street to the Waste Pit Area access gate.~~

~~The Alternate Rally Point is No. 3. Rally Point No. 3 is located at the intersection of 2nd Street and "C" Street. Movement is south past the east side of Building 1A to 2nd Street, and east on 2nd to the Point.~~

~~The following is a list of safety equipment assigned to this unit:~~

- ~~Manual Fire Alarm~~
  - ~~1) Outside on East end of North wall of Building 66~~
  - ~~2) Outside Northeast corner of Building 66~~

- ~~Fire Extinguishers~~
  - ~~1) 20# ABC on East side of Drum Dryer~~
  - ~~2) 15# CO_2 Outside on South end of Building 66 by Wheelabrator~~

- ~~Eye Wash/Safety Shower Station~~
  - ~~1) Inside Building 66 on East side of Drum Dryer~~

- ~~Spill Cleanup Equipment~~
  - ~~1) Behind the fence Northeast of the Building 66~~

- ~~Respirator Cabinets~~
  - ~~1) Inside Building 1A, in Primary Satellite Clothing Area~~
  - ~~2) Inside Building 71, in the Northeast corner~~

HWMU No. 14 - BOX FURNACE

The Box Furnace is located on the North side of Plant 8. The furnace is lined with refractory brick and contains solid residues.

Personnel should evacuate to Rally Point No. 8. Rally Point No. 8 is located at the intersection of 1st Street and "B" Street. Movement is east to "B" Street and south on "B" Street to the intersection of 1st Street.

The Alternate Rally Point is No. 6. Rally Point No. 6 is located north of the West Water Tower, at the Waste Pit Area access gate. Movement is west on 101st Street to north on "A" Street, then west on 2nd Street to the rally point.

The following is a list of safety equipment assigned to this unit:

- Manual Fire Alarm
  1) Inside Building 3A at Southeast entrance door
  2) Inside Building 8A at Column C-10 by overhead door

- Fire Extinguishers
  1) 10# ABC First Floor Building 8A Column C-10 by overhead door
  2) 10# ABC Box Furnace Pad outside North door

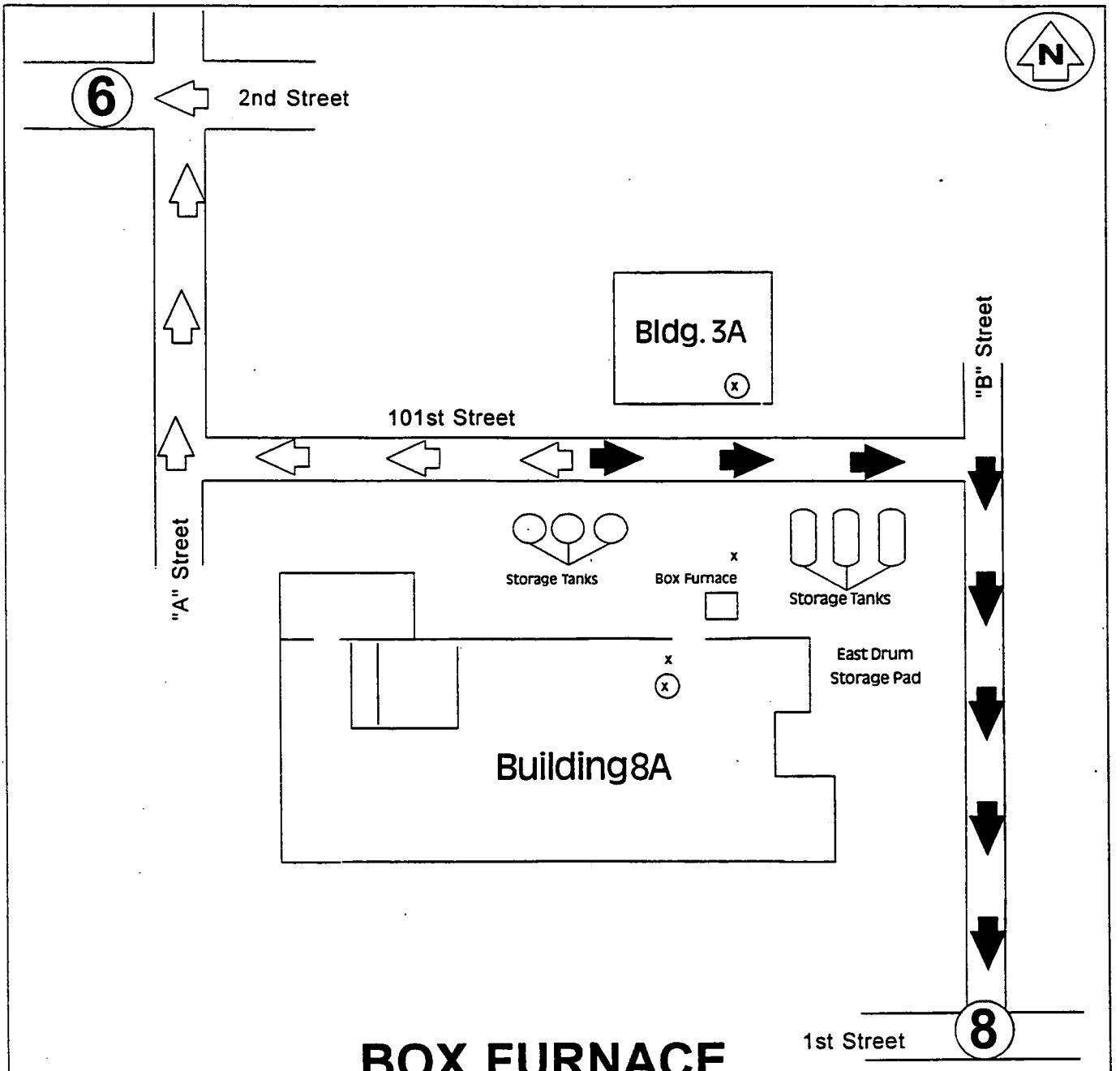
~~• Eye Wash/Safety Shower Station~~
~~1) East of NaOH Storage Tank Northeast of Building 8A~~

~~• Spill Cleanup Equipment~~
~~1) Located North of Building 8A, East of Tank 28A~~

~~HWMU No. 14 - BOX FURNACE~~

- ~~Respirator Cabinet~~

~~1) 1st Floor Northwest in Building 8A near Office~~



BOX FURNACE
HWMU #14

X = Fire Extinguisher

(X) = Manual Fire Alarm

= Primary Evacuation Route

= Alternate Evacuation Route

8 = Rally Point

HWMU No. 15 - OXIDATION FURNACE # 1

This furnace is located in Plant 8 and functioned as a combined reprocessing, recovery and pre-treatment unit. The furnace contains solid residues.

Personnel should evacuate to Rally Point No. 8. Rally Point No. 8 is located at the intersection of 1st Street and "B" Street. Movement is east on 101st Street to "B" Street and south on "B" Street to the intersection of 1st Street.

The Alternate Rally Point is No. 6. Rally Point No. 6 is located north of the West Water Tower, at the Waste Pit access gate. Movement is west on 101st Street to north on "A" Street, then west on 2nd Street to the rally point.

The following is a list of safety equipment assigned to this unit:

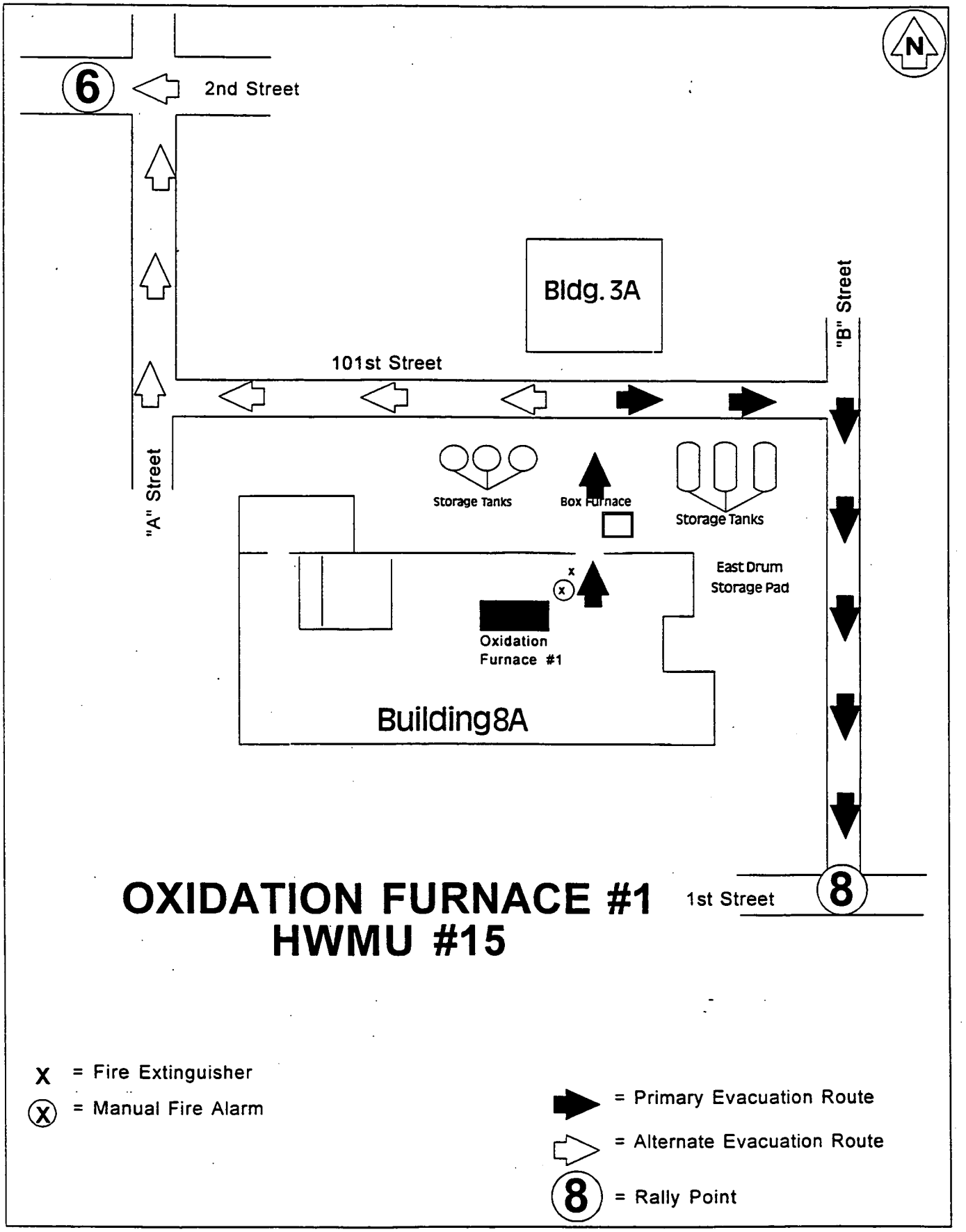
- Manual Fire Alarm
  1) Inside Building 8A by Column C-10 by overhead door

- Fire Extinguishers
  1) 10# ABC First Floor Building 8A Column C-10 by overhead door
  ~~2) 10# ABC First Floor at East elevator~~

~~- Eye Wash/Safety Shower Station~~
~~1) East of NaOH Storage Tank northeast of Building 8A~~

~~- Spill Cleanup Equipment~~
~~1) Located North of Building 8A, East of Tank 28A~~

~~- Respirator Cabinet~~
~~1) 1st Floor Northwest in Building 8A near Office~~



OXIDATION FURNACE #1
HWMU #15

X = Fire Extinguisher

(X) = Manual Fire Alarm

= Primary Evacuation Route

= Alternate Evacuation Route

8 = Rally Point

HWMU No. 16 - PRIMARY CALCINER

This unit is located in Plant 8 and consists of a steel shell 13 ft 6 inches in diameter with eight refractory brick lined hearths and three burners. This unit has been removed from the HWMU list.

~~Personnel should evacuate to Rally Point No. 8. Rally Point No. 8 is located at the intersection of 1st Street and "B" Street. Movement is east on 101st Street to "B" Street and south on "B" Street to the intersection of 1st Street.~~

~~The Alternate Rally Point is No. 6. Rally Point No. 6 is located north of the West Water Tower, at the Waste Pit access gate. Movement is west on 101st Street to north on "A" Street, then west on 2nd Street to the rally point.~~

~~The following is a list of safety equipment assigned to this unit:~~

~~• Manual Fire Alarm~~
~~1) Inside East end of Building 8A by elevator~~

~~• Fire Extinguishers~~
~~1) 10# ABC First Floor Building 8A Column C-10 by overhead door~~
~~2) 10# ABC First Floor at East elevator~~

~~• Eye Wash/Safety Shower Station~~
~~1) East of NaOH Storage Tank northeast of Building 8A~~

~~• Spill Cleanup Equipment~~
~~1) Located North of Building 8A, East of Tank 28A~~

~~• Respirator Cabinet~~
~~1) 1st Floor Northwest in Building 8A near office~~

HWMU No. 17 - PLANT 8 EAST DRUM STORAGE PAD

This unit is a container storage area located East of Plant 8. The pad is no longer used for the storage of containers of hazardous waste but may be used for the storage of containers of low-level radioactive waste.

Personnel should evacuate to Rally Point No. 8. Rally Point No. 8 is located at the intersection of 1st Street and "B" Street. Movement is east to "B" Street and south on "B" Street to the intersection of 1st Street.

The Alternate Rally Point is No. 6. Rally Point No. 6 is located north of the West Water Tower, at the Waste Pit access gate. Movement is north on "B" Street to west on 101st Street, then north on "A" Street to 2nd Street and west to the rally point.

Those personnel desiring access to this HWMU are required to have a two-way radio for emergency notification purposes.

The following is a list of safety equipment assigned to this unit:

- Manual Fire Alarm
  ~~1) Inside east end of Building 8A by elevator~~
  1) Inside Building 3A at Southeast entrance door
  2) Building 8A, First Floor, Column C-10 by overhead door

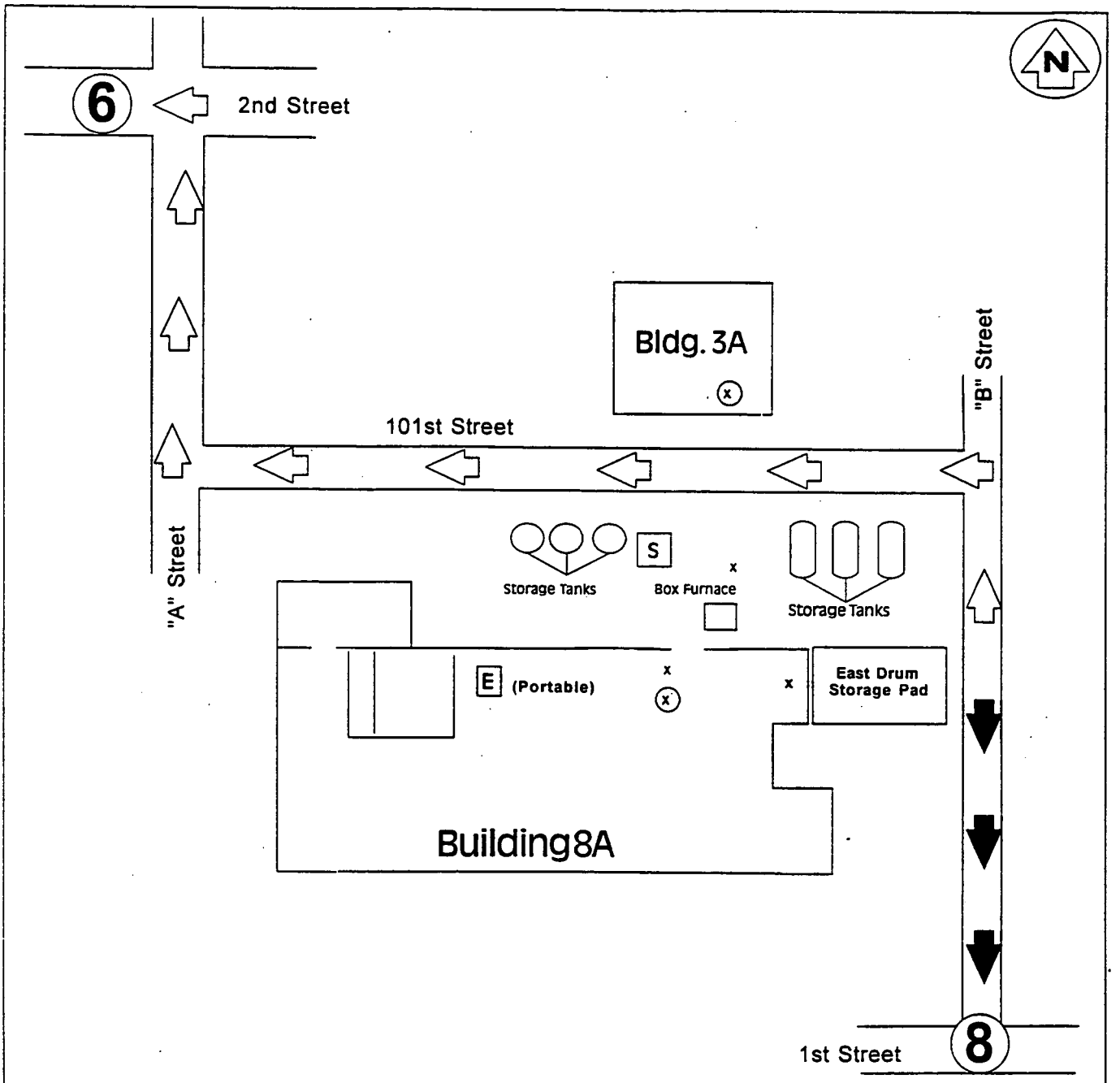
- Fire Extinguishers
  ~~1) 10# ABC First Floor Building 8A by elevator~~
  1) 10# ABC Box Furnace Pad outside North door
  2) 10# ABC First Floor, Building 8A, at Column C-10
  3) 10# ABC First Floor on East wall by roll-up door

- Eye Wash/Safety Shower Station
  ~~1) East of NaOH Storage Tank Northeast of Building 8A~~
  1) Portable stations in Building 8A

HWMU No. 17 - PLANT 8 EAST DRUM STORAGE PAD

- Spill Cleanup Equipment
  1) Located North of Building 8A, East of Tank 28A

~~- Respirator Cabinet (Plant 8)~~
~~1) 1st Floor at Southeast Satellite Clothing Area near new Rotary Kiln~~



PLANT 8 EAST DRUM STORAGE PAD
HWMU #17

X = Fire Extinguisher

(X) = Manual Fire Alarm

E = Emergency Eye Wash Station

S = Safety Shower

= Primary Evacuation Route

= Alternate Evacuation Route

8 = Rally Point

HWMU No. 18 - PLANT 8 WEST DRUM STORAGE PAD

The Plant 8 West Drum Storage Pad is located in the West section of the Production Area. The pad is no longer used to store containers of hazardous waste but may be used for short-term storage of containers of low-level radioactive waste.

Personnel should evacuate to Rally Point No. 8 which is located at the intersection of 1st Street and "B" Street. Movement is east on 101st Street to "B" Street and south on "B" Street to the intersection of 1st Street.

The Alternate Rally Point is No. 6. Rally Point No. 6 is located north of the West Water Tower, at the Waste Pit access gate. Movement is north on "A" Street to 2nd Street and west to the rally point.

The following is a list of safety equipment assigned to this unit:

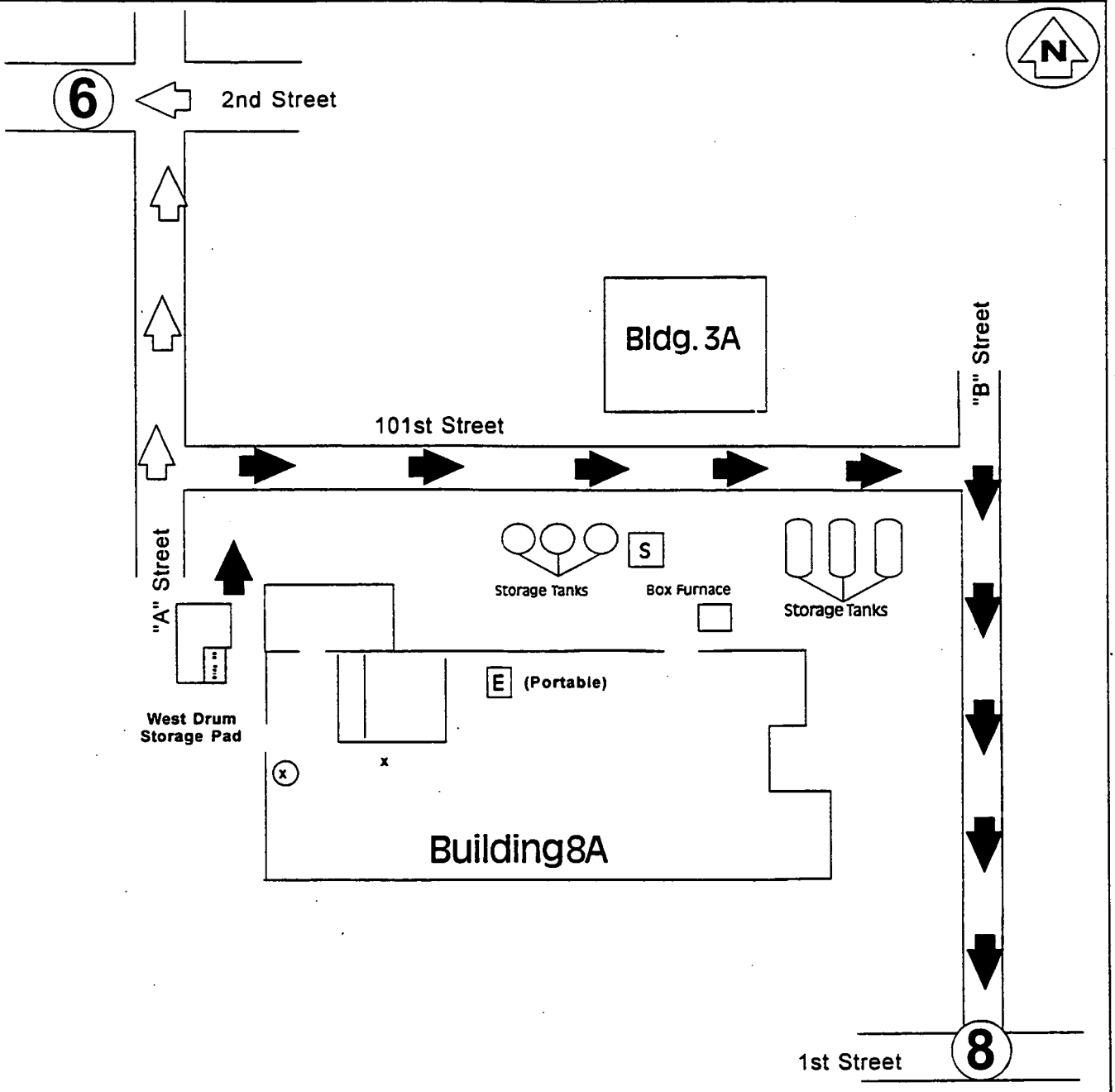
- Manual Fire Alarm
  ~~1) First Floor Northwest side by Supervisor's Office~~
  1) First Floor Building 8A at West entrance door

- Fire Extinguisher
  ~~1) 10# ABC First Floor West side by overhead door~~
  1) #10 ABC First Floor Building 8A by Column C-4

- Eye Wash/Safety Shower Station
  ~~1) Outside on West wall of Building 8A~~
  1) Portable stations in Building 8A

- Spill Cleanup Equipment
  1) Outside West off of Northwest corner of Building 8A

~~• Respirator Cabinet~~
~~1) 1st Floor Northwest in Building 8A near Office~~



PLANT 8 WEST DRUM STORAGE PAD
HWMU #18

X = Fire Extinguisher

(X) = Manual Fire Alarm

E = Emergency Eye Wash Station

S = Safety Shower

= Primary Evacuation Route

= Alternate Evacuation Route

8 = Rally Point

HWMU No. 19 - CP STORAGE WAREHOUSE BLDG. 56 (BUTLER BLDG.)

The CP Storage Warehouse is a pre-engineered, ribbed, unheated building covered by metal roofing. This warehouse is being used for the storage of containers of hazardous waste with free liquids.

~~Personnel should evacuate to Rally Point No. 7 which is located on "B" Street at the Northeast corner of Plant 1 Storage Pad. Movement is east to "B" Street and south on "B" Street to the Northeast corner of Plant 1 Storage Pad.~~

Personnel should evacuate to Rally Point No. 3 which is located at the intersection of 2nd Street and "C" Street. Movement is east on 3rd Street to south on "B" Street, then east on 2nd Street to the intersection of "C" Street.

The Alternate Rally Point is No. 6. Rally Point No. 6 is located north of the West Water Tower, at the Waste Pit Area access gate. Movement is west on 3rd Street to south on "A" Street, then west on 2nd Street to the rally point.

The following is a list of safety equipment assigned to this unit:

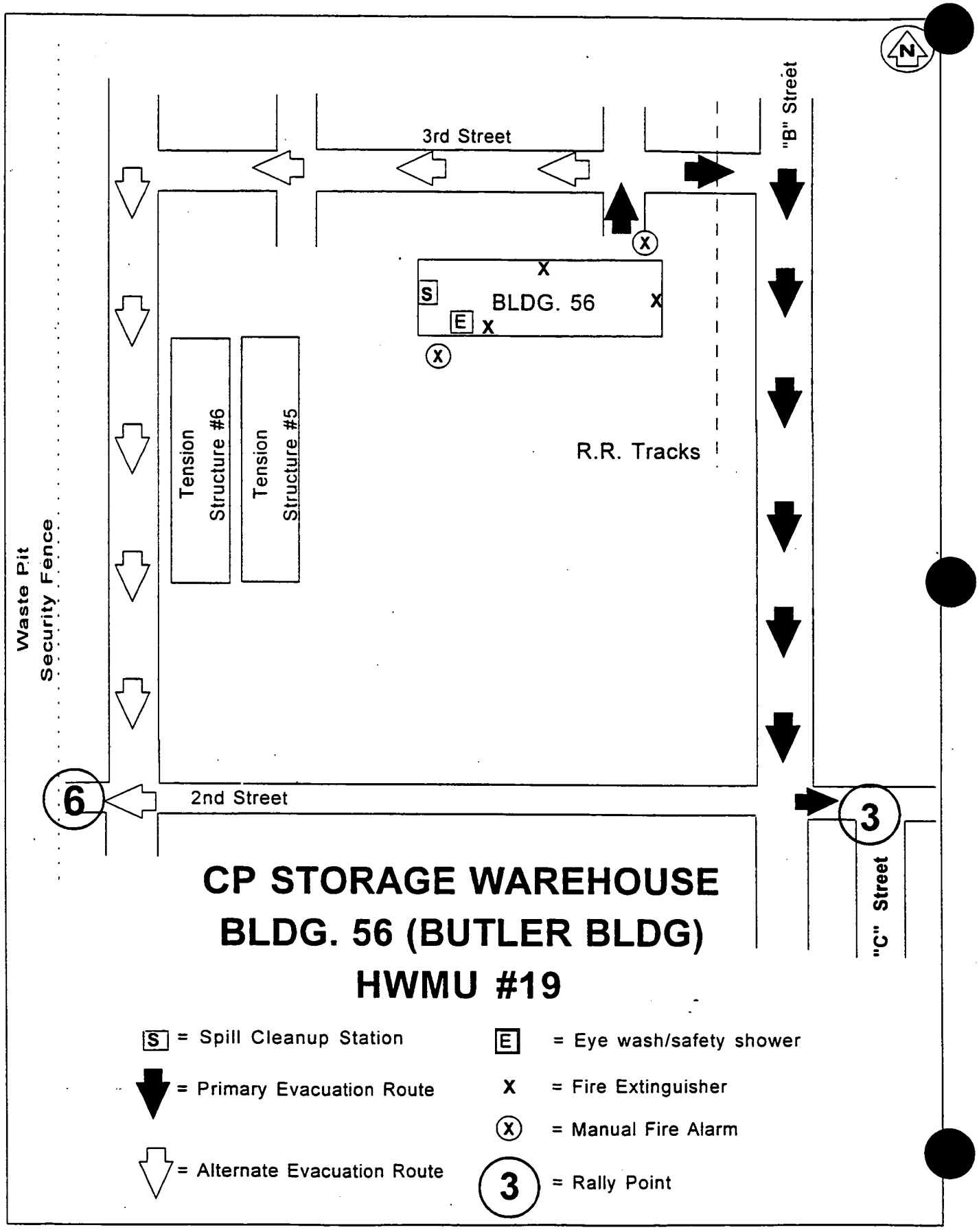
- Manual Fire Alarms
  1) On outside Northeast building corner
  2) On outside Southwest building corner

- Fire Extinguishers
  1) 20# ABC on South wall between South pedestrian door and Southwest truck door
  2) 10# ABC on North wall center of building
  3) 10# ABC on East wall by East truck door

- Eye Wash Station
  1) Inside, South wall by Southwest truck door

HWMU No. 19 - CP STORAGE WAREHOUSE BLDG. 56 (BUTLER BLDG.

- Spill Cleanup Equipment
  1) Located near the West inside wall, center of building
  ~~2) Located near the East inside wall, center of building~~
  ~~3) Outside, Southwest corner of building near truck door~~



CP STORAGE WAREHOUSE
BLDG. 56 (BUTLER BLDG)
HWMU #19

S = Spill Cleanup Station

E = Eye wash/safety shower

= Primary Evacuation Route

X = Fire Extinguisher

(X) = Manual Fire Alarm

= Alternate Evacuation Route

3 = Rally Point

HWMU No. 20 - PLANT 1 PAD

The Plant 1 Pad provides indoor and outdoor storage for hazardous waste.

Personnel should evacuate to Rally Point No. 6. Rally Point No. 6 is located North of the West Water Tower, at the Waste Pit Area access gate. Movement is south to 2nd Street, then west on 2nd Street to the Waste Pit Area access gate.

The Alternate Rally Point is No. 3. Rally Point No. 3 is located at the intersection of 2nd Street and "C" Street. Movement is east, then south past the east side of Building 1A to 2nd Street, and east on 2nd Street to the intersection of "C" Street.

The following is a list of safety equipment assigned to this unit:

- Manual Fire Alarms
  1) Outside Northeast corner of Building 1A
  2) Outside on North wall of Building 30A
  3) Outside on East end of North wall of Building 66

- Fire Extinguishers

~~1) 10# ABC Middle of West side of Drum Shelter~~

~~2-9) 10# ABC Eight (8) in Tension Support Structure #1~~

~~10-17) 10# ABC Eight (8) in Tension Support Structure #2~~

1-18) 10# ABC Eighteen (18) in Tension Support Structure #4

19-36) 10# ABC Eighteen (18) in Tension Support Structure #5

37-44) 10# ABC Eight (8) in Tension Support Structure #6

HWMU No. 20 - PLANT 1 PAD

- Eye Wash Station

~~1) Outside of Building 1A by North wall near center~~

~~2) Second floor above Mill Area next to Supervisors office~~

1) Inside, south wall of Tension Support Structure #4
2) Inside, south wall of Tension Support Structure #5
3) Inside, southwest corner of Tension Support Structure #6

- Spill Cleanup Equipment

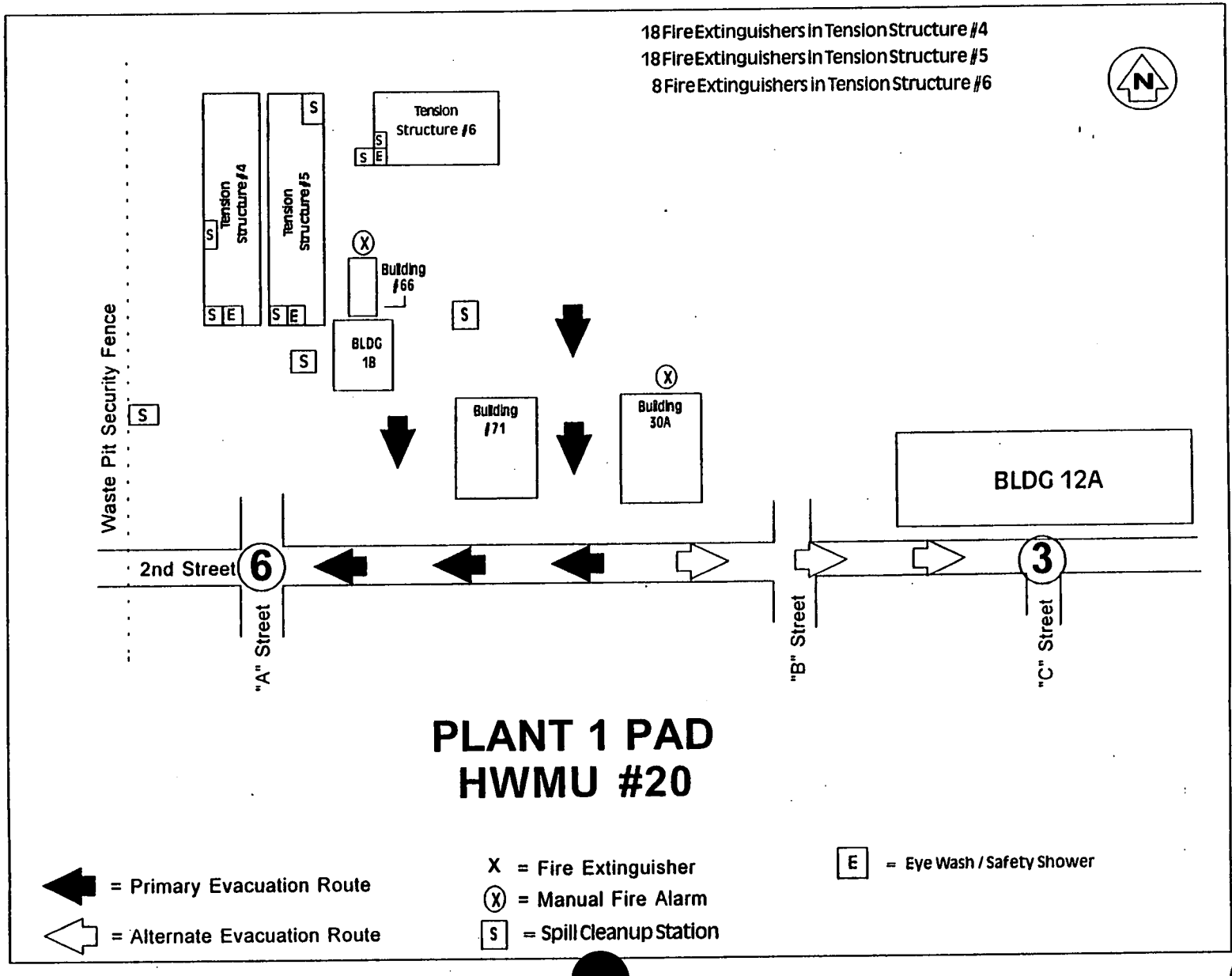
~~1-7) Seven (7) located outside of Tension Support and Sprung Structures~~

~~8) In Mill Area in Building 1A~~

1) Inside, southwest corner of Tension Support Structure #4
2) Inside, southwest corner of Tension Support Structure #5
3) Inside, west wall of Tension Support Structure #6
4) Outside of Building 1B by West wall near center
5) Outside, southeast of Tension Support Structure #4 by waste pit security fence
6) Outside, southwest corner of Tension Support Structure #6

- Respirator Cabinet
  1) Inside Building 1A in Primary Satellite Clothing Area

Those personnel at this unit are required to have a two-way radio to facilitate emergency notification.


18 Fire Extinguishers in Tension Structure #4
18 Fire Extinguishers in Tension Structure #5
8 Fire Extinguishers in Tension Structure #6
N
Tension Structure #6
Tension Structure #4
Tension Structure #5
Building #66
BLDG 1B
Building #71
Building 30A
BLDG 12A
Waste Pit Security Fence
2nd Street
6
3
"A" Street
"B" Street
"C" Street
PLANT 1 PAD
HWMU #20
= Primary Evacuation Route
= Alternate Evacuation Route
X = Fire Extinguisher
(X) = Manual Fire Alarm
S = Spill Cleanup Station
E = Eye Wash / Safety Shower

HWMU No. 21 - HILCO OIL RECOVERY

This unit is located in Plant 5 and consists of an oil holding tank on the second floor of Plant 5 and the Stokes pump area on the first floor. The system has not operated since June 1989. This unit has been closed in accordance with OEPA letter of June 17, 1996.

~~Personnel should evacuate to Rally Point No. 5. Rally Point No. 5 is located at the intersection of 1st Street and "D" Street. Movement is east to "D" Street and south on "D" Street to the intersection of 1st Street.~~

~~The Alternate Rally Point is No. 3. Rally Point No. 3 is located at the intersection of 2nd Street and "C" Street. Movement is north to 2nd Street, then west to the intersection of 2nd and "C" Streets.~~

~~The following is a list of safety equipment located at this unit:~~

~~• Manual Fire Alarm~~
~~1) Second floor at location 3D - West of HWMU~~

~~• Fire Extinguishers~~
~~1) 10# ABC Second Floor at location 3D~~
~~2) 10# ABC Second Floor Graphite Shop Southeast corner~~

~~• Respirator Cabinet~~
~~1) First Floor inside Maintenance Shop East of location F11~~

~~• Spill Cleanup Equipment~~
~~1) Second Floor at Hilco Unit~~

HWMU No. 22 - ABANDONED SUMP WEST OF PILOT PLANT

This unit is a temporary sump located to the West of the Pilot Plant.

Personnel should evacuate to Rally Point No. 8. Rally Point No. 8 is located at the intersection of 1st and "B" Street. Movement is north to 1st Street, then east to "B" Street.

The Alternate Rally Point is No. 6. Rally Point No. 6 is located north of the West Water Tower, at the Waste Pit Area access gate. Movement is north on "A" Street to the intersection of 2nd Street, then west on 2nd Street to the rally point.

There is no safety equipment assigned to this HWMU. Those personnel desiring access to this unit are required to have a two-way radio for emergency notification purposes.

~~The following is a list of safety equipment assigned to this unit:~~

~~• Manual Fire Alarms~~
~~1) Outside on South wall of Pilot Plant near center of building~~
~~2) Outside at South end of East wall of Building 13B~~

~~• Fire Extinguishers~~
~~1) 10# ABC outside West Solvent Tanks Berm~~

~~• Eye Wash/Safety Shower Station~~
~~1) On outside South wall of Pilot Plant near West end of building~~

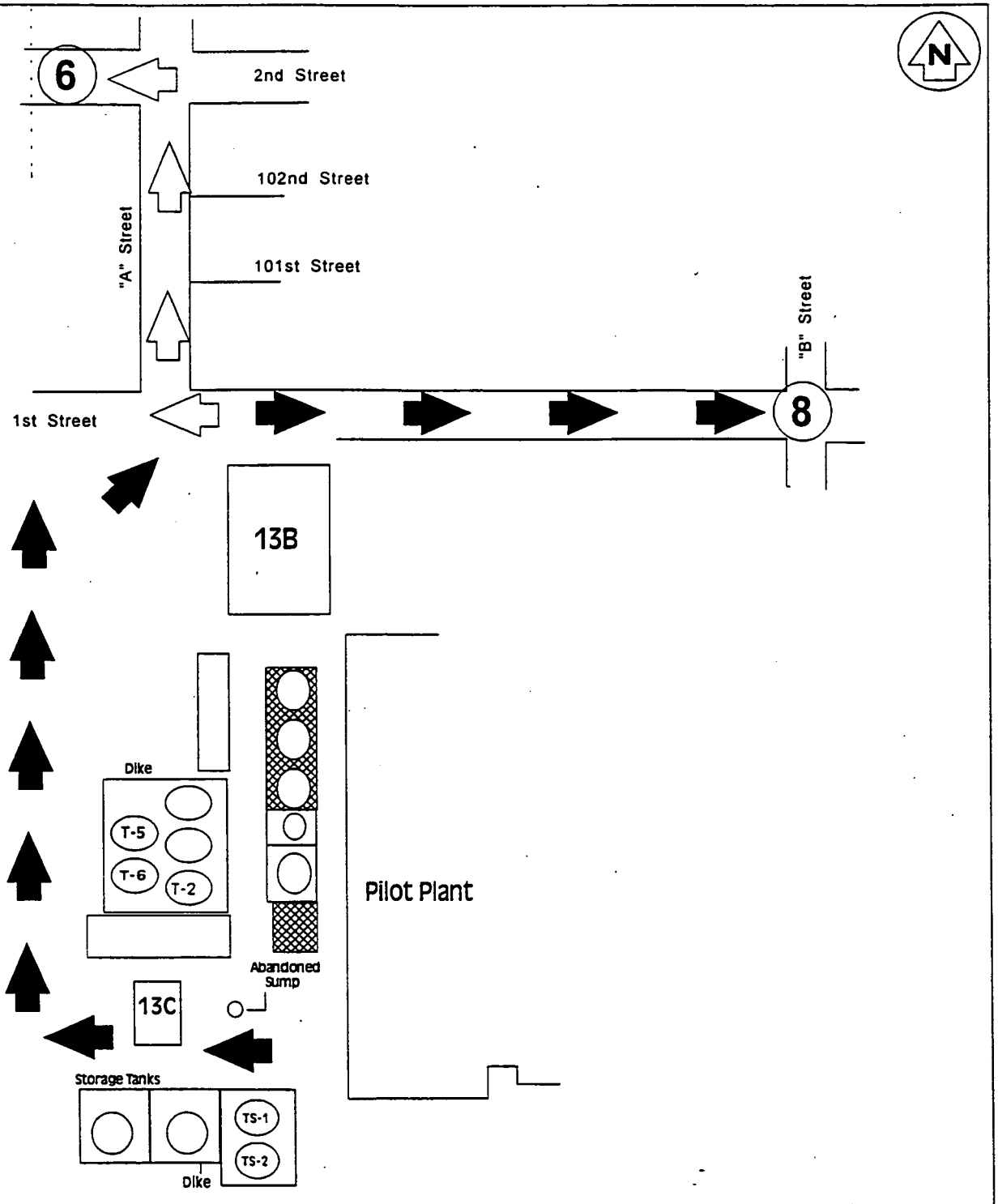
~~• Safety Shower Station~~
~~1) On outside West wall of Pilot Plant~~

~~HWMU No. 22 - ABANDONED SUMP WEST OF PILOT PLANT~~

~~• Spill Cleanup Equipment~~

~~1) West of HWMU~~

~~Those personnel desiring access to this HWMU are required to have a two-way radio to facilitate emergency notification.~~



ABANDONED SUMP WEST OF PILOT PLANT

HWMU #22

000232

= Alternate Evacuation Route = Primary Evacuation Route

HWMU No. 23 - WELL DRILLING STORAGE AREA

This area is located Northwest of the Waste Pit Area. This has been removed from the HWMU list.

HWMU No. 24 - EQUIPMENT STORAGE AREA

This area is a waste accumulation area located Northwest of the Waste Pit Area. This has been removed from the HWMU list.

HWMU No. 25 - PLANT 1 STORAGE BLDG (BLDG. 67)

The Plant 1 Storage Building (Building 67) ~~is~~was a storage area located West of Plant 1A. The building has been dismantled. Closure is being completed through remediation of the Plant 1 Phase I Complex.

Personnel should evacuate to Rally Point No. 6. Rally Point No. 6 is located North of the West Water Tower, at the Waste Pit Area access gate. Movement is south on "A" Street to 2nd Street and then west on 2nd Street to the Waste Pit Area access gate.

The Alternate Rally Point is No. 3. Rally Point No. 3 is located at the intersection of 2nd Street and "C" Street. Movement is east through Plant 1B, then south past the east side of Building 1A to 2nd Street, and east to the intersection of "C" Street.

~~The following is a list of safety equipment assigned to this unit:~~

- ~~Manual Fire Alarm~~
  - ~~1) Outside on South wall of Building 1A near center~~
  - ~~2) Outside Northeast corner of Plant 1~~

- ~~Fire Extinguishers~~
  - ~~1) 10# ABC Building 1A at Column 2B~~
  - ~~2) 15# CO_2 Building 1A at Column 4E~~
  - ~~3) 10# ABC Building 1A at Column 2E~~
- ~~Eye Wash Station~~
  - ~~1) None are available at this unit. Use the station outside Building 1A on North wall North of Column 8B~~
  - ~~2) Also one on second floor of Building 1A on east side of Supervisors Office~~

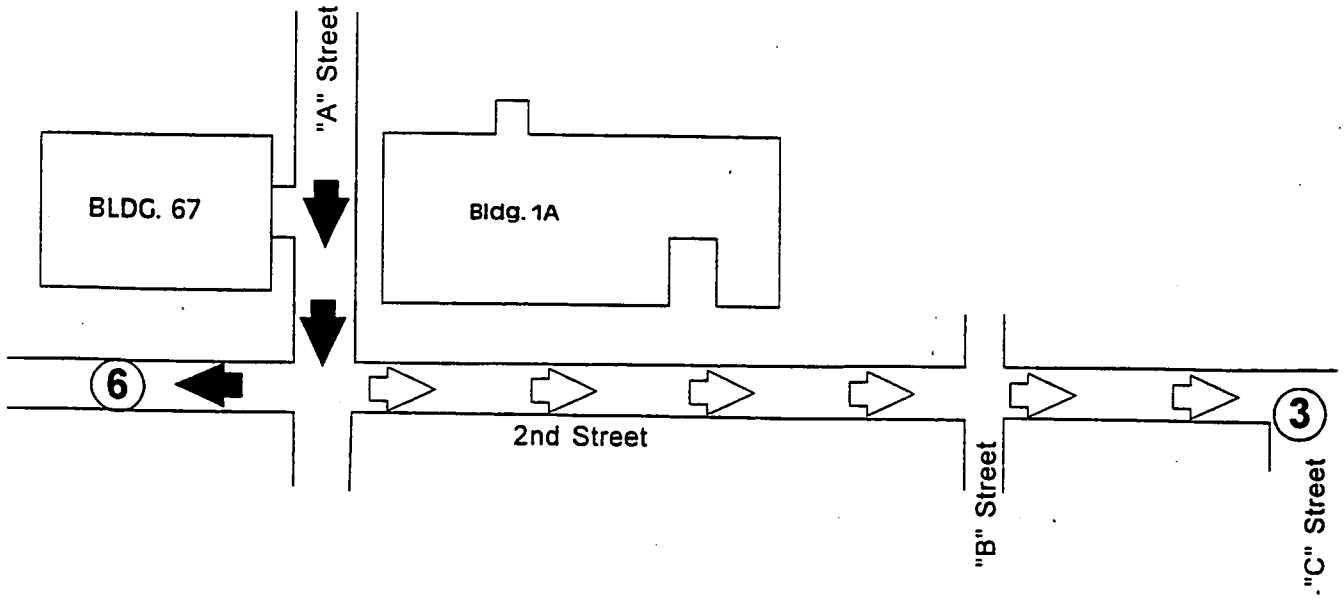
- ~~Spill Cleanup Equipment~~
  - ~~1) Use equipment in Building 1A at column 8C~~

~~HWMU No. 25 - PLANT 1 STORAGE BLDG (BLDG. 67)~~

~~• Respirator Cabinets~~

~~1) None are available at this unit. Use respirators from cabinets located in Building 1A Satellite Clothing Area or Building 71 Northeast corner~~

~~Those personnel desiring access to this unit are required to have a Radiation Safety Technician monitor their entry and egress. The Technician is equipped with a two-way radio to facilitate emergency notification.~~



PLANT 1 STORAGE BLDG (BLDG. 67)
HWMU #25

= alternate evacuation route

= primary evacuation route

6 = rally point

HWMU No. 26 - DETREX STILL

The Detrex Still ~~is~~ was located in Plant 1 and was used as a distillation unit for recovery of chlorinated hydrocarbon solvents. This unit has been closed in accordance with OEPA letter dated November 27, 1995.

~~Personnel should evacuate to Rally Point No. 6. Rally Point No. 6 is located North of the West Water Tower, at the Waste Pit Area access gate. Movement is south past the West side of Plant 1 to 2nd Street and west to the Waste Pit Area access gate.~~

~~The Alternate Rally Point is No. 3. Rally Point No. 3 is located at the intersection of 2nd Street and "C" Street. Movement is south past the East side of Plant 1 to 2nd Street, and east on 2nd Street to the Point.~~

~~The following is a list of safety equipment assigned to this unit:~~

~~• Manual Fire Alarm~~
~~1) West of column 7C~~
~~2) Northeast of Building 66 (Outside)~~

~~• Fire Extinguisher~~
~~1) 10# ABC First Floor at column 7C~~

~~• Eye Wash Station~~
~~1) Outside against North wall near exit from Satellite Clothing Area~~
~~2) Second floor east side of Supervisors Office~~

~~• Spill Cleanup Equipment~~
~~1) By Column 8C~~

~~HWMU No. 26 - DETREX STILL~~

- ~~Respirator Cabinet~~

~~1) Outside against North wall by Supervisor's Office~~

~~2) Inside Building 1A Satellite Clothing Area~~

~~3) Inside Northeast corner of Building 71~~

HWMU No. 27 - WASTE PIT No. 4

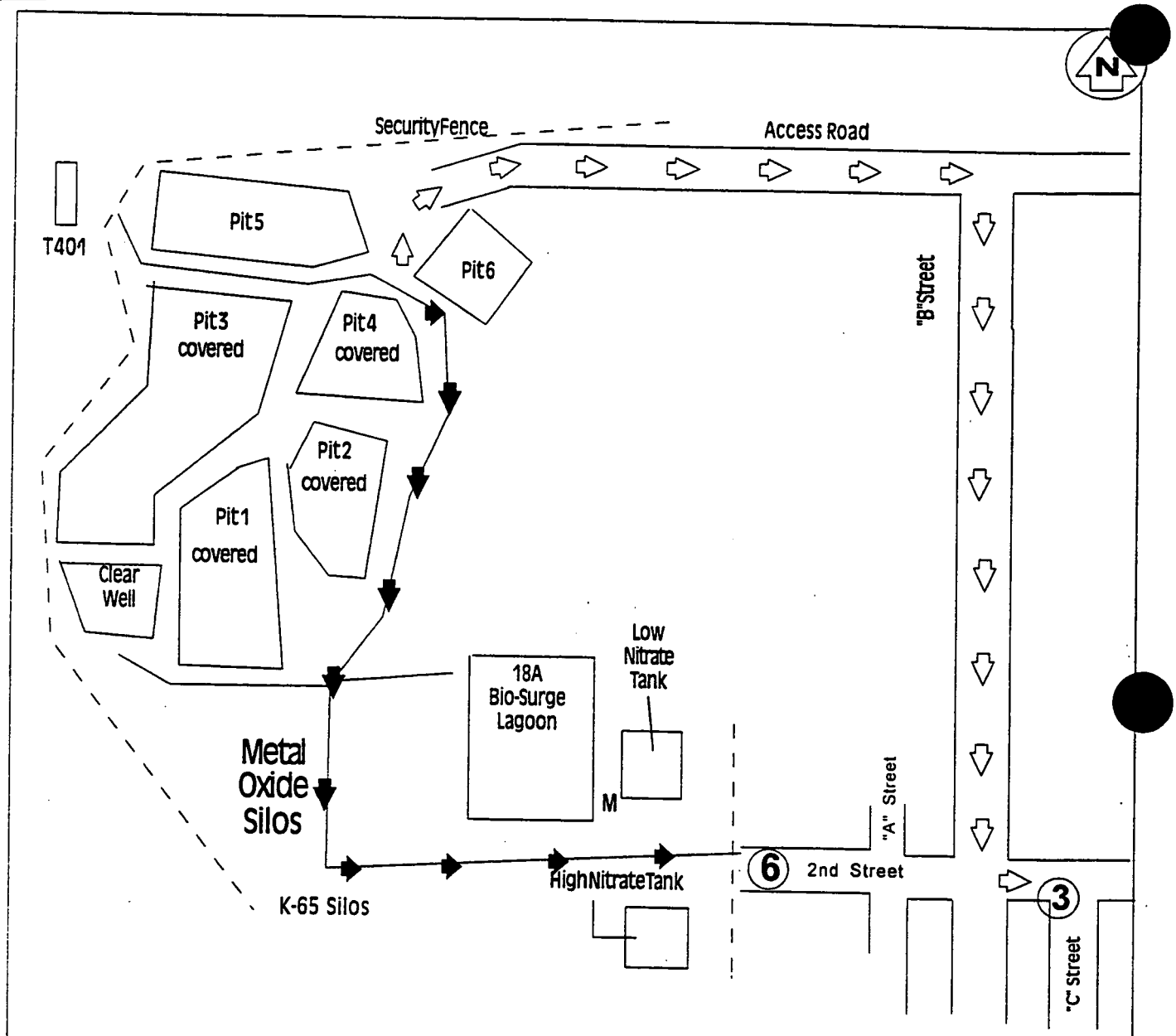
Waste Pit No. 4 is located West of the Production Area in the Waste Pit Area.

Personnel should evacuate to Rally Point No. 6. Rally Point No. 6 is located North of the West Water Tower, at the Waste Pit Area access gate. Movement is southeast to 2nd Street and then east to the Waste Pit Area access gate.

~~**The Alternate Rally Point is No. 7. Rally Point No. 7 is located on "B" Street west of the Boiler Plant. Movement is north past Pit 6 on the access road, then east to "B" Street and south on "B" Street to the Point.**~~

The Alternate Rally Point is No. 3. Rally Point No. 3 is located at the intersection of 2nd Street and "C" Street. Movement is north past Pit 6 on the access road, then east to "B" Street, south on "B" Street to 2nd Street and east on 2nd Street to the intersection of "C" Street.

There is no safety equipment assigned to this unit. The pit is covered. Those personnel desiring access to this unit are required to have a two-way radio for emergency notification purposes.



WASTE PIT NO. 4
HWMU #27

⇨ = alternate evacuation route

➡ = primary evacuation route

M = Methanol Tank

(6) = rally point

HWMU No. 28 - TRANE THERMAL LIQUID INCINERATOR

The Trane Liquid Thermal Incinerator was used to incinerate liquid waste contaminated with radionuclides and liquid hazardous wastes. In addition to the incinerator, it consists of an oil-water separator (Building 39B), Feed Tank F3E-406 located near the Plant 2/3 Combined Raffinate pad, and the Plant 2/3 West Storage Pad. Hazardous wastes residues remain in this unit.

Personnel should evacuate to Rally Point No. 6. Rally Point No. 6 is located North of the West Water Tower, at the Waste Pit Area access gate. Movement is west to "A" Street and north on "A" Street to 2nd Street and then west to the Waste Pit Area access gate.

The Alternate Rally Point is No. 8. Rally Point No. 8 is located at the intersection of 1st Street and "B" Street. Movement is west to "A" Street, then south on "A" Street and east on 1st Street to the intersection of "B" Street.

The following is a list of safety equipment assigned to this unit:

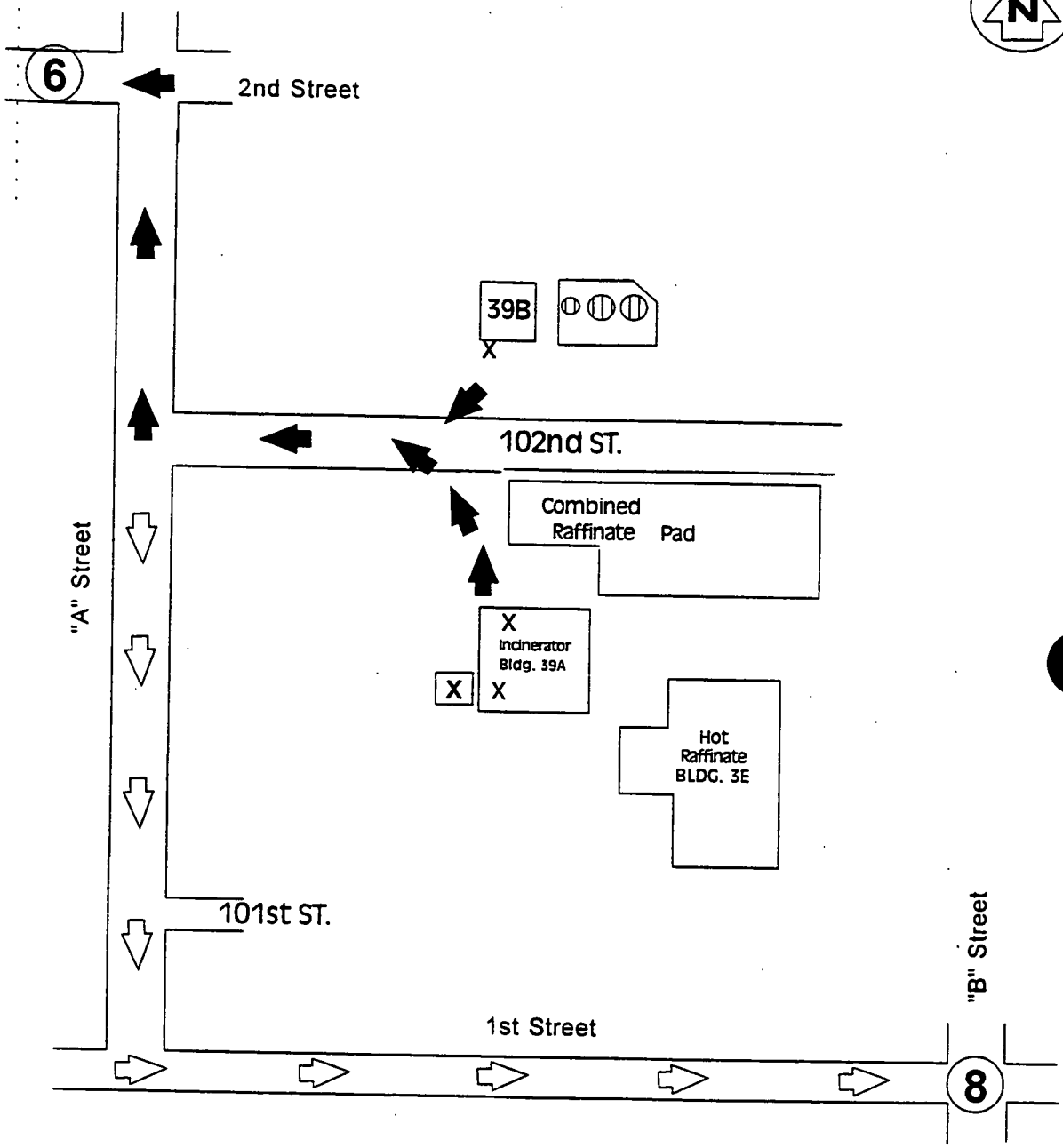
- Manual Fire Alarm
  1) Outside at Southwest corner of Building 39A

- Fire Extinguishers
  1) 10# ABC First Floor Incinerator Bldg. (39A) North wall
  2) 10# ABC First Floor Incinerator Bldg. (39A) Southwest corner
  3) ABC Outside, located at shelter southwest of trough Building 39B

~~- Eye Wash Station and Safety Shower~~

~~- Portable Eyewash/Safety Showers~~

~~Portable eyewash/safety showers are to be placed in areas at HWMU 28 where hazardous work is occurring~~



TRANE THERMAL LIQUID INCINERATOR
HWMU #28

X = Manual Fire Alarm

6 = Rally Point

X = Fire Extinguisher

= Primary Evacuation Route

= Alternate Evacuation Route

HWMU No. 29 - PLANT 8 WAREHOUSE (BLDG. 80)

The Plant 8 Warehouse storage unit is a pre-engineered, ribbed, unheated building covered by metal roofing. The warehouse is being used for storage of containers without free liquids.

Personnel should evacuate to Rally Point No. 8. Rally Point No. 8 is located at the intersection of 1st Street and "B" Street. Movement is south to 1st Street and east on 1st Street to the intersection of "B" Street.

The Alternate Rally Point is No. 6. Rally Point No. 6 is located north of the West water tower, at the Waste Pit area Access Gate. Movement is north on "A" Street to 2nd Street, then west on 2nd Street to the gate.

The following is a list of safety equipment assigned to this unit:

- Manual Fire Alarms
  1) Inside Building 80 on East wall
  2) Inside Building 80 on West wall

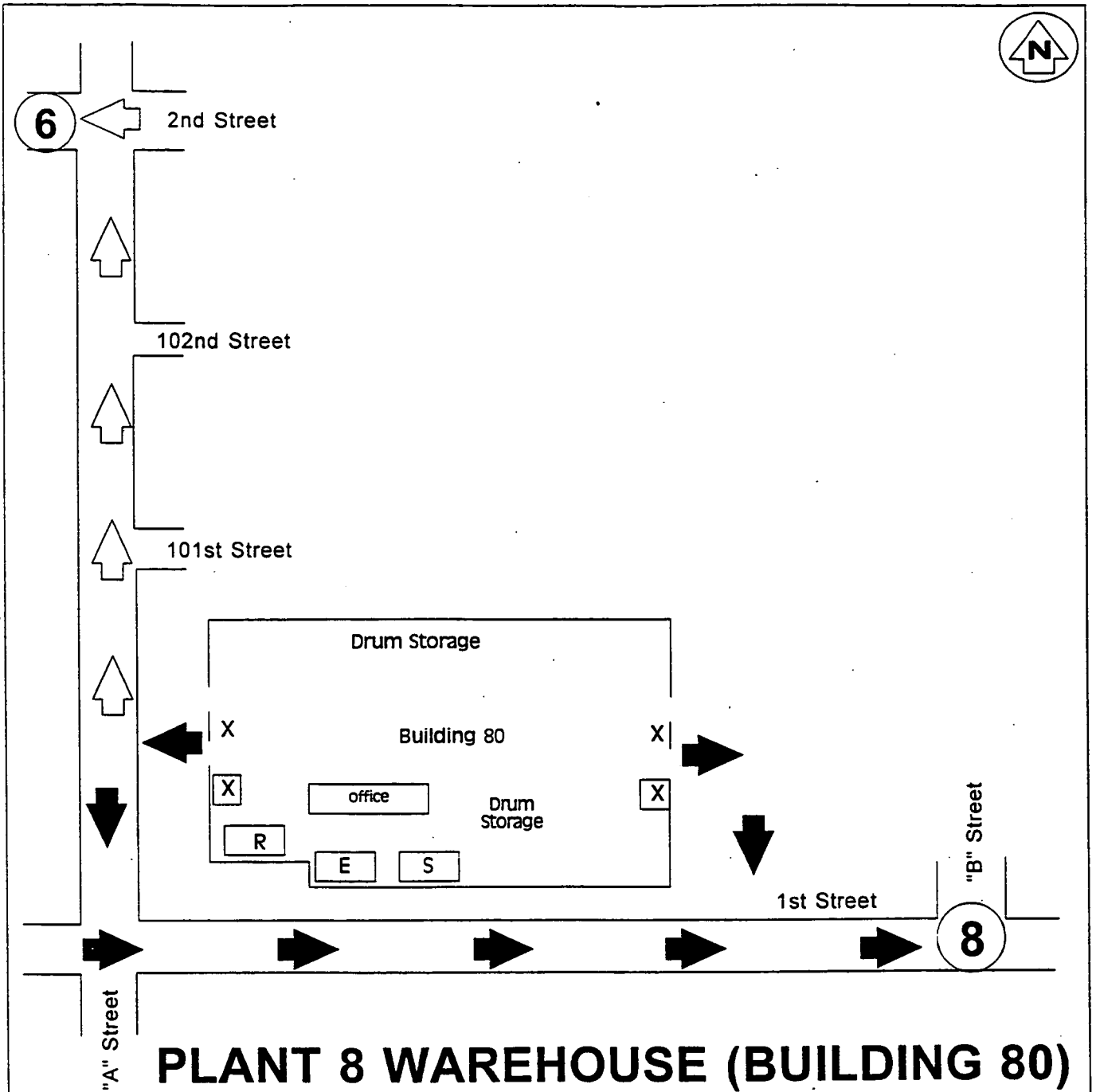
- Fire Extinguishers
  1) 10# ABC at East door
  2) 10# ABC at West door
  ~~3) 10# ABC in riser room~~

- Eye Wash/Safety Shower Station
  1) Near Southwest corner of building behind Office (Portable Unit)

- Spill Cleanup Equipment
  1) Near Southwest corner of building behind Office

HWMU No. 29 - PLANT 8 WAREHOUSE (BLDG. 80)

- Respirator Cabinet
  1) On South wall of building behind Office



PLANT 8 WAREHOUSE (BUILDING 80)
HWMU #29

R = Respirator Cabinet
E = Eye Wash/Safety Shower
S = Spill Cleanup Equipment
X = Manual Fire Alarm

X = Fire Extinguisher
= Primary Evacuation Route
= Alternate Evacuation Route
8 = Rally Point

HWMU No. 30 - BARIUM CHLORIDE SALT TREATMENT FACILITY

This unit was used to convert barium chloride into barium sulfate. It has been emptied, cleaned and dismantled in accordance with the Closure Plan schedule. Clean Closure was certified on April 2, 1990, and USEPA approval of the closure was received on April 19, 1990.

HWMU No. 31 - TANK FOR BULK STORAGE OF SOLVENTS, T-5

This unit is an above ground storage tank located West of the Pilot Plant. This tank has been closed in accordance with OEPA letter dated Novcember 29, 1996.

~~Personnel should evacuate to Rally Point No. 8. Rally Point No. 8 is located at the intersection of 1st and "B" Street. Movement is north to 1st Street, then east to "B" Street.~~

~~The Alternate Rally Point is No. 6. Rally Point No. 6 is located north of the West Water Tower, at the Waste Pit Area access gate. Movement is north on "A" Street to 2nd Street, then west on 2nd Street to the rally point.~~

~~The following is a list of safety equipment assigned to this unit:~~

~~• Manual Fire Alarms~~
~~1) Outside on South wall of Pilot Plant near center of building~~
~~2) Outside at South end of East wall of Building 13B~~

~~• Fire Extinguishers~~
~~1) 10# ABC at West Solvent Tanks Berm~~

~~• Eye Wash/Safety Shower Station~~
~~1) On outside South wall of Pilot Plant near West end of building~~

~~• Safety Shower Station~~
~~1) On outside West wall of Pilot Plant~~

~~HWMU No. 31 - TANK FOR BULK STORAGE OF SOLVENTS, T-5~~

~~• Spill Cleanup Equipment~~

~~1) East of Bldg. 13C~~

~~Those personnel desiring access to this HWMU are required to have a two-way radio to facilitate emergency notification.~~

HWMU No. 32 - TANK FOR BULK STORAGE OF SOLVENTS, T-6

This unit is an above ground storage tank located West of the Pilot Plant. This tank has been closed in accordance with OEPA letter dated November 29, 1996.

~~Personnel should evacuate to Rally Point No. 8. Rally Point No. 8 is located at the intersection of 1st and "B" Street. Movement is north to 1st Street, then east to "B" Street.~~

~~The Alternate Rally Point is No. 6. Rally Point No. 6 is located north of the West Water Tower, at the Waste Pit Area access gate. Movement is north on "A" Street to 2nd Street, then west on 2nd Street to the rally point.~~

~~The following is a list of safety equipment assigned to this unit.~~

- ~~Manual Fire Alarms~~
  - ~~1) Outside on South wall of Pilot Plant near center of building~~
  - ~~2) Outside at South end of East wall of Building 13B~~

- ~~Fire Extinguishers~~
  - ~~1) 10# ABC at West Solvent Tanks Berm~~

- ~~Eye Wash/Safety Shower Station~~
  - ~~1) On outside South wall of Pilot Plant near West end of building~~

- ~~Safety Shower Station~~
  - ~~1) On outside West wall of Pilot Plant~~

~~HWMU No. 32 - TANK FOR BULK STORAGE OF SOLVENTS, T-6~~

~~• Spill Cleanup Equipment~~

~~1) East of Building 13C~~

~~Those personnel desiring access to this HWMU are required to have a two-way radio to facilitate emergency notification.~~

HWMU No. 33 - PILOT PLANT WAREHOUSE (BLDG. 68)

The Pilot Plant Warehouse is a pre-engineered fabricated building which is totally enclosed, and sided and roofed with transite. Hazardous waste is stored in a diked area approximately 62' x 7' in the warehouse. There currently are no containers of hazardous waste stored in the Pilot Plant Warehouse.

Personnel should evacuate to Rally Point No. 8. Rally Point No. 8 is located at the intersection of 1st and "B" Street. Movement is East, then north to 1st Street then proceed east to the intersection of "B" Street.

The Alternate Rally Point is No. 6. Rally Point No. 6 is located north of the West water tower, at the Waste Pit area Access Gate. Movement is west, then north to 1st Street, then east on 1st Street to "A" Street and north on "A" Street to 2nd Street, then west on 2nd Street to the gate.

The following is a list of safety equipment assigned to this unit:

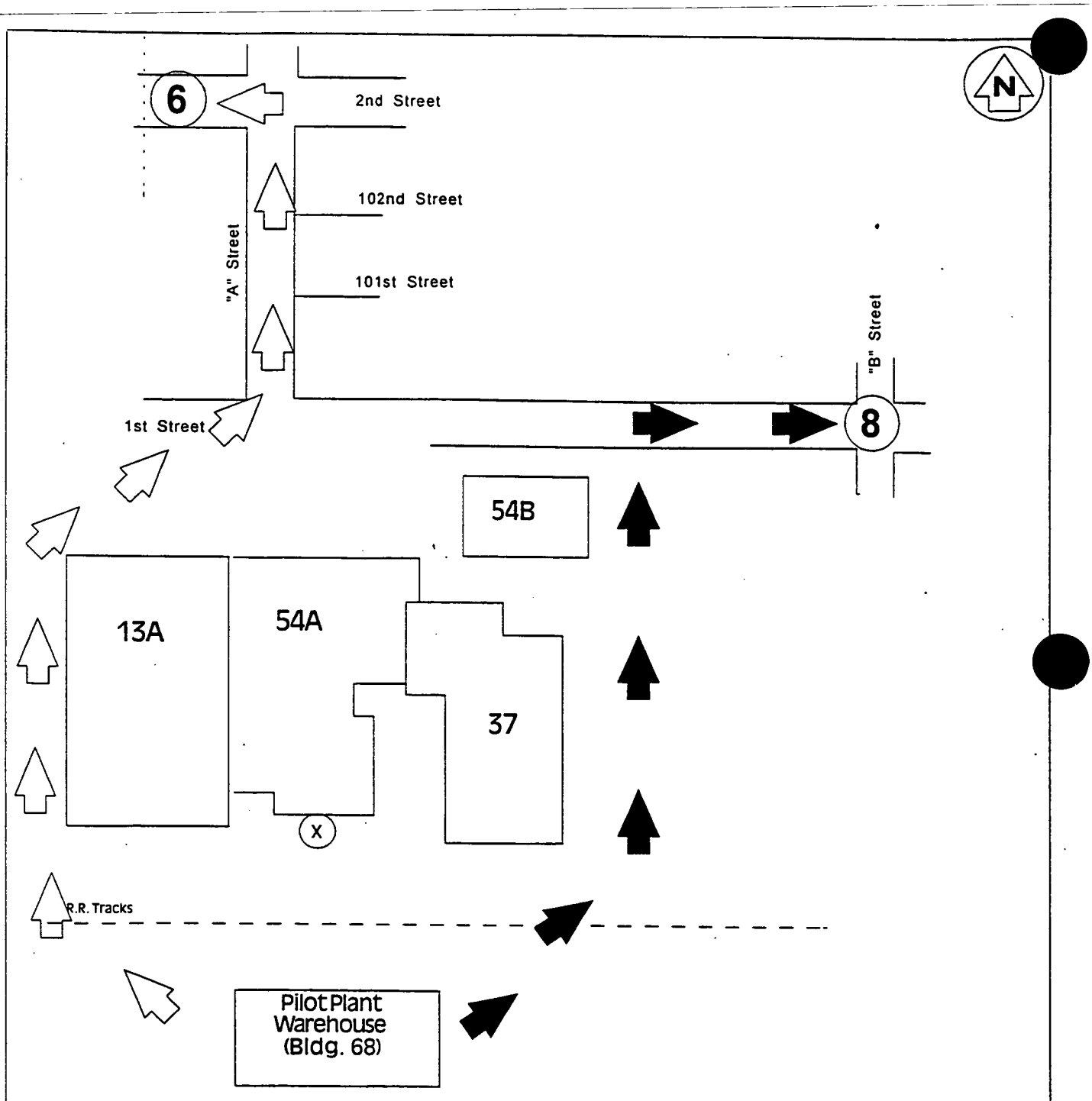
- Manual Fire Alarm
  1) On outside South wall of Pilot Plant near center of building

- ~~Fire Extinguisher~~
  ~~1) 20# ABC North wall on outside of building~~

- ~~Eye Wash Station and Safety Showers~~
  ~~1) On outside south wall of Pilot Plant near West end~~

- ~~Spill Control Kit~~
  ~~1) On outside of building, at north gate of fence surrounding building~~

Those personnel desiring access to this unit are required to have a Radiation Safety Technician monitor their entry and egress. The Technician is equipped with a two-way radio to facilitate emergency notification.



PILOT PLANT WAREHOUSE (BLDG 68)

HWMU #33

(X) = Manual Fire Alarm

= Alternate Evacuation Route

= Primary Evacuation Route

HWMU No. 34 - KC-2 WAREHOUSE (BLDG. 63)

The KC-2 Warehouse (Bldg 63) is a pre-engineered, ribbed, unheated building covered by metal roofing. The warehouse is divided into eight bays. Each bay is constructed as a separate containment storage unit. The warehouse is used to store hazardous waste with and without free liquids. ~~The 90-Day Storage Area, which is used as a temporary container storage area, is located in Bay 3.~~

NOTE: Electrical power and water are scheduled to be permanently shut-off at KC-2 Warehouse beginning January 1997. Containers of hazardous waste may continue to be stored in the warehouse after this has occurred. However, this unit will no longer be used for the storage of D001-ignitable wastes.

~~Personnel should evacuate to Rally Point No. 7. Rally Point No. 7 is located on "B" Street at the Northeast corner of Plant 1 Pad. Movement is west to "B" Street and south on "B" Street to the Northeast corner of Plant 1 Pad.~~

~~The Alternate Rally Point is No. 3. Rally Point No. 3 is located at the intersection of 2nd Street and "C" Street. Movement is east to "D" Street, south on "D" Street to 2nd Street, then west on 2nd Street until the intersection at "C" Street.~~

Personnel should evacuate to Rally Point No. 3. Rally Point No. 3 is located at the intersection of 2nd Street and "C" Street. Movement is east to "D" Street, south on "D" Street to 2nd Street, then west on 2nd Street until the intersection at "C" Street.

The Alternate Rally Point is No. 8. Rally Point No. 8 is located at the intersection of 1stStreet and "B" Street. Mocvement is west to "B" Street and south on "B" Street to the intersection of B and 1st Street.

The following is a list of safety equipment assigned to this unit:

- Manual Fire Alarm
  1) Outside South wall center of building

HWMU No. 34 - KC-2 WAREHOUSE (BLDG. 63)

- Fire Extinguishers
  1) 20# ABC inside by West door of Bay 1
  2) 20# ABC outside South door of Bay 2
  3) 15# CO_2 at the riser between Bays 3 and 4
  4) 20# ABC between Bays 4 and 5
  5) 20# ABC between Bays 5 and 6
  6) 20# ABC East of Bay 8 door
  ~~7-13) 20# ABC inside North end of Bays 2,3,4,5,6,7,8~~
  7-10) 20# ABC inside North end of Bays 3,5,6,7
  ~~14) 20# ABC east of Bay 8 door~~

- Eye Wash/Safety Shower Stations

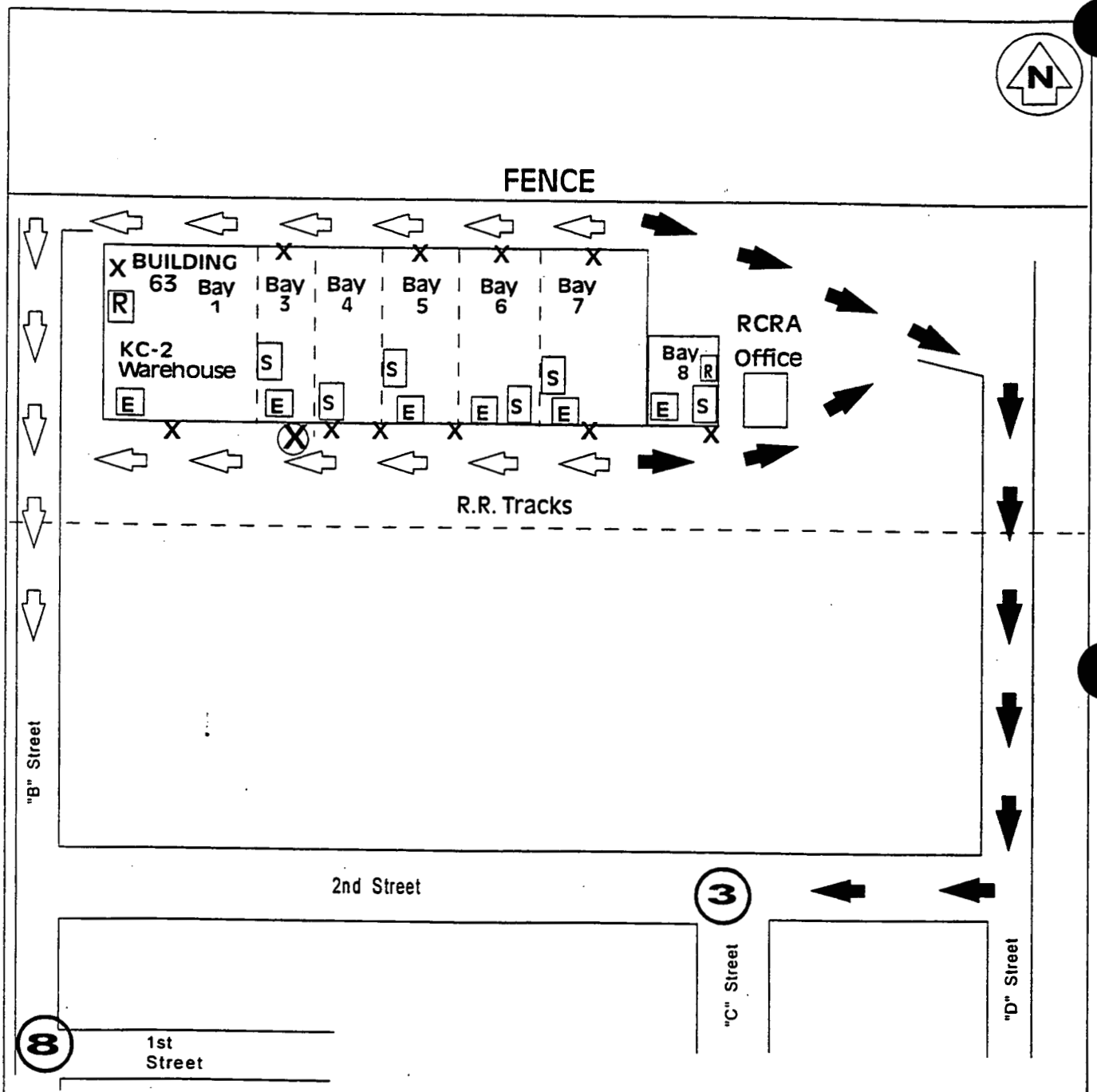
  Six (6) portable, all in Bay 1 during winter months;
  five are moved to Bays 3,5,6,7 and 8 during summer, and when personnel are working in those bays.

- Spill Cleanup Equipment
  1) Inside Bay 5
  2) Inside Bay 6
  3) Inside Bay 7
  ~~4) Inside Bay 1~~
  4) Inside Bay 4
  5) Inside Bay 3
  6) Inside Bay 8

- Respirator Cabinets
  1) Inside Bay 1
  2) Inside Bay 8

HWMU No. 34 - KC-2 WAREHOUSE (BLDG. 63)

Access to equipment inside Building 63 can be gained only by personnel having a key to Bays 1, 5, 6, 7, or 8. Those personnel desiring access to this unit are required to have a two-way radio to facilitate emergency notification.



KC-2 WAREHOUSE (BUILDING 63) HWMU #34

3 = rally point

S = spill cleanup equipment

R = respirator cabinet

E = eye wash / safety shower

= alternate route

(X) = manual fire alarm

X = fire extinguisher

= primary evacuation route

HWMU No. 35 - PLANT 9 WAREHOUSE (BLDG. 81)

The Plant 9 Warehouse storage unit is an 80' X 100' single story, pre-engineered, ribbed, metal building covered with metal roofing. The warehouse is constructed to store hazardous waste with and without free liquids and is equipped with a sprinkler system to provide fire protection for the storage of combustible hazardous wastes. Building has been used to store thorium and thorium-contaminated wastes. Personnel requiring access must contact a radiological safety technician for entry approval.

Personnel should evacuate to Rally Point No. 3 which is located at the inter-section of 2nd Street and "C" Street. Movement is west to "D" Street, south on "D" Street to 2nd Street, then west on 2nd Street to the intersection of "C" Street.

The Alternate Rally Point is No. 5 which is located at the intersection of 1st Street and "D" Street. Movement is south on "D" Street to 1st Street.

The following is a list of safety equipment assigned to this unit:

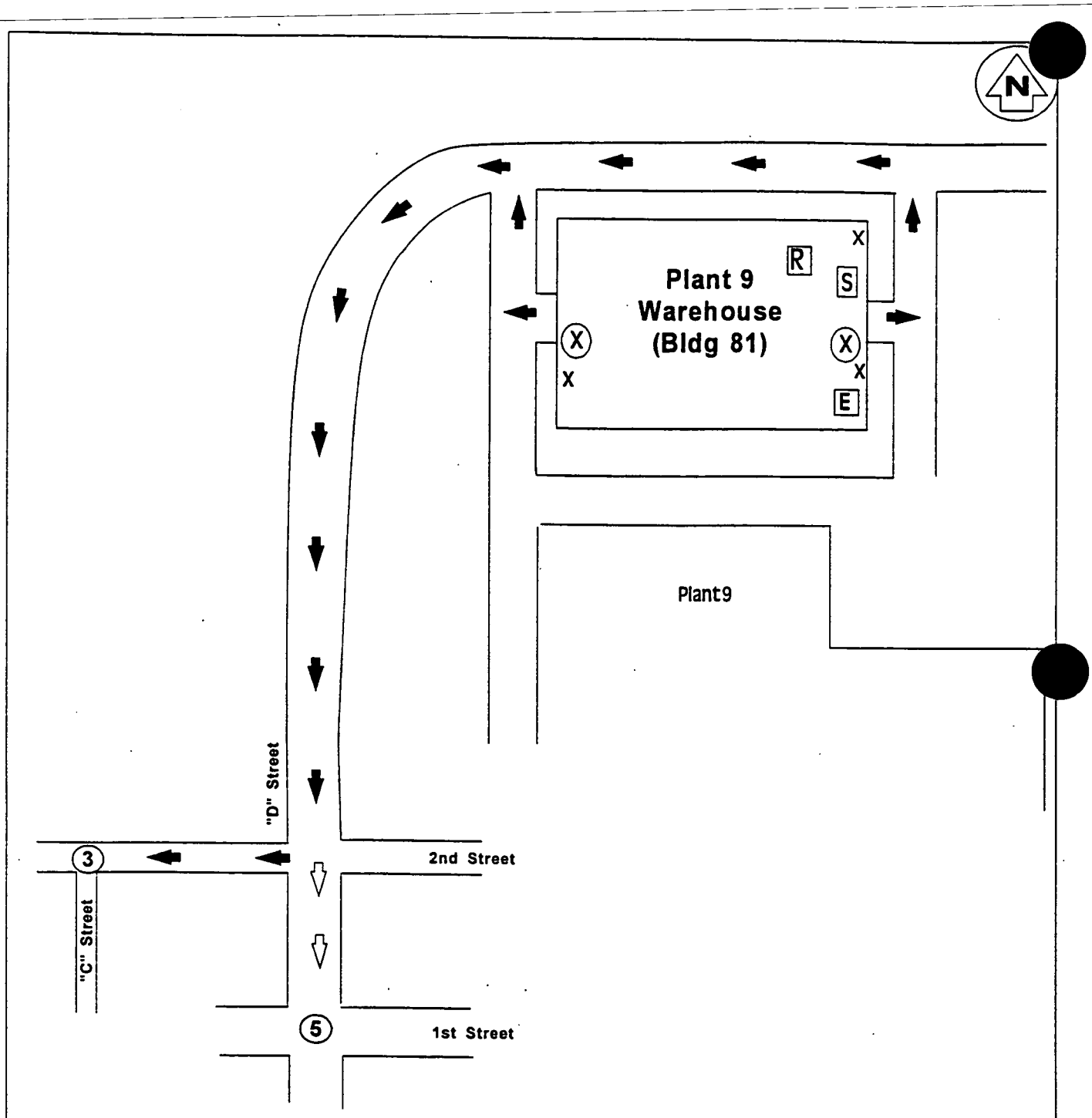
- Manual Fire Alarms
  1) Inside East wall
  2) Inside West wall

- Fire Extinguishers
  1) 10# ABC East personnel door
  2) 10# ABC West personnel door
  3) 10# ABC in riser room

- Eye Wash/Safety Shower Station
  1) At Southeast corner of building near office (Portable Unit)

- Spill Cleanup Equipment and Respirator Cabinet
  2) At East end North of roll up door

000358



PLANT 9 WAREHOUSE (BLDG. 81)
HWMU #35

(5) = rally point

S = spill cleanup equipment

R = respirator cabinet

E = eye wash / safety shower

X = fire extinguisher

(X) = manual fire alarm

= primary route

= alternate route

HWMU No. 36 - STORAGE PAD NORTH OF PLANT 6

This area is North of and adjacent to Plant 6. Containers of hazardous waste are no longer stored in this unit.

Personnel should evacuate to Rally Point No. 3. Rally Point No. 3 is located at the intersection of 2nd Street and "C" Street. Movement is west on 2nd Street to the intersection of "C" Street.

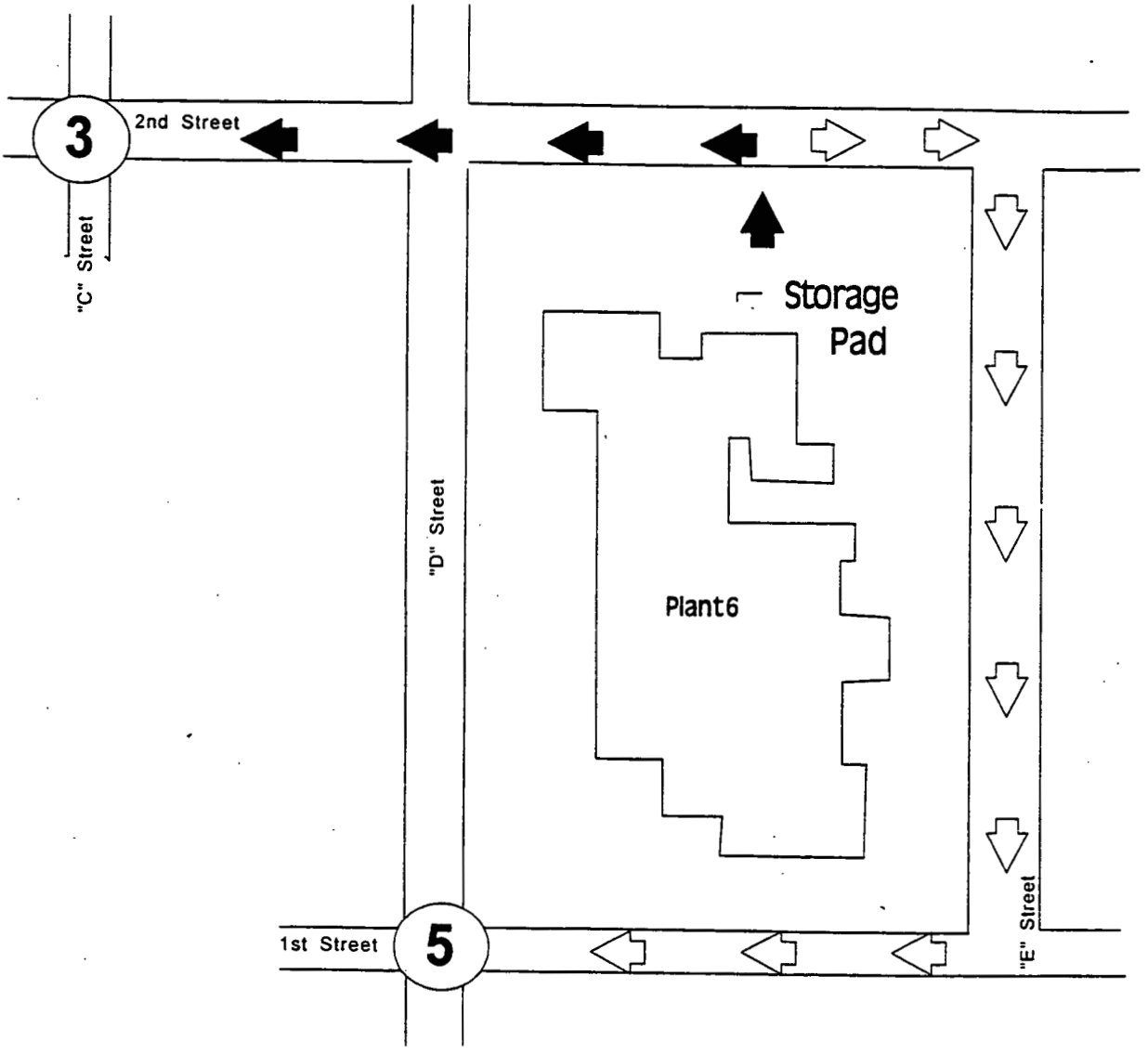
The Alternate Rally Point is No. 5. Rally Point is located at the intersection of 1st Street and "D" Street. Movement is east on 2nd Street to south on "E" Street, then west on 1st Street to the intersection of "D" Street.

There is no safety equipment assigned to this HWMU. Those personnel desiring access to this unit are required to have a two-way radio for emergency notification purposes.

~~The following is a list of safety equipment assigned to this unit:~~

- ~~Manual Fire Alarm~~
  - ~~1) Inside Plant 6 Northwest corner near Restroom~~

- ~~Fire Extinguisher~~
  - ~~1) 10# ABC First Floor Northwest corner next to fire alarm~~



STORAGE PAD NORTH OF PLANT 6
HWMU #36

= primary route

= alternate route

3 = rally point

HWMU No. 37 - PLANT 6 WAREHOUSE (BLDG. 79)

The Plant 6 Warehouse is a pre-engineered, ribbed, unheated building covered by metal roofing. Plant 6 Warehouse is designed to store hazardous waste with and without free liquids and combustible liquids.

Personnel should evacuate to Rally No. 5. Rally Point No. 5 is located at the intersection of 1st Street and "D" Street. Movement is south on "E" Street and west on 1st Street to the intersection of "D" Street.

The Alternate Rally Point is No. 3. Rally Point No. 3 is located at the intersection of 2nd Street and "C" Street. Movement is north on "E" Street to 2nd Street, and west on 2nd Street to the Point.

The following is a list of safety equipment assigned to this unit:

- Manual Fire Alarms
  1) By Southwest entrance door
  2) By Northwest entrance door
  3) North entrance door at Loading Dock
  4) Inside Southeast Sprinkler Control Room

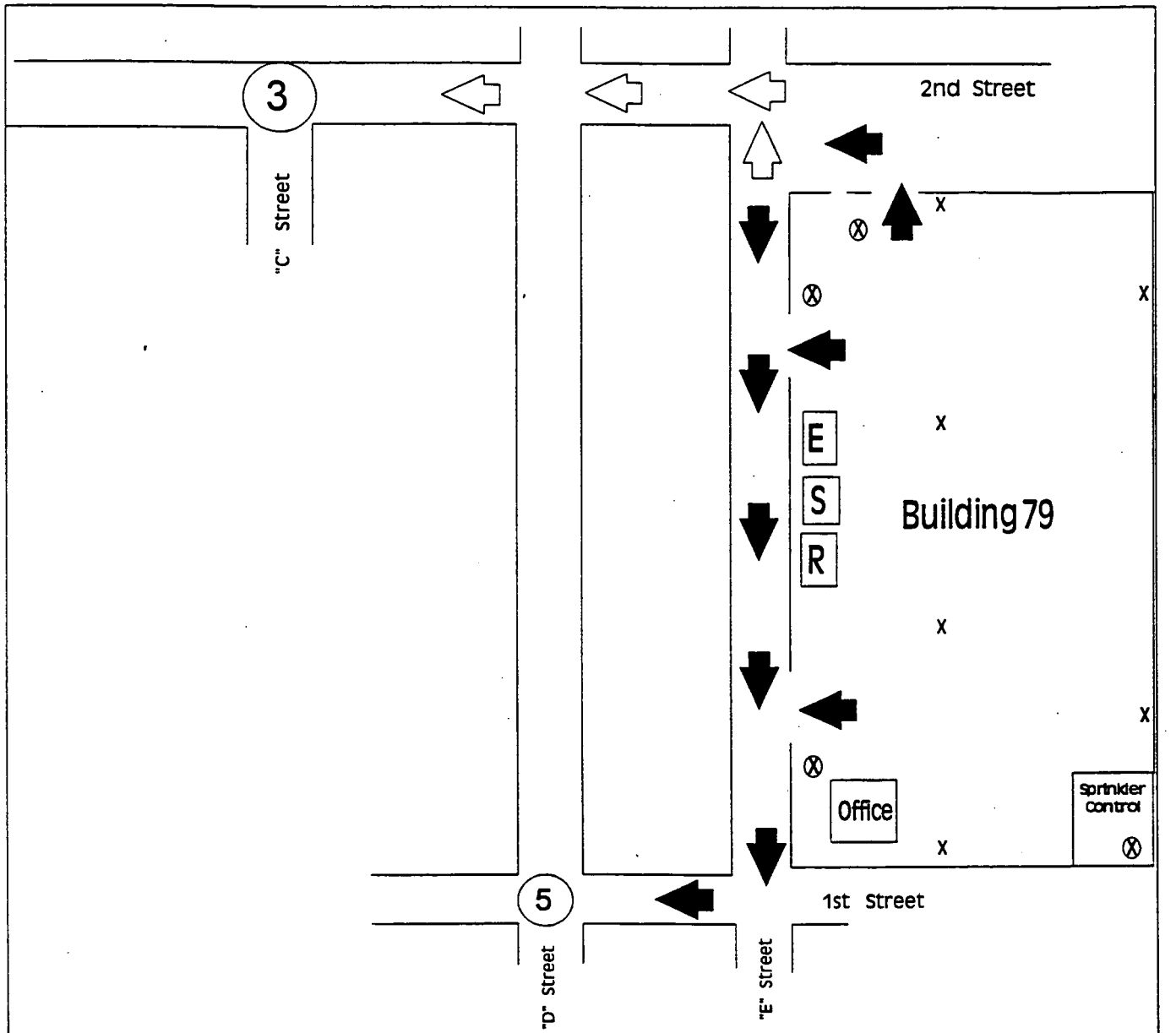
- Fire Extinguishers
  1) 20# ABC on the North wall in the center
  2) 20# ABC on the South Wall in the center
  3) 20# ABC on the East wall near the North end
  4) 20# ABC on the East wall near the South end
  5) 20# ABC on a column in the center of building (towards North end)
  6) 20# ABC on a column in the center of building (towards South end)
  ~~7) 10# ABC in riser room (Southwest corner)~~

HWMU No. 37 - PLANT 6 WAREHOUSE (BLDG. 79)

- Eye Wash/Safety Shower Station
  1) At West wall near center

- Respirator Cabinet
  1) At West wall near center

- Spill Cleanup Equipment (Middle of West wall)
  1) Pigs and absorbent pads
  2) All purpose absorbent material
  3) Six 55-gallon Salvage drums
  4) Six 85-gallon overpack salvage drum
  5) Cleaning utensils (shovels and brooms)
  6) Portable HEPA vacuum industrial cleaner
  7) Drum straps



PLANT 6 WAREHOUSE (BLDG. 79)
HWMU #37

X = fire extinguisher

⊗ = manual fire alarm

⇦ = alternative route

◀ = primary route

5 = rally point

R = respirator cabinet

E = eye wash / safety shower

S = spill cleanup equipment

HWMU No. 38 - HF TANK CAR

The HF Tank Car HWMU is located on the railroad spur immediately off the Northwest corner of Building 12A. The acid has been removed and treated and the tank car has been cut into small pieces for scrap. This unit has been closed in accordance with OEPA letter dated November 27, 1995. ~~The HF Tank Car (# ORQX177501) has been moved from that location to the spur west of the Tank Farm in order to provide a secondary containment sump. Currently this tank car contains waste dilute hydrofluoric acid (DHF).~~

~~**Personnel should evacuate to Rally Point No. 3. Rally Point is located at the intersection of 2nd Street and "C" Street. Movement is south to 2nd Street and east on 2nd Street to the intersection of "C" Street.**~~

~~**The Alternate Rally Point is No. 6. Rally Point No. 6 is located north of the West Water Tower, at the Waste Pit Area access gate. Movement is south to 2nd Street then west to the rally point.**~~

~~The following is a list of safety equipment assigned to this unit:~~

~~• Eye Wash/Safety Shower Station~~

~~1) Yellow painted walk-in unit between track and Tank Farm~~

~~Those personnel desiring access to this HWMU are required to have a two-day radio for emergency notification purposes.~~

~~• Spill Cleanup Equipment~~

~~1) At the south end of Tank Farm secondary containment.~~

HWMU No. 39 - CLEARWELL

The Clearwell is a surface impoundment located West of the Production Area in the Waste Pit Area. This has been removed from the HWMU list.

HWMU No. 40 - BIO-SURGE LAGOON

This unit is a surface impoundment located west of the Production Area and was constructed in September 1986. This has been removed from the HWMU list.

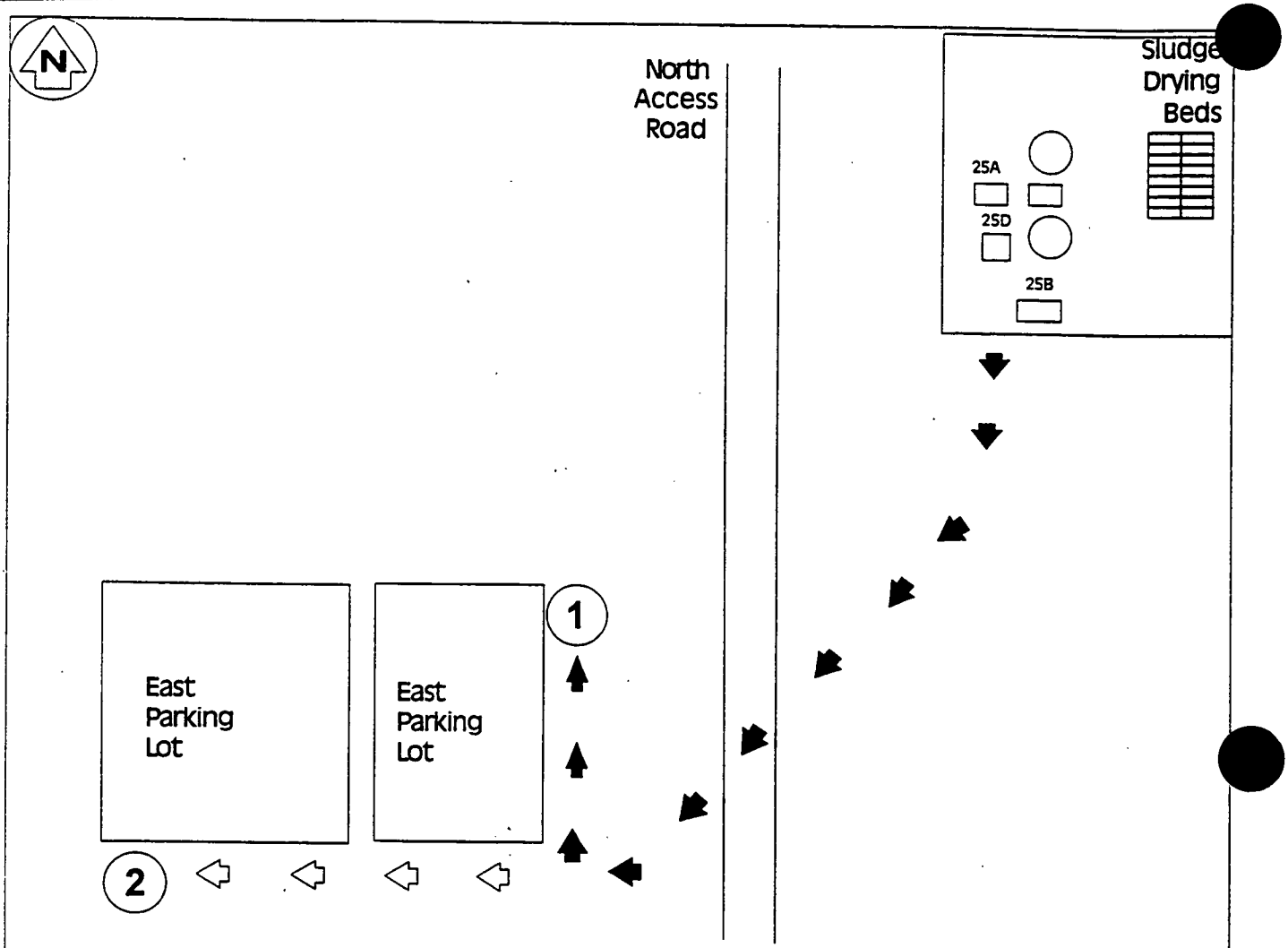
HWMU No. 41 - SLUDGE DRYING BEDS

The Sludge Drying Beds are surface impoundments that are part of the sanitary wastewater treatment system and are located east of the Production Area.

Personnel should evacuate to Rally Point No. 1. Rally Point No. 1 is located in the Northeast corner of the FEMP East Parking Lot. Movement is south and west on the Sewage Treatment Plant access road to the FEMP East Parking Lot, then north to Rally Point # 1.

The Alternate Rally Point is No. 2. Rally Point No. 2 is located at the West side of the FEMP West Parking Lot, just north of the Stormwater Retention Basin. Movement from Rally Point No. 1 is west through the parking lot to Rally Point No. 2.

There is no safety equipment assigned to this unit. Those personnel desiring access to this unit are required to have a two-way radio for emergency notification purposes.



SLUDGE DRYING BEDS
HWMU #41

1 = rally point

⇦ = alternate evacuation route

⬅ = primary evacuation route

HWMU No. 42 - WASTE PIT NO. 5

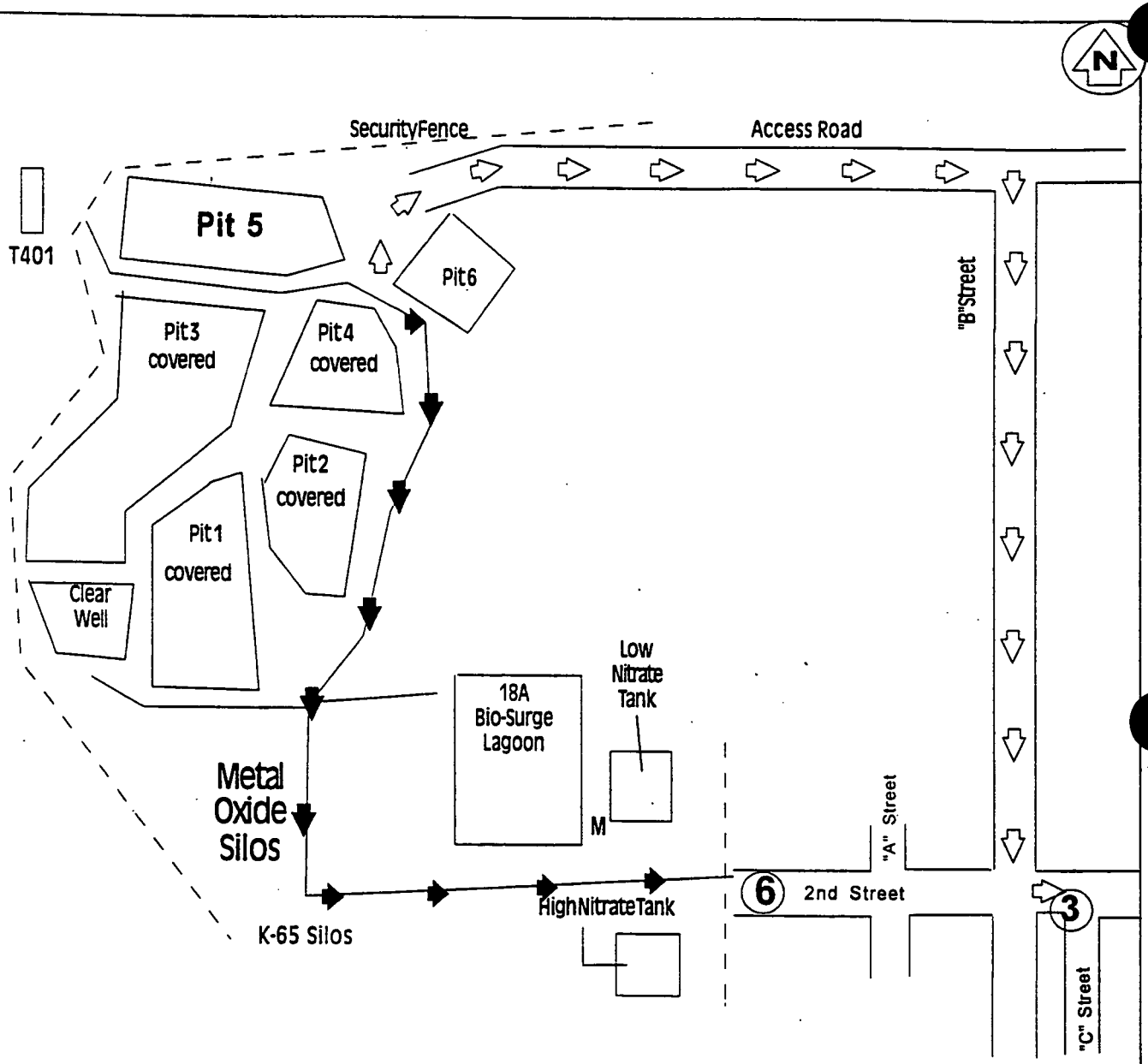
Waste Pit No. 5 is a land disposal unit in the Waste Pit Area northwest of the Production Area which covers 4.1 acres.

Personnel should evacuate to Rally Point No. 6. Rally Point No. 6 is located North of the West Water Tower, at the Waste Pit Area access gate. Movement is southeast to 2nd Street and then east to the Waste Pit Area access gate.

~~**The Alternate Rally Point is No. 7. Rally Point No. 7 is located on "B" Street west of the Boiler Plant. Movement is around Pit 6 on the access road, then east to "B" Street and south on "B" Street to the Point.**~~

The Alternate Rally Point is No. 3. Rally Point No. 3 is located at the intersection of 2nd Street and "C" Street. Movement is north past Pit 6 on the access road, then east to "B" Street, south on "B" Street to 2nd Street and east on 2nd Street to the intersection of "C" Street.

There is no safety equipment assigned to this unit. Those personnel desiring access to this unit are required to have a two-way radio for emergency notification purposes.



WASTE PIT NO. 5
HWMU #42

⇨ = alternate evacuation route

➡ = primary evacuation route

M = Methanol Tank

(6) = rally point

HWMU No. 43 - LIME SLUDGE PONDS

The Lime Sludge Ponds are immediately west of the Production Area. This unit has been removed from the HWMU list.

HWMU No. 44 - COAL PILE RUNOFF BASIN

The Coal Pile Runoff Basin is east of the Boiler Plant. This unit has been removed from the HWMU list.

8018

HWMU No. 45 - UST NO. 5

UST No. 5 is East of Building 31. This unit has been removed from the HWMU list.

HWMU No. 46 - URANYL NITRATE TANKS (NFS STORAGE AREA)

This unit consists of five above ground UNH Tanks. ~~which contain corrosive material.~~ These tanks are empty.

Personnel should evacuate to Rally Point 6. Rally Point 6 is located north of the West Water Tower, at the Waste Pit Area access gate. Movement is west on Second Street to the Waste Pit access gate.

The Alternate Rally Point is No. 3. Rally Point No. 3 is located at the intersection of 2nd Street and "C" Street. Movement is east on 2nd Street to the Point.

There is no safety equipment assigned to this HWMU. Those personnel desiring access to this HWMU are required to have a two-way radio for emergency notification purposes. This area is restricted from entry unless personnel are wearing protective clothing due to asbestos contamination.

~~The following is a list of safety equipment assigned to this HWMU:~~

~~• Fire Extinguisher~~

~~1) 10# ABC outside, on South side of Pump House 2E~~

~~• Eye Wash/Safety Shower Stations~~

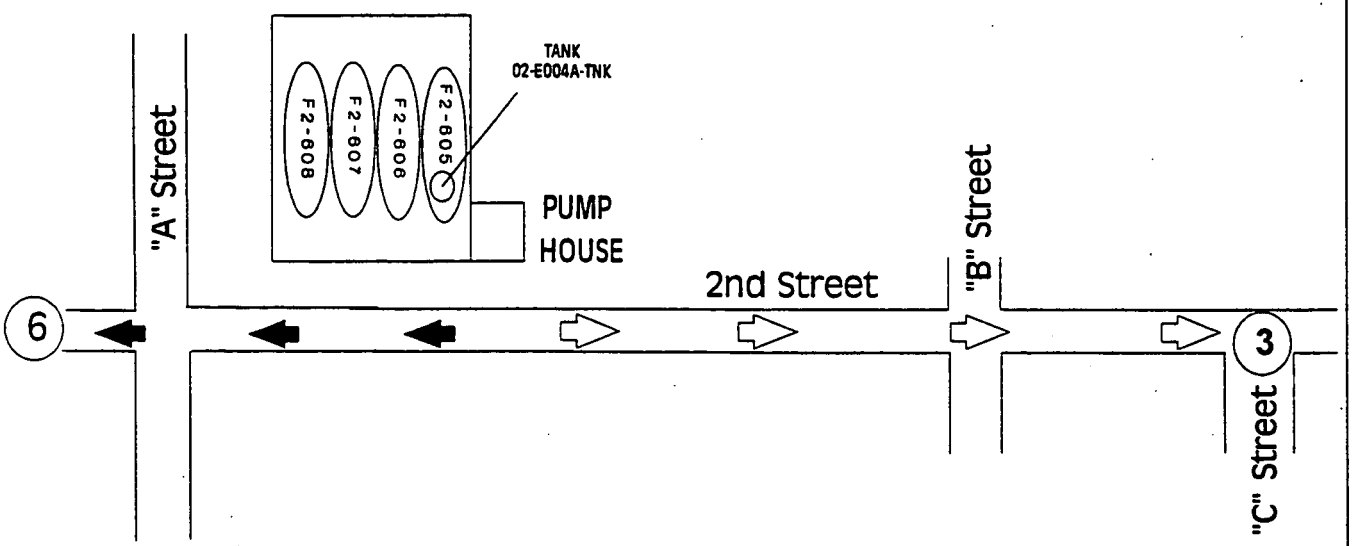
~~1) Outside, on South side of Pump House 2E~~

~~• Spill Cleanup Equipment~~

~~1) Outside, by South side of Pump House 2E~~

~~• Portable Eyewash/Safety Showers~~

~~Portable eyewash/safety showers are to be placed in areas at HWMU 46 where hazardous work is occurring.~~



URANYL NITRATE TANKS
(NFS STORAGE AREA)
HWMU #46

= primary evacuation route

= alternate evacuation route

6 = rally point

HWMU No. 47 - URANYL NITRATE TANKS (NORTH OF PLANT 2)

This unit consists of three above ground UNH Tanks. ~~which contain corrosive material.~~ These tanks are empty.

Personnel should evacuate to Rally Point No. 6. Rally Point No. 6 is located north of the West Water Tower, at the Waste Pit Area access gate. Movement is west on Second Street to the Waste Pit access gate.

The Alternate Rally Point is No. 3. Rally Point No. 3 is located just east of the intersection of 2nd Street and "B" Street. Movement is east on 2nd Street to the Rally Point.

There is no safety equipment assigned to this HWMU. Those personnel desiring access to this HWMU are required to have a two-way radio for emergency notification purposes. This area is restricted from entry unless personnel are wearing protective cloting due to asbestos contamination.

~~The following is a list of safety equipment assigned to this HWMU:~~

~~• Fire Extinguisher~~
~~1) 10# ABC on post, just north of (outside) containment area~~

~~• Eye Wash/Safety Shower Station~~

~~• Heated Eyewash, Mounted~~

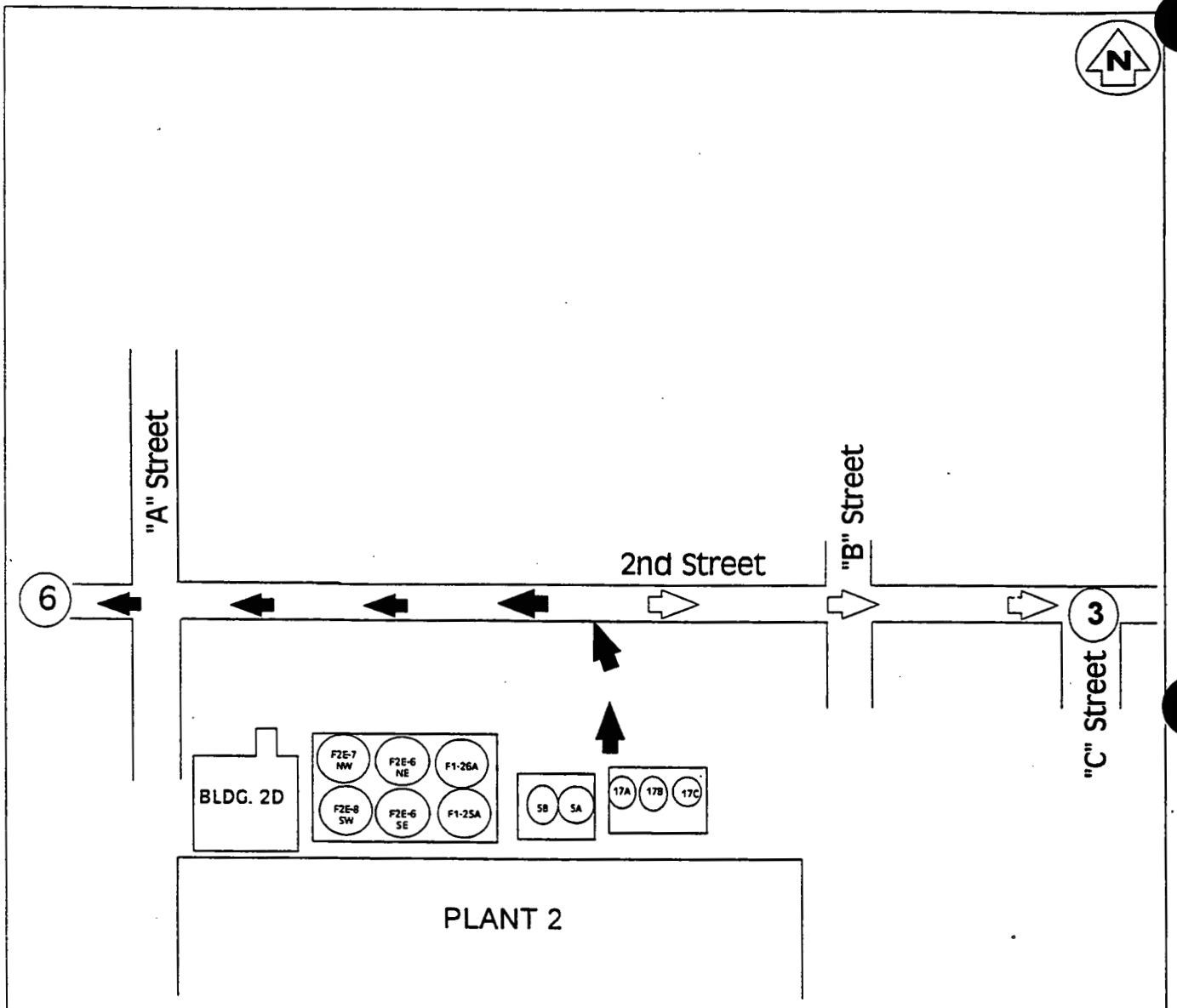
~~• 1) North of HWMU 47, outside secondary containment~~

~~• Spill Cleanup Materials~~
~~1) North of HWMU 47, outside secondary containment~~

~~HWMU No. 47 - URANYL NITRATE TANKS (NORTH OF PLANT 2)~~

- ~~Portable Eyewash/Safety Showers~~

~~Portable eyewash/safety showers are to be placed in areas at HWMU 47 where hazardous work is occurring.~~



URANYL NITRATE TANKS
(NORTH OF PLANT 2)
HWMU #47

= primary evacuation route

= alternate evacuation route

6 = rally point

HWMU No. 48 - URANYL NITRATE TANKS (SOUTHEAST OF PLANT 2)

This unit is near the southeast corner of Plant 2 and consists of one above ground storage tank. ~~containing corrosive material.~~ This tank is empty.

Personnel should evacuate to Rally Point No. 6. Rally Point No. 6 is located north of the West Water Tower, at the Waste Pit Area access gate. Movement is west on 102nd Street to "A" Street, North on "A" Street to 2nd Street, then west on 2nd Street to the Waste Pit Area access gate.

The Alternate Rally Point is No. 3. Rally Point No. 3 is located just east of the intersection of 2nd Street and "B" Street. Movement is east to "B" Street, north on "B" Street to 2nd Street, and east on 2nd Street to the Rally Point.

There is no safety equipment assigned to this HWMU. Those personnel desiring access to this HWMU are required to have a two-way radio for emergency notification purposes. This area is restricted from entry unless personnel are wearing protective clothing due to asbestos contamination.

~~The following is a list of safety equipment assigned to this HWMU:~~

~~• Manual Fire Alarm~~

~~1) At East end of Building 2A between pedestrian door and roll up door~~

~~• Fire Extinguisher~~

~~1) BC Outside Building 2A on South wall, west of HWMU 48~~

~~• Eye Wash/Safety Shower Station~~

~~• Heated Eyewash, Mounted~~

~~1) South of HWMU 48, Outside secondary containment~~

~~HWMU No. 48 - URANYL NITRATE TANKS (SOUTHEAST OF PLANT 2)~~

- ~~Portable Eyewash/Safety Showers~~

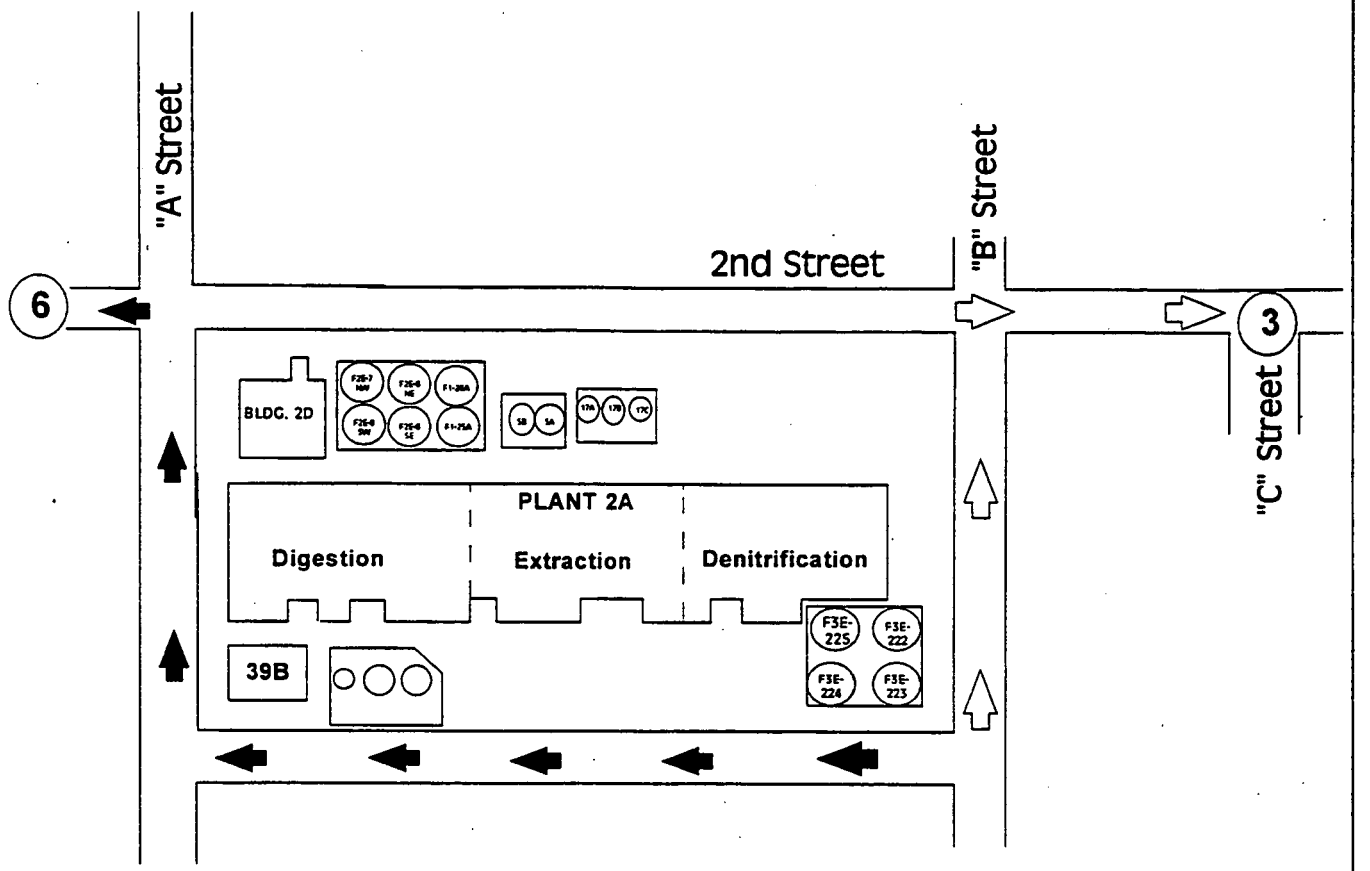
~~Portable eyewash/safety showers are to be placed in areas at HWMU 48 where hazardous work is occurring.~~

- ~~Spill Cleanup Material~~

~~1) South of HWMU 48, Outside secondary containment~~

- ~~Respirator Cabinet~~

~~1) At change out cabinet in nearby trailer~~



URANYL NITRATE TANKS
(SOUTHEAST OF PLANT 2)
HWMU #48

= primary evacuation route

= alternate evacuation route

6 = rally point

HWMU No. 49 - URANYL NITRATE TANKS (DIGESTION AREA)

This unit consists of eight above ground steel tanks located within Plant 2 at the western end in the Digestion Area. These tanks are empty.

Personnel should evacuate to Rally Point No. 6. Rally Point No. 6 is located north of the West Water Tower, at the Waste Pit Area access gate. Movement is west out of Plant 2 to "A" Street, north on "A" Street to 2nd Street and then west on 2nd Street to the Waste Pit Area access gate.

The alternate rally point is No. 3. It is located just east of the intersection of 2nd Street and "B" Street. Movement is north to 2nd Street, and east on 2nd Street to the Rally Point.

There is no safety equipment assigned to this HWMU. Those personnel desiring access to this HWMU are required to have a two-way radio for emergency notification purposes. This area is restricted from entry unless personnel are wearing protective clothing due to asbestos contamination. ~~Use safety equipment in adjacent Extraction Area east of this HWMU. Fire Extinguishers and Safety Showers are maintained in the Digestion Area.~~

~~The following is a list of safety equipment assigned to this unit:~~

- ~~Manual Fire Alarms~~
  - ~~1) On East wall between Digestion and Extraction Areas~~
  - ~~2) At West end of Digestion Area~~

- ~~Fire Extinguishers~~
  - ~~1) 10# ABC First Floor, west end of Digestion Area, by Column B1~~
  - ~~2) 10# ABC First Floor, in Digestion Area, by Column C1~~
  - ~~3) 10# ABC First Floor in Digestion Area east of Column C7~~
  - ~~4) 10# ABC First Floor in Extraction Area near Column C8~~
  - ~~5) 10# ABC Second Floor by Column B6~~

~~HWMU No. 49 - URANYL NITRATE TANKS (DIGESTION AREA)~~

~~6) ABC Second Floor, west of Digestion Area, near Column C27~~

~~7) ABC Second Floor, east of Digestion Area~~

- ~~Eye Wash/Safety Shower Stations~~

- ~~Heated Eyewash~~

~~1) Located on the north side of Plant 2/3, west of Tank F1-26~~

- ~~Portable Eyewash/Safety Showers~~

~~Portable eyewash/safety showers are to be placed in areas at HWMU-49 where hazardous work is occurring.~~

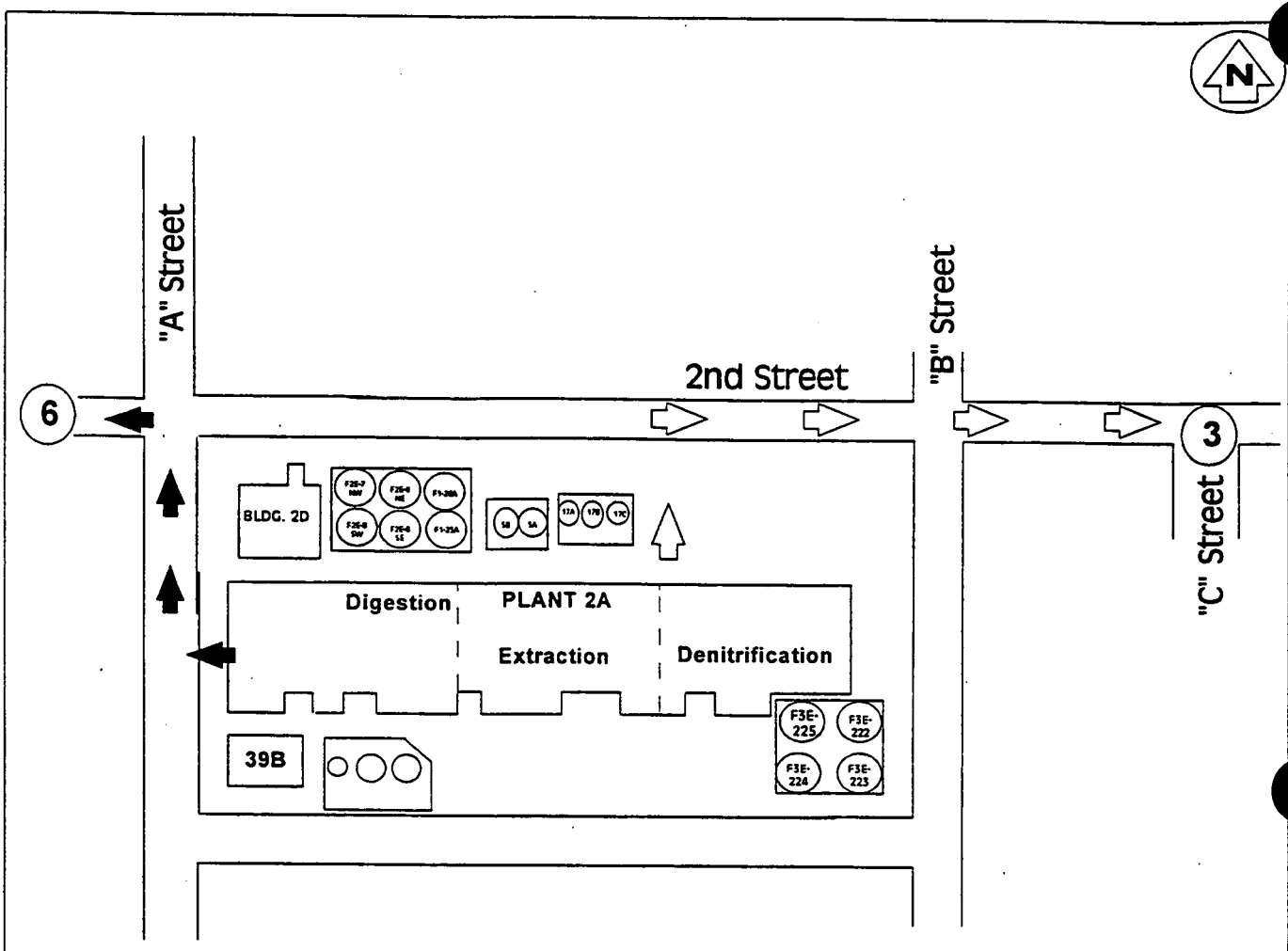
- ~~Spill Cleanup Equipment~~

~~1) At East end of Digestion Area east of Column C7~~

~~2) Center of Extraction Area, near Column C9~~

- ~~Respirator Cabinet~~

~~1) At change out cabinet in nearby trailer~~



URANYL NITRATE TANKS
(DIGESTION AREA)
HWMU #49

= primary evacuation route

= alternate evacuation route

6 = rally point

HWMU No. 50 - URANYL NITRATE TANKS (RAFFINATE BUILDING)

This unit consists of four storage tanks located on the Eastern bay and South central area of Building 3E. These tanks are empty.

Personnel should evacuate to Rally Point No. 8. Rally Point No. 8 is located at the intersection of 1st and "B" Street. Movement is east on 101st Street to "B" Street then south on "B" Street to the intersection of 1st Street.

The Alternate Rally Point is No. 6. Rally Point No. 6 is located North of the West Water Tower. Movement is west to "A" Street, north on "A" Street to 2nd Street, then west to the point.

There is no safety equipment assigned to this HWMU. Those personnel desiring access to this HWMU are required to have a two-way radio for emergency notification purposes. This area is restricted from entry unless personnel are wearing protective clothing due to asbestos contamination.

~~The following is a list of safety equipment assigned to this unit:~~

~~• Manual Fire Alarm~~

~~1) North wall by entrance~~

~~• Fire Extinguishers~~

~~1) 15# CO_2 on entrance wall to East bay near tanks F1-301, 302, and 303~~

~~• Eyewash/Safety Shower Stations~~

~~• Heated Eyewash~~

~~1) Near the center of building, fastened to column~~

~~HWMU No. 50 - URANYL NITRATE TANKS (RAFFINATE BUILDING)~~

- ~~Portable Eyewash/Safety Showers~~

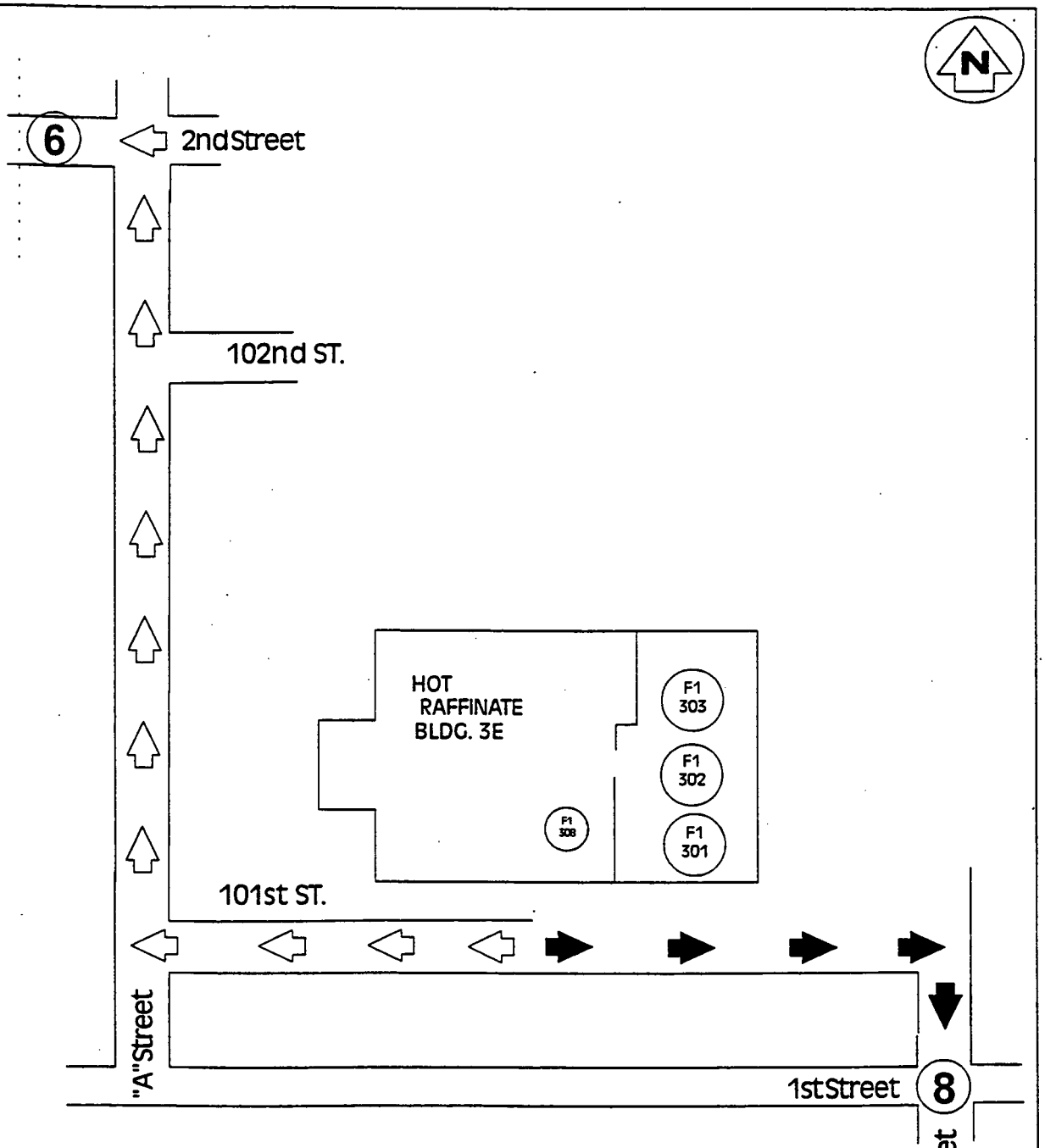
~~Portable eyewash/safety showers are to be placed in areas at HWMU 50 where hazardous work is occurring.~~

- ~~Spill Cleanup Equipment~~

~~1) Outside by entrance door~~

- ~~Respirator Cabinet~~

~~1) At change out cabinet in nearby trailer~~



URANYL NITRATE TANKS
(RAFFINATE BUILDING)
HWMU #50

6 = Rally Point

= Primary Evacuation Route

= Alternate Evacuation Route

HWMU No. 51 - EXPERIMENTAL TREATMENT FACILITY (ETF)

This unit was located south of the Waste Pit No. 5 Access Road, near the Southwestern corner of Waste Pit No. 5. It has been removed.

HWMU No. 52 - NORTH AND SOUTH SOLVENT TANKS (PILOT PLANT)

~~This unit consists of two above ground storage tanks (Tanks T1S & T2S) located southwest of the Pilot Plant.~~ This unit has been closed in accordance with OEPA letter dated June 24, 1996.

~~Personnel should evacuate to Rally Point No. 8. Rally Point No. 8 is located at the intersection of 1st and "B" Street. Movement is north to 1st Street, then east to "B" Street.~~

~~The Alternate Rally Point is No. 6. Rally Point No. 6 is located north of the West Water Tower, at the Waste Pit Area access gate. Movement is north to "A" Street, then north on "A" Street to 2nd Street, then west on 2nd Street to the rally point.~~

~~The following is a list of safety equipment assigned to at this unit:~~

~~• Manual Fire Alarm~~
~~1) On outside South wall of Pilot Plant near center of building~~
~~2) On outside South end of East wall of Building 13B~~

~~• Fire Extinguishers~~
~~1) 10# ABC outside Southwest Solvent Tanks Berm~~

~~• Eye Wash/Safety Shower Station~~
~~1) Outside on South wall of Pilot Plant near West end~~

~~• Safety Shower Station~~
~~1) Outside on West wall of Pilot Plant~~

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~~HWMU No. 52 - NORTH AND SOUTH SOLVENT TANKS (PILOT PLANT)~~

~~• Spill Cleanup Equipment~~

~~1) East of Sump House (Building 13C)~~

~~Those personnel desiring access to this HWMU are required to have a two-way radio to facilitate emergency notification.~~

HWMU No. 53 - SAFE GEOMETRY DIGESTION SUMP

The Safe Geometry Digestion Sump is located on the second floor of Plant 1 in Building 1A. Closed in accordance with meeting with OEPA on March 2, 1995.

HWMU No. 54 - TANK FOR BULK STORAGE OF THORIUM NITRATE SOLUTION, T-2

This unit is an above ground storage tank located West of the Pilot Plant. The tank is empty.

Personnel should evacuate to Rally Point No. 8. Rally Point No. 8 is located at the intersection of 1st and "B" Street. Movement is north to 1st Street, then east to "B" Street.

The Alternate Rally Point is No. 6. Rally Point No. 6 is located north of the West Water Tower, at the Waste Pit Area access gate. Movement is north on "A" Street to 2nd Street, then west on 2nd Street to the rally point.

There is no safety equipment assigned to this HWMU. Those personnel desiring access to this HWMU are required to have a two-way radio for emergency notification purposes.

~~The following is a list of safety equipment assigned to this unit.~~

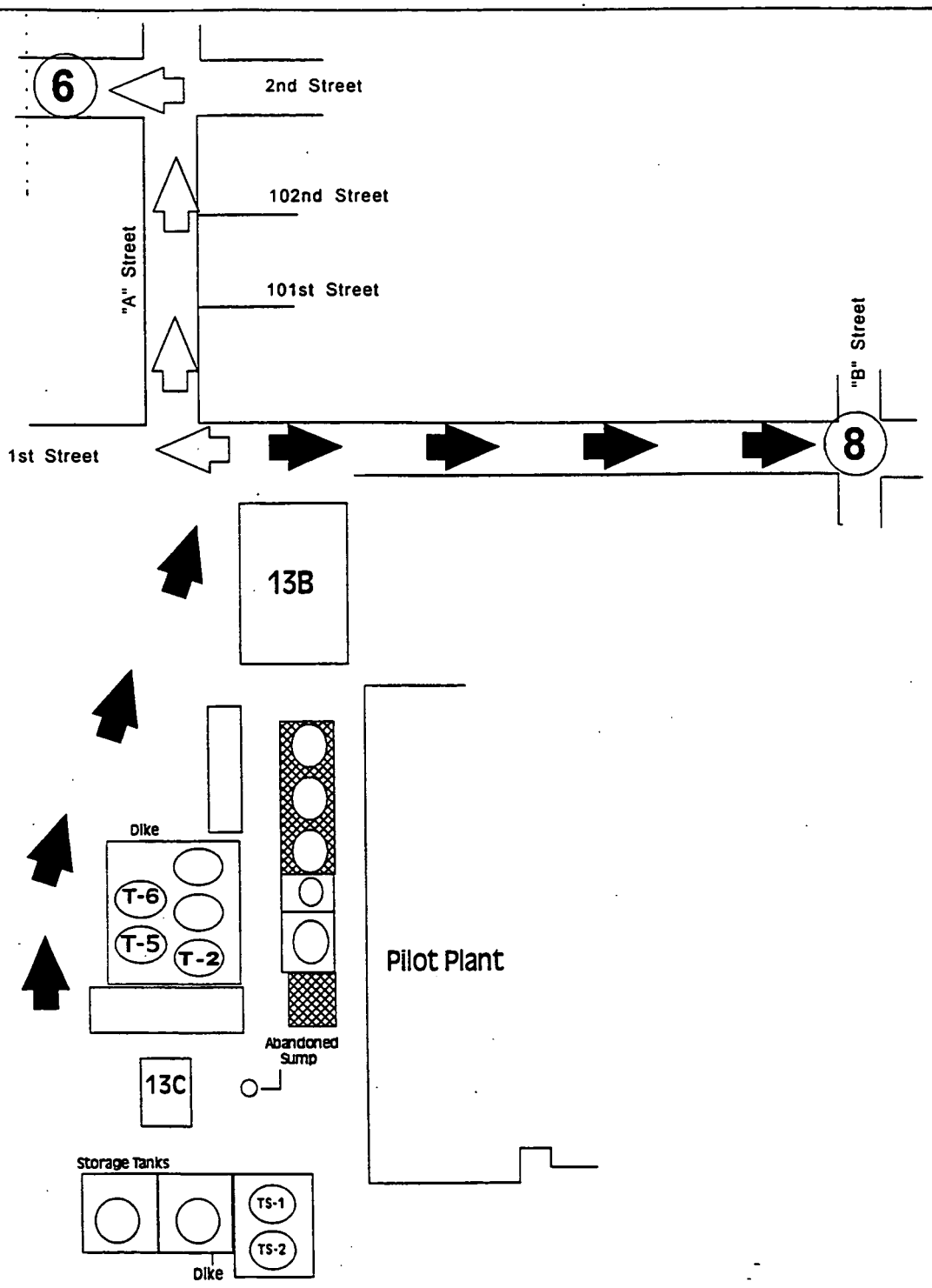
~~• Manual Fire Alarms~~
~~1) Outside on South wall of Pilot Plant near center of building~~
~~2) Outside at South end of East wall of Building 13B~~

~~• Fire Extinguishers~~
~~1) 10# ABC at West Solvent Tanks Berm~~

~~• Eye Wash/Safety Shower Station~~
~~1) Two portable units inside the Sump House (Building 13C)~~

~~• Safety Shower Station~~

~~• Spill Cleanup Equipment~~
~~1) East of Building 13C~~



THORIUM NITRATE STORAGE TANK, T-2

HWMU #54

= Alternate Evacuation Route = Primary Evacuation Route

ATTACHMENT G-3

Attachment G-3 contains the following updated Mutual Aid Agreements:

Crosby Township, Ambulance Service and Fire Protection, January 31, 1994

Ross Township Fire Department, June 4, 1996

-8018

CFF, CAC

MUTUAL AID AGREEMENT
FOR
AMBULANCE SERVICE AND FIRE PROTECTION

THIS AGREEMENT, on this 31st day of January, 1994 by and between Fernald Environmental Restoration Management Corporation hereinafter called the "Contractor" or "FERMCO", the United States of America, hereinafter called the "Government", represented by the Department of Energy, hereinafter called the "DOE", and the Crosby Township Fire Department which maintains fire protection and ambulance facilities in Crosby Township hereinafter called the "Fire Service".

WITNESSETH THAT:

WHEREAS, Public Law 46, 84th Congress (Title 42 U.S. Code Section 1856), authorizes agencies of the United States of America to enter into reciprocal agreements with public to private corporations or associations for mutual aid in furnishing fire protection; and

WHEREAS, the Government and the Fire Service may require emergency fire protection assistance and/or ambulance assistance; and

WHEREAS, the DOE'S, Environmental Restoration Management Contractor, FERMCO, for the Fernald Environmental Management Project located near Fernald, Ohio, hereinafter called the "FEMP" is authorized to render fire protection and emergency ambulance assistance to the Fire Service on behalf of the Government; and

WHEREAS, the Fire Service is authorized to render fire protection assistance and emergency ambulance assistance to the FEMP; and

NOW, THEREFORE, the parties do mutually agree as follows:

A. FIRE PROTECTION

1. The fire protection areas covered by this Agreement are the community of Crosby Township, and the FEMP, but assistance contemplated by the Agreement shall be rendered only to such areas as are normally afforded fire protection by each party.

2. The fire protection assistance to be rendered by the Government under this Agreement will be furnished through the use of Government-owned fire equipment at the FEMP operated by the Contractor.

3. Requests for assistance on behalf of the Government will be on a automatic response basis via a dispatch from the Hamilton County Communication Center.

4. Requests for assistance on behalf of the Fire Service will also be

on an automatic response basis via a dispatch from the Hamilton County Communication Center.

5. Both the Contractor and the Fire Service reserve the right to determine the extent of the assistance that either will render to the other in response to requests for assistance, including the right to refuse any assistance to the other, when, in the opinion of the senior fire fighting official on duty, fire protection needs of the Government installation or the Fire Service from which aid is requested are such that equipment or personnel may not be safely released for service elsewhere.

6. Both the Contractor and the Fire Service reserve the right to recall at any time equipment and/or personnel dispatched to the other when, in the opinion of the senior fire fighting official on duty, protection needs of the Government installation or the Fire Service from which such equipment and/or personnel were dispatched so require.

7. It is agreed that equipment and personnel dispatched in response to a request made hereunder will operate under the immediate supervision and control of the senior fire fighting official in charge of the dispatched equipment and personnel, but under the general direction of the senior fire fighting official on duty at the Government installation or the Fire Service making such a request.

8. Except as expressly provided in paragraph 10 below, no compensation shall be paid either by FERMCO or the Government or by the Fire Service for fire protection assistance rendered to it under this Agreement.

9. FERMCO and the Government covenant and agree that no claim for compensation will be made by it against the Fire Service for any loss damage, personal injury, or death occurring in consequence of fire protection assistance rendered under this Agreement, and all such rights or claims are hereby expressly waived.

10. The Fire Service pursuant to Public Law 498, 93rd congress (Title 15 U.S. Code, Section 2210), and Regulations promulgated thereunder (Federal Register, Vol. 42, No. 138, p. 36954, July 18, 1977), may file a claim with the Administration for the amount of direct expenses and direct losses incurred by the Fire Service as a result of fighting a fire subject to this Agreement, to the extent that the amount of such direct expenses and direct losses exceeds the value of any services or payments provided by the Government to the Fire Service. The Fire Service covenants and agrees that no other claim for compensation, except as expressly provided herein, will be made by if against the Government or against the Contractor for any loss, damage, personal injury or death occurring in consequence of fire protection assistance rendered under this Agreement, and all such other claims are hereby expressly waived.

11. Fire Service Personnel and equipment dispatched to the FEMP will be monitored by the Contractor prior to leaving the Government installation to determine the level of radioactivity present, if any, on the equipment or the skin or clothing of the personnel. Efforts will be made by the Contractor to reduce Contamination, if present, to a level which is as low as practicable. If Fire Service personnel or equipment become contaminated with radioactive or toxic materials as a direct result of assistance rendered, the Contractor will provide for the decontamination of the equipment (or replacement thereof) or the personnel at no charge to the Fire Service.

B. EMERGENCY AMBULANCE ASSISTANCE

1. In the event of a medical emergency, the Fire Service and FERMCO will exert its best efforts to provide emergency ambulance assistance for the purpose of conveying an injured or ill person or persons to the hospitals or other medical treatment facilities in the Hamilton-Cincinnati areas.

2. Requests for assistance on behalf of the Government will be on an automatic response basis via a dispatch from the Hamilton County Communication Center. Requests for assistance on behalf of the Fire Service will also be on an automatic response basis via a dispatch from the Hamilton County Communication Center.

3. The driver and attendants manning the Fire Service's ambulance shall be members of the Fire Service's Life Squad. The driver and attendants of the Fire Service and FERMCO shall be trained in the operation of the vehicles and performance of life squad emergencies practices in accordance with the laws of the State of Ohio.

4. The emergency ambulance assistance to be rendered by the Government under this Agreement will be furnished through use of Government-owned ambulance equipment at the FEMP operated by the Contractor (Condition No. 3 applies).

5. Persons who are to be transported from the FEMP to hospitals or other medical treatment facilities will be monitored to determine the level of radioactivity present, if any, on their skin or clothing. Efforts will be made by the Contractor to reduce contamination, if present, to a level which is as low as practicable. If serious injuries are present and the need for immediate transport precludes decontamination, appropriate precautionary instruction will be given to drivers, attendants, and medical personnel. Also, appropriate precautions will be taken to prevent contamination of the transport vehicle.

6. There shall be no monetary compensation paid for the emergency ambulance assistance rendered by the Fire Service hereunder; provided, however, if the Fire Service's equipment or supplies become contaminated with radioactive or toxic materials as a direct result of assistance rendered, the Contractor will provide for the decontamination or replacement thereof shall be made at no charge to the Township (Fire Service).

7. FERMCO and the Government covenant and agree that no claim for compensation will be made by it against the Fire Service, and the Fire Service covenants and agrees that no claim for compensation will be made by it against the Government or against the Contractor for any loss, damage, personal injury, or death occurring in consequence of emergency ambulance assistance rendered by the Fire Service under its Agreement. All such rights or claims are hereby expressly waived by both parties of this Agreement.

C. TERM OF AGREEMENT

1. Agreement may be terminated by either party upon 30 days' written notice to the other party, specifying the date of such termination.

D. OFFICIALS NOT TO BENEFIT

1. No member of, or delegate to Congress, or resident commissioner shall be admitted to any share or part of this Agreement or to any benefit. that may arise therefrom, but this provision shall not be construed to extend to this Agreement if made with a corporation for its general benefit.

E. ASSIGNMENT

1. This agreement inure to the benefit of the parties hereto and their respective successors and assigns. Upon completion of the Principal Contract, FERMCO shall assign its rights and obligations under this Agreement to its contractor or to the DOE (Oak Ridge Operations Office), and upon any such hereunder assignment, FERMCO shall be relieved of any further obligations and the DOE (Oak Ridge Operation Office), by signing the approval at the end of this Agreement, agrees to accept the assignment of the rights and obligations of FERMCO, when made.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement as of the day and year first above written.

CROSBY TOWNSHIP FIRE DEPARTMENT

BY: _____

TITLE: Crosby Twp Fire Chief

UNITED STATES OF AMERICA

BY: U. S. DEPARTMENT OF ENERGY

BY: _____

TITLE: _____

APPROVED:

CROSBY TOWNSHIP/TRUSTEE

BY: _____

TITLE: Trustee

FERNALD ENVIRONMENTAL RESTORATION MANAGEMENT CORPORATION

BY: _____

TITLE: _____

AMBULANCE SERVICE
AND
MUTUAL RESPONSE FIRE PROTECTION
AGREEMENT

THIS AGREEMENT, on this 4th day of June, 1996, by and between the United States of America, hereinafter called the "Government," represented by the Department of Energy, hereinafter called the "DOE", and the Ross Township Fire Department which maintains the fire protection and ambulance facilities in Ross Township hereinafter called the "Fire Service".

WITNESSETH THAT:

WHEREAS, Public Law 46, 84th Congress (Title 42 U.S. Code, Section 1856a, and pursuant to DOE Order 151.1, authorizes agencies of the United States of America to enter into reciprocal agreements with public or private corporations or associations for mutual aid in furnishing fire protection, ambulance, and/or hazardous material incident assistance; and

WHEREAS, the Government and the Fire Service may require fire protection, ambulance, and/or hazardous incident assistance; and

WHEREAS, the Fire Service is authorized to render fire protection assistance to the FEMP; and

WHEREAS, the Government may require emergency fire protection assistance and/or ambulance assistance at the FEMP; and

WHEREAS, the Contractor is authorized to render emergency fire protection including emergency hazardous material response and/or ambulance assistance to the Fire Service on behalf of the Government; and

WHEREAS, the Fire Service is authorized to render emergency ambulance assistance to the FEMP and is willing to exert its best efforts to provide such emergency assistance;

NOW THEREFORE, the parties do mutually agree as follows:

A. FIRE PROTECTION

1. The fire protection areas covered by this Agreement are the community of **Ross Township**, and the **FEMP**, but assistance contemplated by the Agreement shall be rendered only to such areas as are normally afforded fire protection by each party.

2. The fire protection assistance to be rendered by the Government under this Agreement will be furnished through the use of Government-owned fire equipment at the **FEMP** operated by the Contractor.

3. Requests for assistance on behalf of the Government will be on an automatic response basis via a dispatch from the Butler County Sheriff's Office (Communication Center).

4. Requests for assistance on behalf of the Fire Service will also be on an automatic response basis or as determined by the Fire Service and Contractor via a dispatch from the Butler County Sheriff's Department (Communications Center).

5. Both the Contractor and the Fire Service reserve the right to determine the extent of the assistance that either will render to the other in response to requests for assistance, including the right to refuse any assistance to the other, when, in the opinion of the senior fire fighting official on duty, fire protection needs of the Government installation or the Fire Service from which aid is requested are such that equipment or personnel may not be safely released for service elsewhere.

6. Both the Contractor and the Fire Service reserve the right to recall at any time equipment and/or personnel dispatched to the other when, in the opinion of the senior fire fighting official on duty, protection needs of the Government installation or the Fire Service from which such equipment and/or personnel were dispatched so require.

7. It is agreed that equipment and personnel dispatched in response to a request made hereunder will operate under the immediate supervision and control of the senior fire fighting official in charge of the dispatched equipment and personnel, but under the general direction of the

senior fire fighting official on duty at the Government installation or the Fire Service making such a request.

8. Except as expressly provided in paragraph 10 below, no compensation shall be paid either by the Government or by the Fire Service for fire protection assistance rendered to it under this Agreement.

9. The Government covenants and agrees that no claim for compensation will be made by it against the Fire Service for any loss, damage, personal injury, or death occurring in consequence of fire protection assistance rendered under this Agreement, and all such rights or claims are hereby expressly waived.

10. The Fire Service pursuant to Public Law 498, 93rd Congress (Title 15 U.S. Code, Section 2210), and Regulations promulgated thereunder (Federal Register, Vol. 42, No. 138, p. 36954, July 18, 1977), may file a claim with the Administrator (Director of the Federal Emergency Management Agency) for the amount of direct expenses and direct losses incurred by the Fire Service as a result of fighting a fire subject to this Agreement, to the extent that the amount of such direct expenses and direct losses exceeds the value of any services or payments provided by the Government to the Fire Service. The Fire Service covenants and agrees that no other claim for compensation, except as expressly provided herein, will be made by if against the Government or against the Contractor for any loss, damage, personal injury or death occurring in consequence of fire protection assistance rendered under this Agreement, and all such other claims are hereby expressly waived.

11. Fire Service personnel and equipment dispatched to FEMP will be monitored by the Contractor prior to leaving the Government installation to determine the level of radioactivity present, if any, on the equipment or the skin or clothing of the personnel. Efforts will be made by the Contractor to reduce contamination, if present, to a level which is as low as practicable. If Fire Service personnel or equipment become contaminated with radioactive or toxic materials as a direct result of assistance rendered, the Contractor will provide for the decontamination of the equipment (or replacement thereof)

or its personnel at no charge to the Fire Service.

B. EMERGENCY AMBULANCE ASSISTANCE

12. In the event of a medical emergency at the FEMP and at the request of the Government, the Fire Service will exert its best efforts to provide emergency ambulance assistance for the purpose of conveying an injured or ill person or persons from the FEMP to hospitals or other medical treatment facilities in the Hamilton-Cincinnati areas.

13. Requests for assistance on behalf of the Government will be on an automatic response basis or as determined by the Fire Service and Contractor via a dispatch from the Butler County Sheriff's Department (Communication Center). Requests for assistance on behalf of the Fire Service will also be on an automatic response basis via a dispatch from the Butler County Sheriff's Department (Communication Center).

14. The driver and attendants manning the ambulance shall be members of the Fire Services' Life Squad and shall be trained in the operation of the vehicle and performance of life squad emergencies practices in accordance with the laws of the State of Ohio.

14A. The emergency ambulance assistance to be rendered by the Government under this Agreement will be furnished through use of Government-owned ambulance equipment at the FEMP operated by the Contractor. (Conditions 13 & 14 applies).

15. Persons who are to be transported from the FEMP to hospitals or other medical treatment facilities will be monitored to determine the level of radioactivity present, if any, on their skin or clothing. Efforts will be made by the Contractor to reduce contamination, if present, to a level which is as low as practicable. If serious injuries are present and the need for immediate transport precludes decontamination, appropriate precautionary instruction will be given to drivers, attendants, and medical personnel. Also, appropriate precautions will be taken to prevent contamination of the transport vehicle.

16. There shall be no monetary compensation paid for the emergency ambulance assistance rendered by the Fire Service hereunder; provided, however, if the Fire Service's equipment or supplies become contaminated with radioactive or toxic materials as a direct result of assistance rendered, the replacement thereof at no charge to the Fire Service.

17. The Government covenants and agrees that no claim for compensation will be made by it against the Fire Service, and the Fire Service covenants and agrees that no claim for compensation will be made by it against the Government or against the Contractor for any loss, damage. personal injury, or death occurring in consequence of emergency ambulance assistance rendered by the Fire Service under its Agreement. All such rights or claims are hereby expressly waived by both parties to this Agreement.

C. TERM OF AGREEMENT

18. This Agreement may be terminated by either party upon 30 days' written notice to the other party, specifying the date of such termination.

D. OFFICIALS NOT TO BENEFIT

19. No member of, or delegate to Congress, or resident commissioner shall be admitted to any share or part of this Agreement or to any benefit that may arise therefrom, but this provision shall not be construed to extend to this Agreement if made with a corporation for its general benefit.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement as of the day and year first above written.

ROSS TOWNSHIP FIRE DEPARTMENT

BY: Dan Young

TITLE: Chief Ross Twp. Life Squad

UNITED STATES OF AMERICA

BY: U.S. DEPARTMENT OF ENERGY

BY: Teddy Patterson TITLE: _____

TITLE: Ross Twp FIRE CHIEF

APPROVED:

ROSS TOWNSHIP/TRUSTEE

BY: Thomas E. Wilson

TITLE: Ross Township Trustee V.P.

ROSS TOWNSHIP CLERK

BY: Judy Huffman

TITLE: Ross Twp. Clerk

ATTACHMENT 2

ATTACHMENT 2

REVISIONS TO SECTION A - PART A PERMIT INFORMATION, SECTION D - PROCESS INFORMATION, AND SECTION G CONTINGENCY PLAN OF THE FEMP'S RCRA PART A/B PERMIT APPLICATION (REVISION 3.0)

REVISED SECTION A - PART A PERMIT INFORMATION SECTIONS	REVISIONS
Section V - Facility Contact	DOE facility contact has been changed to Robert Danner.
Section VII - Operator Information	Revised to reflect company name change from FERMCO to Fluor Daniel Fernald and to include a new company mailing address.
Section X - Other Environmental Permits	NPDES Permit Number has been revised.
Section XIV - Description of Hazardous Wastes	The following EPA waste codes have been added: D030, D032, D033, D038, and U123.
Section XV - Maps Figure A-1	1) Facility location map provided as Figure A-1 has been revised to reflect change in status of FEMP units that have been reclassified or closed. 2) Section XV text regarding the location of on-site drinking wells has been modified - the FEMP has tied in to the public water supply and is no longer using on-site production wells to supply drinking water. 3) Outfall location information has been updated.
Section XVII - Photographs	Photographs of all closed/reclassified units identified in Table A-1 may be removed from this section.
Table A-1 - List of FEMP HWMUs	1) List has been updated to remove FEMP HWMUs that have been reclassified or closed. 2. Status column has been revised to align with classifications developed under Integrated CERCLA/RCRA DF&O.
Attachment 1 - Other Environmental Permits	1) Item #1 - List of Part A Permit Application Revisions has been updated to include latest submittals. 2) Item #1 - List of closure plan submittals has been revised to include additional submittals and to remove closure plans that were withdrawn under the Integrated CERCLA/RCRA DF&O. 3) NPDES permit number has been revised. 4) List of air permits has been updated.

ATTACHMENT 2

REVISIONS TO SECTION A - PART A PERMIT INFORMATION, SECTION D - PROCESS INFORMATION, AND SECTION G CONTINGENCY PLAN OF THE FEMP'S RCRA PART A/B PERMIT APPLICATION (REVISION 3.0)

REVISED SECTION D - PROCESS INFORMATION SECTIONS	REVISIONS
Section D - Text	1) p. 1, 9, 11, 12, 15, 16, 17: The text has been revised to include a description of the upgrades completed at the Plant 8 Warehouse (Building 80) to accommodate the storage of containers of hazardous waste with free liquids. The project included the addition of secondary containment, the installation of two steel ramps and recoating the floor with a polyurethane sealant. The building will also be used for the storage of ignitable liquids. A description of the fire protection system in Building 80 is provided as Attachment 3 to this letter. 2) p. 2, 3: The text has been revised to reflect the incorporation of the FEMP's Materials Reporting System for inventory tracking into the Sitewide Waste Information and Tracking System (SWIFTS), to clarify the applicable regulatory drivers for inventory control, and to include organizational changes. 3) p. 6, 9, 12, 17: The description of activities conducted at Plant 1 Pad under Removal Action #7 (ie. recoating the pad, installing curbs, addition of three tension support structures) has been revised to indicate that this project has been completed. 4) p. 7, 10: The text has been revised to reflect that KC-2 Warehouse (Building 56) will no longer be used for the storage of ignitable liquids. Electricity and water were permanently shut-off at KC-2 Warehouse in January 1997 to prepare for D&D of the Boiler Plant Complex. The feeder line to KC-2 Warehouse runs through this complex. The site building identification number has been added to match the titles in this section. 5) p. 8: A description of the sprinkler system in the Plant 6 Warehouse (Building 79) has been added to the text. The building meets National Fire Protection Association (NFPA) standards and is being used for the storage of ignitable liquids). Information on the fire protection system in Building 79 is provided as Attachment 3 to this letter. 6) p. 17: Text corrected to state that Bay 2 of the KC-2 Warehouse may be considered for the storage of containers of hazardous waste without free liquids.
Figure D-55 (Plant 8 Warehouse Secondary Containment Dimensions) Figure D-56 (Plant 8 Warehouse Drum Layout)	These figures have been added based on upgrades completed at the Plant 8 Warehouse (Building 80).
Table D-1 (RCRA Storage Units)	Table D-1 has been revised as follows: 1) Plant 8 Warehouse may be used for the storage of containers of hazardous waste with and without free liquids and ignitable liquids. 2) Plant 6 Warehouse will be used for the storage of containers of ignitable liquids. 3) KC-2 Warehouse will no longer be used for the storage of ignitable liquids.
Attachment D-1 (Coating Systems/Vendor's Specifications)	p. 1: Floor coating information has been provided for the Plant 8 Warehouse (Building 80).
Attachment D-2 (Secondary Containment Calculations)	p. 32: Secondary containment calculations have been provided for the Plant 8 Warehouse (Building 80).

ATTACHMENT 2

REVISIONS TO SECTION A - PART A PERMIT INFORMATION, SECTION D - PROCESS INFORMATION, AND SECTION G CONTINGENCY PLAN OF THE FEMP'S RCRA PART A/B PERMIT APPLICATION (REVISION 3.0)

REVISED SECTION G - CONTINGENCY PLAN SECTIONS	REVISIONS
Section G - Text	1) The Table of Contents has been revised to include page references for subsections. 2) p. 2: Text has been revised to: 1) update the list of current activities at the FEMP; and 2) indicate that the KC-2 Warehouse (Bldg. 63) will no longer be used for the storage of ignitable hazardous waste. Electricity and water have been permanently shut off at KC-2 Warehouse beginning in January 1997 to prepare for D&D of the Boiler Plant Complex. The feeder line to KC-2 Warehouse runs through this complex. 3) p.3: PCBs have been added to the waste types currently being stored in Plant 6 Warehouse (Building 79). 4) p. 4: Text has been revised to 1) state that safety and emergency equipment lists have been provided only for HWMUs that are actively storing wastes or contain hazardous waste residues; and 2) the Emergency Planning Department has assumed the responsibility for developing a training program for Emergency Duty Officers. 5) p.5, 19, 20, 31, 33: Department name of Joint Public Information Center (JPIC) has been changed to Joint Information Center (JIC) and the department has moved from Fairfield to Springdale. 6) p.6, 14, 15: Text has been revised to reflect change in name from DOE-Fernald Office (DOE-FN) to DOE-Fernald Environmental Management Project (DOE-FEMP). 7) p.8: Text revised to indicate 1) division of responsibilities between the Emergency Preparedness Manager and the Assistant Emergency Duty Officer (AEDO); 2) there are currently four Utility Engineers serving as FEMP Emergency Coordinators; and 3) to correct typographical error. 8) p. 9, 10: Title of Safety and Fire Inspectors has been changed to Fire Fighter/Emergency Response Specialists. 9) p.9: Includes the following revisions: 1) the Deputy Emergency Duty Officer (EDO) assumes responsibility from the Emergency Duty Officer in managing the Emergency Operations Center (EOC); 2) to state that the EDO can no longer be contacted by cellular phone; and 3) to correct a typographical error. 10) p. 10, 13: Updated emergency contacts and telephone numbers. 11) p. 27: Frequency of inspections of FEMP hazardous waste surface impoundments has been revised based on OEPA concurrence with 10/16/96 letter from DOE-FEMP. 12) p. 34, 37: Table G-5 has been removed since the 2-2, 3-3, and 4-4 alarm signals are no longer used at the FEMP.

ATTACHMENT 2

REVISIONS TO SECTION A - PART A PERMIT INFORMATION, SECTION D - PROCESS INFORMATION, AND SECTION G CONTINGENCY PLAN OF THE FEMP'S RCRA PART A/B PERMIT APPLICATION (REVISION 3.0)

REVISED SECTION G - CONTINGENCY PLAN SECTIONS	REVISIONS
Section G - Text (cont'd)	13) p. 34, 44: The reference to alarm systems in the Building 64 Warehouse is no longer applicable since the FEMP is no longer using this building for less than 90 day storage of hazardous waste. 14) p. 35: Addresses revision to process for alerting ERT members to an emergency. 15) p. 38: Two water supply tanks referenced in this section are no longer being used for potable water storage. 16) p. 39: Four buildings/areas have been deleted from the list of buildings with sprinkler systems. Electrical power and water has been permanently shut off at KC-2 Warehouse beginning in January 1997 so that the sprinkler system is no longer operational. Building 64 has been deleted because it is no longer being used for the storage of hazardous waste. 17) p. 40, 41, 42: List of equipment associated with FEMP emergency response vehicles has been updated. 18) p. 45: Information on monitoring by the meteorological tower has been updated - strip charts are no longer used and the monitors have been moved to Building 14. 19) p. 47: Text clarified to state that two EMTs are assigned to each shift. 20) p. 48: The frequency of joint emergency exercises has been changed to every three years. Section G-7: The FEMP no longer conducts in-place accountability. Emergency evacuation procedures have been revised so that Figure G-8 has been removed.
Table G-1 (Off-site Emergency Operation Organizations)	Updated list of emergency contacts and telephone numbers.
Table G-2 (The FEMP Emergency Organization Roster)	Revised to reflect change in department name of Joint Public Information Center (JPIC) to Joint Information Center (JIC).
Table G-5 (FEMP Emergency Alarm Signals)	This table has been removed since the 2-2, 3-3, and 4-4 alarm signals are no longer used at the FEMP.
Figure G-8 (Personnel Accountability)	Figure G-8 has been removed because the FEMP is no longer conducting in-place accountability and has revised rally point evacuation procedures.

ATTACHMENT 2

REVISIONS TO SECTION A - PART A PERMIT INFORMATION, SECTION D - PROCESS INFORMATION, AND SECTION G CONTINGENCY PLAN OF THE FEMP'S RCRA PART A/B PERMIT APPLICATION (REVISION 3.0)

REVISED SECTION G - CONTINGENCY PLAN SECTIONS	REVISIONS
Attachment G-1 (Emergency Procedures, Site Layout and Equipment Information)	1) The following units are empty and no longer require safety and emergency equipment to be associated with the individual unit: Drum Storage Area South of Room W-26 (HWMU #5) Abandoned Sump West of Pilot Plant (HWMU #22) Plant 1 Storage Building (HWMU #25) Storage Pad North of Plant 6 (HWMU #36) UNH Tanks - NFS Storage Area (HWMU #46) UNH Tanks - North of Plant 2 (HWMU #47) UNH Tanks - Southeast of Plant 2 (HWMU #48) UNH Tanks - Digestion Area (HWMU #49) UNH Tanks - Raffinate Building (HWMU #50) Tank for Bulk Storage of Thorium Nitrate, T-2 (HWMU #54) 2) The following HWMUs contain solid residues and only require fire extinguishers to be associated with the individual unit: NAR System Components (HWMU #10) Box Furnace (HWMU #14) Oxidation Furnace (HWMU #15) Trane Thermal Liquid Incinerator (HWMU #28)

ATTACHMENT 2

REVISIONS TO SECTION A - PART A PERMIT INFORMATION, SECTION D - PROCESS INFORMATION, AND SECTION G CONTINGENCY PLAN OF THE FEMP'S RCRA PART A/B PERMIT APPLICATION (REVISION 3.0)

REVISED SECTION G - CONTINGENCY PLAN SECTIONS	REVISIONS
Attachment G-1 (Emergency Procedures, Site Layout and Equipment Information) (cont'd)	3) Removed evacuation route maps and safety/emergency equipment lists for the following HWMUs that have been reclassified or closed: Waste Oil Storage in Garage (HWMU #3) Drummed HF Residue/Associated Storage Areas Northwest of Plant 4 (HWMU #7) Wheelabrator Dust Collector (HWMU #13) Primary Calciner (HWMU #16) Hilco Oil Recovery (HWMU #21) Detrex Still (HWMU #26) Tank for Bulk Storage of Solvents, T-5 (HWMU #31) Tank for Bulk Storage of Solvents, T-6 (HWMU #32) HF Tank Car (HWMU #38) North and South Solvent Tanks (Pilot Plant) (HWMU #52) 4) Updated emergency/safety equipment lists for the following HWMUs: Plant 8 East Drum Storage Pad (HWMU #17) Plant 8 West Drum Storage Pad (HWMU #18) CP Storage Warehouse (HWMU #19) Plant 1 Pad (HWMU #20) Plant 8 Warehouse (HWMU #29) KC-2 Warehouse (HWMU #34) Plant 6 Warehouse (HWMU #37)

ATTACHMENT 2

REVISIONS TO SECTION A - PART A PERMIT INFORMATION, SECTION D - PROCESS INFORMATION, AND SECTION G CONTINGENCY PLAN OF THE FEMP'S RCRA PART A/B PERMIT APPLICATION (REVISION 3.0)

REVISED SECTION G - CONTINGENCY PLAN SECTIONS	REVISIONS
Attachment G-1 (Emergency Procedures, Site Layout and Equipment Information) (cont'd)	5) The Pilot Plant Warehouse (HWMU #33) is not currently being used for hazardous waste storage so that no safety/emergency equipment is identified for this unit. 6) Removed evacuation route map and safety/emergency equipment list for the 90 Day Storage Area - this area has been dismantled. 7) Provided evacuation route map and emergency/safety equipment list for the new 90 Day Hazardous Waste Storage Locker. 8) Provided updated site evacuation route map for FEMP HWMUs. Removed closed/reclassified units and deleted Rally Point #7. This rally point has been removed as a result of the D&D of the Plant 1 Complex. 9) Revised evacuation routes for the following HWMUs due to the removal of Rally Point #7: CP Storage Warehouse (HWMU #19) Waste Pit No. 4 (HWMU #27) KC-2 Warehouse (HWMU #34) Waste Pit No. 5 (HWMU #42) 10) p. 18: Text has been revised to reflect the change in name from DOE-Fernald Office (DOE-FN) to DOE-Fernald Environmental Management Project (DOE-FEMP).
Attachment G-3 (Mutual Aid Agreements)	The following Mutual Aid Agreements have been re-issued and should replace the previous agreements which were provided in this attachment: Crosby Township Fire Department Ross Township Fire Department

ATTACHMENT 3

ATTACHMENT 3

STORAGE OF IGNITABLE HAZARDOUS WASTE IN THE PLANT 6 WAREHOUSE (BUILDING 79) AND THE PLANT 8 WAREHOUSE (BUILDING 80)

The FEMP is initiating the use of the Plant 6 Warehouse (Building 79) and the Plant 8 Warehouse (Building 80) for the storage of containers of ignitable hazardous waste. The following description of the fire protection systems in these buildings is provided for informational purposes.

The Plant 6 Warehouse and the Plant 8 Warehouse are being operated in accordance with OAC 3745-54-17 and OAC 3745-55-76 requirements for the storage of ignitable hazardous wastes and meet National Fire Protection Association (NFPA) standards for the storage of flammable and combustible liquids. NFPA standards are used to ensure compliant storage of ignitable hazardous waste under RCRA.

Both buildings are fully sprinklered using the same type of dry pipe sprinkler system. The system is arranged on an extra-hazard pipe schedule using 17/32 inch orifice 286 degree F-rated sprinkler heads with an average spacing of approximately 83 square feet. The available water supply to sprinkler systems consists of three 2000 gpm at 123 psi fire pumps. Two of the pumps are diesel driven and the third is electric driven. The electric-driven and one of the diesel-driven pumps are arranged for automatic starting while the second diesel driven pump is arranged for manual start. The fire pumps take suction from one 300,00 gallon storage tank. Additional water supplies for fire protection include the east 200,000 gallon elevated storage tank and the west 350,000 gallon elevated storage tank. Water to plant-wide fire protection systems is distributed through a 12 inch underground fire main grid system. The lead-in to the dry pipe valve serving both buildings is an 8 inch main that connects directly to the 12 inch grid. Two way fire hydrants are also provided in close proximity to the Plant 6 and Plant 8 Warehouses. There are no inside hose stations servicing these buildings. Both buildings are also equipped with portable fire extinguishers.

Additional fire fighting equipment is located on-site and includes two pumper trucks equipped with foam capacities and a 2500 gallon tanker truck.

The FEMP has a plant-wide fire alarm system consisting of a Honeywell Delta 1000 multiplex system. In the Plant 6 and Plant 8 Warehouses, the system monitors manual pull stations, water flow, air pressure supervision and valve tampering supervision. The fire alarm system is an on-site proprietary signaling system. Responses to fire alarms and trouble signals are initiated using signals over the public address system and paging of emergency response team members.