

3820

**REVISED RESOURCE CONSERVATION AND
RECOVERY ACT (RCRA) PART A AND B PERMIT
APPLICATION IN ORDER TO RECEIVE WASTES
FROM OFF SITE**

10/15/92

**DOE-0095-93
DOE-FN/OEPA
50
LETTER**



Department of Energy
Fernald Environmental Management Project
P.O. Box 398705
Cincinnati, Ohio 45239-8705
(513) 738-6357

OCT 15 1992
DOE-0095-93

3820

Mr. Donald R. Schregardus, Director
Ohio Environmental Protection Agency
1800 WaterMark Drive
P.O. Box 1049
Columbus, Ohio 43266-0149

Dear Mr. Schregardus:

REVISED RESOURCE CONSERVATION AND RECOVERY ACT (RCRA) PART A AND B PERMIT APPLICATION IN ORDER TO RECEIVE WASTES FROM OFF SITE

Enclosed is the Fernald Environmental Management Project's (FEMP) revision to its RCRA Part A and B Permit Application. Section C, Waste Characteristics, of the RCRA Part B Permit Application, and a portion of the Part A Permit Application (Item XIV: Description of Hazardous Wastes and the Part A Certifications) were revised as part of the FEMP's Action Plan for receiving sample wastes from off-site laboratories. This documentation is being submitted for your review and approval, as required in paragraph 3.2 of the 1988 Consent Decree between the Department of Energy and the State of Ohio. The wastes at these laboratories were generated from samples sent for laboratory analysis to support the FEMP remediation and waste characterization activities.

The Part A Permit Application was updated to include eight new waste stream numbers and their respective maximum capacities. Also, included were revised maximum capacities for three existing waste streams.

Section C, Waste Characteristics, was revised to incorporate Ohio's Consent to Service requirements for the receipt of out-of-state hazardous wastes. Also, Table C-4 was revised to include American Society of Testing and Materials (ASTM) screening methods for receipt of hazardous waste.

Also included in this submittal is a summary chart for the volume of waste that is awaiting return to the FEMP. As sampling and characterization activities continue, additional wastes will be generated and returned to the site under this modification. Any new waste streams identified will be added to the FEMP Part B Permit prior to the receipt of waste.

Many of the laboratories currently storing these FEMP wastes are close to exceeding their regulatory license. Should they exceed their license, FEMP characterization and remedial activities could be suspended. Accordingly we are asking for your quick action on this request and ask for a response by November 10, 1992.

If you or your staff have any questions regarding the revision to the RCRA Part A and B Permit Application, please contact David Rast at (513) 738-6222.

Sincerely,


W. D. Adams
Acting Manager

FN:Rast

Enclosure: As Stated

cc w/enc.:

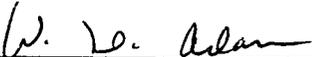
K. A. Hayes, EM-424, TREV
J. A. Saric, USEPA-V, HRE-84
P. Pardi, OEPA-Dayton
G. E. Mitchell, OEPA-Dayton
AR Coordinator, WEMCO

cc w/o enc.:

L. S. Farmer, WEMCO/2
V. A. Franklin, WEMCO/8
D. A. Nixon, WEMCO/52-10
E. D. Savage, WEMCO/65
N. C. Kaufman, FERMCO/72
J. A. Rasile, FERMCO/72
J. W. Thiesing, FERMCO/72

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

U. S. Department of Energy
Owner and Operator



W. D. Adams, Acting Manager
Fernald Site Office

10-14-92

Date signed

ITEM XVIII. CERTIFICATION(S) (Page 2)

The Department of Energy has signed this certification as the owner and operator of the subject facility and the contractor has signed as co-operator of the facility. The Department has determined (U.S. Department of Energy, Secretary of Energy Notice SEN-22-90, dated 5/8/90) that dual signatures best reflect the actual apportionment of responsibility under which the Department is responsible for policy, programmatic, funding and scheduling decisions, as well as, general oversight; and the contractor is responsible for certain day-to-day activities which are performed by contractor employees and subcontractors, (in accordance with general directions given by the Department as part of its general oversight responsibility), such as waste analyses and handling, monitoring, record keeping, reporting, and contingency planning. Westinghouse Environmental Management Company of Ohio (WEMCO) executes this application as co-operator with the following specific exception to the statements in the application: It is WEMCO's position that the following surface impoundments listed in Section XV did not manage a listed hazardous waste because of the application of the wastewater mixture rule exemption, and, as such, are exempt from hazardous waste management unit requirements: waste pit No. 5, the clearwell, the bio-surge lagoon, the sludge drying beds, the lime sludge ponds and the coal pile runoff basin. WEMCO is executing this Part A Permit Application as co-operator in the spirit of cooperation with DOE which has overall responsibility for the FEMP. But in doing so, WEMCO does not agree that the listed surface impoundments are hazardous waste management units or that they and the listed wastewater streams are subject to hazardous waste statutes or regulations and WEMCO, in executing this Part A, expressly reserves all rights with respect thereto. I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Westinghouse Environmental Management
Company of Ohio, Co-operator



H. F. Daugherty, President
Westinghouse Environmental Management
Company of Ohio

10/7/92

Date signed

Please print or type with 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)													
O	H	6	8	9	0	0	0	8	9	7	6												
XIV. 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)																(2) PROCESS DESCRIPTION (if a code is not entered in D(1))						
1	D	0	0	1	136000	P	S	0	1														
2	D	0	1	9																		Included in Above	
3	D	0	2	2																		Included in Above	
4	D	0	2	8																		Included in Above	
5	D	0	2	9																		Included in Above	
6	D	0	3	5																		Included in Above	
7	D	0	3	9																		Included in Above	
8	D	0	4	0																		Included in Above	
9	F	0	0	5																		Included in Above	
10	D	0	0	1	10000	P	S	0	1														
11	D	0	1	9																		Included in Above	
12	D	0	2	2																		Included in Above	
13	D	0	3	9																		Included in Above	
14	F	0	0	2																		Included in Above	
15	F	0	0	3																		Included in Above	
16	D	0	0	1	44500	P	S	0	1														
17	D	0	1	9																		Included in Above	
18	D	0	3	9																		Included in Above	
19	D	0	4	0																		Included in Above	
20	F	0	0	1																		Included in Above	
21	F	0	0	3																		Included in Above	
22	F	0	0	5																		Included in Above	
23	D	0	0	1	16000	P	S	0	1														
24	D	0	3	9																		Included in Above	
25	F	0	0	1																		Included in Above	
26	D	0	0	1	16000	P	S	0	1														
27	D	0	3	9																		Included in Above	
28	F	0	0	3																		Included in Above	
29	F	0	0	5																		Included in Above	
30	D	0	0	1	185100	P	S	0	1														
31	F	0	0	1																		Included in Above	
32					Blank																	Left Blank	
33					Blank																	Left Blank	

Please print or type with 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)													
O	H	6	8	9	0	0	0	8	9	7	6												
XIV. 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)															(2) PROCESS DESCRIPTION (if a code is not entered in D(1))							
1	D	0	0	1	10500	P	S	0	1														
2	U	1	6	1																		Included in Above	
3	D	0	0	2	954600	P	S	0	1														
4	D	0	0	2	13500	P	S	0	1														
5	D	0	0	4																		Included in Above	
6	D	0	0	7																		Included in Above	
7	D	0	0	2	11500	P	S	0	1														
8	D	0	0	4																		Included in Above	
9	D	0	0	7																		Included in Above	
10	D	0	0	8																		Included in Above	
11	D	0	1	1																		Included in Above	
12	D	0	0	2	10000	P	S	0	1														
13	D	0	0	4																		Included in Above	
14	D	0	0	8																		Included in Above	
15	D	0	0	2	2159890	P	S	0	1														
16	D	0	0	5																		Included in Above	
17	D	0	0	7																		Included in Above	
18	D	0	0	2	10000	P	S	0	1														
19	D	0	0	5																		Included in Above	
20	D	0	0	9																		Included in Above	
21	D	0	0	2	10000	P	S	0	1														
22	D	0	0	6																		Included in Above	
23	D	0	0	2	10000	P	S	0	1														
24	D	0	0	6																		Included in Above	
25	D	0	0	9																		Included in Above	
26	D	0	0	2	25000	P	S	0	1														
27	D	0	0	7																		Included in Above	
28	D	0	0	2	15000	P	S	0	1														
29	D	0	0	7																		Included in Above	
30	D	0	0	8																		Included in Above	
31					Blank																	Left Blank	
32					Blank																	Left Blank	
33					Blank																	Left Blank	

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 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)															(2) PROCESS DESCRIPTION (if a code is not entered in D(1))							
1	D	0	0	3	11000	P	S	0	1														
2	F	0	0	1																		Included in Above	
3	U	0	5	6																		Included in Above	
4	D	0	0	3	10000	P	S	0	1														
5	F	0	0	3																		Included in Above	
6	D	0	0	4	10000	P	S	0	1														
7	D	0	0	4	11000	P	S	0	1														
8	D	0	0	5																		Included in Above	
9	D	0	0	6																		Included in Above	
10	D	0	0	7																		Included in Above	
11	D	0	0	4	12000	P	S	0	1														
12	D	0	0	5																		Included in Above	
13	D	0	0	6																		Included in Above	
14	D	0	0	7																		Included in Above	
15	D	0	0	8																		Included in Above	
16	D	0	0	4	10500	P	S	0	1														
17	D	0	0	5																		Included in Above	
18	D	0	0	6																		Included in Above	
19	D	0	0	7																		Included in Above	
20	D	0	0	8																		Included in Above	
21	D	0	1	0																		Included in Above	
22	D	0	1	8																		Included in Above	
23	F	0	0	2																		Included in Above	
24	D	0	0	4	11000	P	S	0	1														
25	D	0	0	5																		Included in Above	
26	D	0	0	6																		Included in Above	
27	D	0	0	7																		Included in Above	
28	D	0	0	8																		Included in Above	
29	D	0	1	1																		Included in Above	
30					Blank																	Left Blank	
31					Blank																	Left Blank	
32					Blank																	Left Blank	
33					Blank																	Left Blank	

Please print or type with 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)													
O	H	6	8	9	0	0	0	8	9	7	6												
XIV. 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)															(2) PROCESS DESCRIPTION (if a code is not entered in D(1))							
1	D	0	0	4	10500	P	S	0	1														
2	D	0	0	5																		Included in Above	
3	D	0	0	6																		Included in Above	
4	D	0	0	7																		Included in Above	
5	D	0	0	8																		Included in Above	
6	D	0	2	2																		Included in Above	
7	F	0	0	2																		Included in Above	
8	F	0	0	3																		Included in Above	
9	D	0	0	4	17000	P	S	0	1														
10	D	0	0	5																		Included in Above	
11	D	0	0	7																		Included in Above	
12	D	0	0	8																		Included in Above	
13	D	0	1	0																		Included in Above	
14	D	0	1	1																		Included in Above	
15	D	0	0	4	10000	P	S	0	1														
16	D	0	0	5																		Included in Above	
17	D	0	0	8																		Included in Above	
18	D	0	2	2																		Included in Above	
19	F	0	0	2																		Included in Above	
20	F	0	0	3																		Included in Above	
21	D	0	0	4	10500	P	S	0	1														
22	D	0	0	5																		Included in Above	
23	D	0	0	8																		Included in Above	
24	F	0	0	1																		Included in Above	
25	F	0	0	2																		Included in Above	
26	D	0	0	4	10500	P	S	0	1														
27	D	0	0	6																		Included in Above	
28	D	0	0	4	12500	P	S	0	1														
29	D	0	0	6																		Included in Above	
30	D	0	0	7																		Included in Above	
31	D	0	0	8																		Included in Above	
32					Blank																	Left Blank	
33					Blank																	Left Blank	

Please print or type with 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)													
O	H	6	8	9	0	0	0	8	9	7	6												
XIV. 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)															(2) PROCESS DESCRIPTION (if a code is not entered in D(1))							
1	D	0	0	4	82500	P	S	0	1														
2	D	0	0	6																		Included in Above	
3	D	0	0	8																		Included in Above	
4	D	0	0	4	637000	P	S	0	1														
5	D	0	0	6																		Included in Above	
6	D	0	0	8																		Included in Above	
7	D	0	1	0																		Included in Above	
8	D	0	0	4	10000	P	S	0	1														
9	D	0	0	6																		Included in Above	
10	D	0	0	8																		Included in Above	
11	F	0	0	2																		Included in Above	
12	D	0	0	4	10000	P	S	0	1														
13	D	0	0	8																		Included in Above	
14	D	0	0	4	36000	P	S	0	1														
15	D	0	0	8																		Included in Above	
16	D	0	1	0																		Included in Above	
17	D	0	0	4	11500	P	S	0	1														
18	D	0	0	8																		Included in Above	
19	D	0	1	1																		Included in Above	
20	D	0	0	4	10100	P	S	0	1														
21	D	0	0	8																		Included in Above	
22	D	0	1	1																		Included in Above	
23	F	0	0	5																		Included in Above	
24	D	0	0	4	11000	P	S	0	1														
25	D	0	1	1																		Included in Above	
26	D	0	0	5	238000	P	S	0	1														
27	D	0	0	5	19000	P	S	0	1														
28	D	0	0	6																		Included in Above	
29	D	0	0	7																		Included in Above	
30	D	0	0	8																		Included in Above	
31					Blank																	Left Blank	
32					Blank																	Left Blank	
33					Blank																	Left Blank	

Please print or type with 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)													
O	H	6	8	9	0	0	0	8	9	7	6												
XIV. 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)										(2) PROCESS DESCRIPTION (if a code is not entered in D(1))												
1	D	0	0	5	12500	P	S	0	1														
2	D	0	0	6																		Included in Above	
3	D	0	0	7																		Included in Above	
4	D	0	0	8																		Included in Above	
5	D	0	0	9																		Included in Above	
6	D	0	0	5	10000	P	S	0	1														
7	D	0	0	6																		Included in Above	
8	D	0	0	7																		Included in Above	
9	D	0	0	8																		Included in Above	
10	D	0	1	0																		Included in Above	
11	D	0	1	8																		Included in Above	
12	F	0	0	1																		Included in Above	
13	F	0	0	2																		Included in Above	
14	F	0	0	3																		Included in Above	
15	F	0	0	4																		Included in Above	
16	D	0	0	1	10000	P	S	0	1														
17	D	0	0	6																		Included in Above	
18	D	0	0	7																		Included in Above	
19	D	0	0	8																		Included in Above	
20	F	0	0	3																		Included in Above	
21	D	0	0	5	25000	P	S	0	1														
22	D	0	0	7																		Included in Above	
23	D	0	0	5	213000	P	S	0	1														
24	D	0	0	8																		Included in Above	
25	D	0	0	5	10750	P	S	0	1														
26	D	0	0	8																		Included in Above	
27	D	0	1	8																		Included in Above	
28	D	0	0	5	10000	P	S	0	1														
29	D	0	0	8																		Included in Above	
30	D	0	1	8																		Included in Above	
31	F	0	0	2																		Included in Above	
32					Blank																	Left Blank	
33					Blank																	Left Blank	

Please print or type with 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)													
O	H	6	8	9	0	0	0	8	9	7	6												
XIV. 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)															(2) PROCESS DESCRIPTION (if a code is not entered in D(1))							
1	D	0	0	5	16500	P	S	0	1														
2	D	0	0	8																		Included in Above	
3	F	0	0	2																		Included in Above	
4	D	0	0	5	252000	P	S	0	1														
5	D	0	1	0																		Included in Above	
6	D	0	0	5	10000	P	S	0	1														
7	D	0	1	8																		Included in Above	
8	D	0	0	5	46500	P	S	0	1														
9	F	0	0	2																		Included in Above	
10	D	0	0	6	11000	P	S	0	1														
11	D	0	0	6	10500	P	S	0	1														
12	D	0	0	7																		Included in Above	
13	D	0	0	6	11000	P	S	0	1														
14	D	0	0	7																		Included in Above	
15	D	0	0	8																		Included in Above	
16	D	0	0	6	10200	P	S	0	1														
17	D	0	0	7																		Included in Above	
18	D	0	0	8																		Included in Above	
19	D	0	1	8																		Included in Above	
20	D	0	4	0																		Included in Above	
21	F	0	0	2																		Included in Above	
22	D	0	0	6	10200	P	S	0	1														
23	D	0	0	7																		Included in Above	
24	D	0	0	8																		Included in Above	
25	D	0	1	8																		Included in Above	
26	D	0	4	0																		Included in Above	
27	F	0	0	2																		Included in Above	
28	F	0	0	5																		Included in Above	
29					Blank																	Left Blank	
30					Blank																	Left Blank	
31					Blank																	Left Blank	
32					Blank																	Left Blank	
33					Blank																	Left Blank	

Please print or type with 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)													
O	H	6	8	9	0	0	0	8	9	7	6												
XIV. 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)															(2) PROCESS DESCRIPTION (if a code is not entered in D(1))							
1	D	0	0	6	14000	P	S	0	1														
2	D	0	0	7																		Included in Above	
3	D	0	0	8																		Included in Above	
4	D	0	2	9																		Included in Above	
5	D	0	4	0																		Included in Above	
6	D	0	4	1																		Included in Above	
7	D	0	0	6	14000	P	S	0	1														
8	D	0	0	7																		Included in Above	
9	D	0	0	8																		Included in Above	
10	D	0	1	9																		Included in Above	
11	D	0	2	9																		Included in Above	
12	D	0	4	0																		Included in Above	
13	F	0	0	1																		Included in Above	
14	D	0	0	6	12500	P	S	0	1														
15	D	0	0	8																		Included in Above	
16	D	0	1	8																		Included in Above	
17	D	0	1	9																		Included in Above	
18	D	0	2	8																		Included in Above	
19	D	0	2	9																		Included in Above	
20	D	0	3	9																		Included in Above	
21	D	0	4	0																		Included in Above	
22	F	0	0	2																		Included in Above	
23	F	0	0	5																		Included in Above	
24	D	0	0	6	12500	P	S	0	1														
25	D	0	0	8																		Included in Above	
26	D	0	0	6	10000	P	S	0	1														
27	D	0	0	9																		Included in Above	
28	D	0	0	7	49000	P	S	0	1														
29	D	0	0	7	13000	P	S	0	1														
30	D	0	0	8																		Included in Above	
31	D	0	0	7	81000	P	S	0	1														
32	D	0	1	0																		Included in Above	
33					Blank																	Left Blank	

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 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)															(2) PROCESS DESCRIPTION (if a code is not entered in D(1))							
1	D	0	0	7	10100	P	S	0	1														
2	D	0	1	1																		Included in Above	
3	D	0	0	7	18000	P	S	0	1														
4	D	0	1	8																		Included in Above	
5	D	0	1	9																		Included in Above	
6	D	0	2	1																		Included in Above	
7	D	0	2	9																		Included in Above	
8	D	0	3	9																		Included in Above	
9	D	0	4	0																		Included in Above	
10	F	0	0	1																		Included in Above	
11	D	0	0	7	10500	P	S	0	1														
12	D	0	1	8																		Included in Above	
13	D	0	2	1																		Included in Above	
14	D	0	2	9																		Included in Above	
15	D	0	0	7	11000	P	S	0	1														
16	F	0	0	1																		Included in Above	
17	D	0	0	8	720000	P	S	0	1														
18	D	0	0	8	11000	P	S	0	1														
19	D	0	0	9																		Included in Above	
20	D	0	3	9																		Included in Above	
21	F	0	0	1																		Included in Above	
22	D	0	0	8	11000	P	S	0	1														
23	D	0	1	1																		Included in Above	
24	F	0	0	1																		Included in Above	
25	D	0	0	8	20000	P	S	0	1														
26	D	0	1	8																		Included in Above	
27					Blank																	Left Blank	
28					Blank																	Left Blank	
29					Blank																	Left Blank	
30					Blank																	Left Blank	
31					Blank																	Left Blank	
32					Blank																	Left Blank	
33					Blank																	Left Blank	

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 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)															(2) PROCESS DESCRIPTION (if a code is not entered in D(1))							
1	D	0	1	0	13000	P	S	0	1														
2	D	0	3	5																		Included in Above	
3	F	0	0	1																		Included in Above	
4	D	0	1	0	17500	P	S	0	1														
5	F	0	0	2																		Included in Above	
6	D	0	1	0	37000	P	S	0	1														
7	F	0	0	2																		Included in Above	
8	F	0	0	5																		Included in Above	
9	D	0	1	1	16500	P	S	0	1														
10	D	0	1	1	10500	P	S	0	1														
11	F	0	0	1																		Included in Above	
12	F	0	0	5																		Included in Above	
13	D	0	1	2	25000	P	S	0	1														
14	D	0	1	3																		Included in Above	
15	D	0	1	4																		Included in Above	
16	D	0	1	5																		Included in Above	
17	D	0	1	6																		Included in Above	
18	D	0	1	7																		Included in Above	
19	D	0	1	6	10500	P	S	0	1														
20	F	0	0	2																		Included in Above	
21	D	0	1	8	52000	P	S	0	1														
22	D	0	1	8	42500	P	S	0	1														
23	F	0	0	1																		Included in Above	
24	D	0	1	8	15000	P	S	0	1														
25	F	0	0	1																		Included in Above	
26	F	0	0	2																		Included in Above	
27	D	0	1	8	15000	P	S	0	1														
28	F	0	0	2																		Included in Above	
29	D	0	1	8	10000	P	S	0	1														
30	F	0	0	5																		Included in Above	
31	D	0	1	9	12500	P	S	0	1														
32					Blank																	Left Blank	
33					Blank																	Left Blank	

Please print or type with 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)													
O	H	6	8	9	0	0	0	8	9	7	6												
XIV. 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)															(2) PROCESS DESCRIPTION (if a code is not entered in D(1))							
1	D	0	3	0	10000	P	S	0	1														
2	D	0	3	1	10000	P	S	0	1														
3	D	0	3	2	10000	P	S	0	1														
4	D	0	3	3	10000	P	S	0	1														
5	D	0	3	4	10000	P	S	0	1														
6	D	0	3	5	10000	P	S	0	1														
7	D	0	3	5	10000	P	S	0	1														
8	F	0	0	5																		Included in Above	
9	D	0	3	6	10000	P	S	0	1														
10	D	0	3	7	10000	P	S	0	1														
11	D	0	3	8	10000	P	S	0	1														
12	D	0	3	9	20000	P	S	0	1														
13	D	0	3	9	18500	P	S	0	1														
14	D	0	4	0																		Included in Above	
15	F	0	0	1																		Included in Above	
16	D	0	3	9	38000	P	S	0	1														
17	D	0	4	0																		Included in Above	
18	F	0	0	2																		Included in Above	
19	D	0	3	9	700000	P	S	0	1														
20	F	0	0	2																		Included in Above	
21	D	0	3	9	10500	P	S	0	1														
22	F	0	0	3																		Included in Above	
23	F	0	0	5																		Included in Above	
24	D	0	4	0	10000	P	S	0	1														
25	D	0	4	0	25000	P	S	0	1														
26	F	0	0	1																		Included in Above	
27	D	0	4	0	75000	P	S	0	1														
28	F	0	0	1																		Included in Above	
29	F	0	0	2																		Included in Above	
30	F	0	0	5																		Included in Above	
31	D	0	4	1	10000	P	S	0	1														
32	D	0	4	2	10000	P	S	0	1														
33	D	0	4	3	10000	P	S	0	1														

Please print or type with 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)													
O	H	6	8	9	0	0	0	8	9	7	6												
XIV. 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)							(2) PROCESS DESCRIPTION (if a code is not entered in D(1))															
1	P	1	1	9	10000	P	S	0	1														
2	P	1	2	0	10000	P	S	0	1														
3	P	1	2	3	10000	P	S	0	1														
4	U	0	1	9	10000	P	S	0	1														
5	U	0	3	6	10000	P	S	0	1														
6	U	0	3	7	10000	P	S	0	1														
7	U	0	4	3	10000	P	S	0	1														
8	U	0	4	4	12000	P	S	0	1														
9	U	0	5	2	10000	P	S	0	1														
10	U	0	7	8	10000	P	S	0	1														
11	U	0	7	9	11000	P	S	0	1														
12	U	0	8	0	11000	P	S	0	1														
13	U	0	8	0	10000	P	S	0	1														
14	F	0	0	2																		Included in Above	
15	U	1	0	1	10000	P	S	0	1														
16	U	1	0	5	10000	P	S	0	1														
17	U	1	0	7	10000	P	S	0	1														
18	U	1	2	7	10000	P	S	0	1														
19	U	1	2	8	10000	P	S	0	1														
20	U	1	2	9	10000	P	S	0	1														
21	U	1	3	1	10000	P	S	0	1														
22	U	1	5	1	10500	P	S	0	1														
23	U	1	5	9	11000	P	S	0	1														
24	U	1	6	9	10000	P	S	0	1														
25	U	1	8	8	10000	P	S	0	1														
26	U	1	9	6	10000	P	S	0	1														
27	U	2	1	0	14500	P	S	0	1														
28	U	2	1	1	15000	P	S	0	1														
29	U	2	2	0	12000	P	S	0	1														
30	U	2	2	6	10000	P	S	0	1														
31	F	0	0	2																		Included in Above	
32	U	2	2	7	10000	P	S	0	1														
33	U	2	2	8	2374000	P	S	0	1														

3820

Please print or type with 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)													
O	H	6	8	9	0	0	0	8	9	7	6												
XIV. 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)															(2) PROCESS DESCRIPTION (if a code is not entered in D(1))							
1	U	2	4	0	10000	P	S	0	1														
2	U	2	4	7	10000	P	S	0	1														
3					Blank																		Left Blank
4					Blank																		Left Blank
5					Blank																		Left Blank
6					Blank																		Left Blank
7					Blank																		Left Blank
8					Blank																		Left Blank
9					Blank																		Left Blank
10					Blank																		Left Blank
11					Blank																		Left Blank
12					Blank																		Left Blank
13					Blank																		Left Blank
14					Blank																		Left Blank
15					Blank																		Left Blank
16					Blank																		Left Blank
17					Blank																		Left Blank
18					Blank																		Left Blank
19					Blank																		Left Blank
20					Blank																		Left Blank
21					Blank																		Left Blank
22					Blank																		Left Blank
23					Blank																		Left Blank
24					Blank																		Left Blank
25					Blank																		Left Blank
26					Blank																		Left Blank
27					Blank																		Left Blank
28					Blank																		Left Blank
29					Blank																		Left Blank
30					Blank																		Left Blank
31					Blank																		Left Blank
32					Blank																		Left Blank
33					Blank																		Left Blank

20

SECTION C - WASTE CHARACTERISTICS
TABLE OF CONTENTS

C-1	CHEMICAL AND PHYSICAL ANALYSIS	C-3
	C-1a Containerized Waste	C-4
	C-1b Waste in Tank Systems	C-5
	C-1c Waste in Piles	C-6
	C-1d Landfilled Wastes	C-6
	C-1e Wastes Incinerated and Wastes Used in Performance Tests	C-6
	C-1f Wastes to be Land Treated	C-7
	C-1g Waste in Miscellaneous Treatment Units	C-7
	C-1h Waste in Surface Impoundments	C-8
C-2	WASTE ANALYSIS PLAN	C-9
	C-2a Parameters and Rationale	C-11
	C-2b Test Methods	C-11
	C-2c Sampling Methods	C-13
	C-2d Frequency of Analysis	C-17
	C-2e Additional Requirements for Waste Generated Off-Site .	C-18
	C-2f Additional Requirements for Ignitable, Reactive and Incompatible Wastes	C-22
C-3	WASTE ANALYSIS REQUIREMENTS PERTAINING TO LAND DISPOSAL RESTRICTIONS (LDR)	C-23
	C-3a Waste Characterization	C-23
	C-3a(1) Waste Characteristics: Solvent Wastes and Dioxin-Containing Wastes	C-24
	C-3a(2) Waste Characteristics: California List Wastes	C-25
	C-3a(3) Waste Characteristics: First-Third Waste With Treatment Standards	C-28
	C-3a(4) Second-Third Wastes With Treatment Standards	C-28
	C-3a(5) Third-Third Wastes	C-29

C-3a(6)	Soft Hammer Wastes	C-29
C-3b	Notification and Certification Requirements	C-29
C-3b(1)	Retention of Generator Notices and Certifications	C-32
C-3b(2)	Notification and Certification for Wastes to be Further Managed	C-32
C-3b(3)	Notification and Certification for Soft Hammer Wastes Not Subject to California List Prohibitions	C-32
C-3b(4)	Additional Notification and Certification Requirements for Treatment Facilities . . .	C-33
C-3b(5)	Additional Notification and Certification Requirements for Disposal Facilities . . .	C-33
C-3b(6)	Notification and Certification Requirement Pertaining to Landfill and Surface Impoundment Disposal Restrictions	C-33
C-3c	Additional Requirements Pertaining to Storage of Restricted Wastes	C-33
C-3c(1)	Restricted Wastes Stored in Containers . .	C-34
C-3c(2)	Restricted Wastes in Tanks	C-35
C-3c(3)	Storage of Liquid PCB Wastes	C-35
C-3d	Additional Requirements for Treatment Facilities . . .	C-35
C-3e	Additional Requirements for Land Disposal Facilities .	C-35
C-3f	Exemptions From and Extensions To Land Disposal Restrictions	C-35
C-3f(1)	Case-by-Case Extension to an Effective Date	C-36
C-3f(2)	Exemption from a Prohibition	C-36
C-3f(3)	Variance from a Treatment Standard	C-36
C-3f(4)	Additional Requirements for Surface Impoundments	C-36
C-3g	Requirements for Land Disposal Facilities with an Approved Exemption or Extension	C-36

LIST OF TABLES

Table C-1	RCRA Regulated Hazardous Waste Storage
Table C-2	Analytical and Process Information for FEMP Wastestreams
Table C-3	FEMP Waste Analysis Parameters and Rationale for their Selection
Table C-4	Waste Codes, Test Methods, and Method Numbers Used to Analyze FEMP Wastes
Table C-5	Sampling Equipment for Particular Waste Types
Table C-6	Sample Containers, Preservatives, Holding Times, and Minimum Sample Volumes
Table C-7	Acceptance Criteria on Fingerprint Analysis for Waste Received from Off-site

LIST OF FIGURES

Figure C-1	Material Evaluation Process
------------	-----------------------------

LIST OF ATTACHMENTS

Attachment C-1	Hazardous Waste Compatibility Chart
Attachment C-2	Material Evaluation Form
Attachment C-3	Land Disposal Restrictions Data Documentation Form
Attachment C-4	Land Disposal Restrictions Addendum to the Material Evaluation Form
Attachment C-5	Land Disposal Restrictions Notification/Certification Forms

SECTION C - WASTE CHARACTERISTICS**RCRA Part B Permit Application
Fernald Environmental Management Project
Fernald, Ohio**

This section of the RCRA Part B Permit Application has been prepared in accordance with the requirements of Ohio Administrative Code (OAC) 3745-50-44(A)(2) and (3) and Title 40 of the Code of Federal Regulations (CFR) 270.14 (b)(2) and (3). The Fernald Environmental Management Project (FEMP), previously the Feed Materials Production Center (FMPC), produced uranium metal used in the fabrication of fuel cores and target fuel elements for the Department of Energy (DOE). The FEMP ceased production in September 1989. The FEMP's primary function was changed in August 1990 from uranium metal production to environmental restoration and site clean-up activities.

The FEMP currently stores wastes generated from inactive on-site production processes, restoration activities, ongoing site maintenance and construction, and off-site DOE facilities. Most hazardous waste stored at the FEMP is mixed waste. Mixed waste is defined as waste that contains both a hazardous waste component regulated under RCRA and a radioactive component consisting of source, special nuclear, or byproduct 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. Because there are limited treatment/disposal facilities permitted for mixed wastes, the FEMP is required to store the hazardous waste on-site until additional treatment/disposal facilities become available.

The FEMP is operating under a Consent Decree and its proposed amendments. Under the proposed amendments to this Consent Decree, the parties have agreed to a schedule for RCRA characterization of waste materials stored on site. Wastes have been divided into three groups based on the

following definitions:

- Backlog Waste: any waste generated on or before June 30, 1990.
- Newly Generated Waste: any waste generated after June 30, 1990.
- Newly Identified Backlog Waste: any waste which was generated prior to June 30, 1990, but was not inventoried until after June 30, 1990.

RCRA characterizations on all backlog wastes are being completed according to the schedule agreed upon in the proposed amendments to the Consent Decree. A Consent Decree Progress Report is submitted quarterly to the Ohio Environmental Protection Agency (OEPA) and includes hazardous waste streams characterized under the proposed amendments to the Consent Decree, as well as hazardous waste streams identified during routine RCRA determinations.

C-1 CHEMICAL AND PHYSICAL ANALYSIS

The information presented in this section is used to:

- establish hazardous waste identification;
- ensure proper handling and storage of the waste;
- evaluate the preacceptance conditions for receipt of waste from on-site and off-site sources; and
- determine compliance with land disposal restriction requirements.

Hazardous wastes currently generated at the FEMP result from activities such as RCRA closures, CERCLA response actions, underground storage tank removals, construction and maintenance, and miscellaneous activities.

Environmental media, such as soil or groundwater, that is generated during any of these activities and contains a hazardous constituent causing it to be determined a hazardous waste, will be managed as such. The media is characterized using the same characterization process used for waste.

Backlog hazardous wastes were generated when the FEMP was operating to produce uranium metal. These processes included metals production and fabrication, maintenance, and general degreasing operations. Hazardous wastes generated during this time were predominantly spent solvents. Hazardous wastes received from off-site DOE facilities that are part of the backlog inventory include spent solvents and barium chloride salts.

The FEMP uses process knowledge and/or analytical data to characterize waste as described in Section C-2 and the FEMP Waste Determination Plan as approved by OEPA. The first step of the waste determination process is evaluation of process information. The FEMP evaluates the adequacy of process knowledge and, if sufficient and conclusive, uses this information to characterize the waste. Typical examples of process knowledge used to complete characterizations include material safety data sheets, standard operating procedures, personnel interviews, and/or material specifications.

When process knowledge is used to determine that a waste is non-hazardous, supporting documentation is maintained in the facility's files. Additional actions such as a visual inspection, a request for additional process information, and/or a request for sampling and analysis of the waste are taken when process knowledge is inadequate to complete a characterization. After adequate information is gathered for the waste, results are evaluated and RCRA waste codes assigned as warranted.

Table C-1 identifies the hazardous wastes managed at the FEMP. This table is submitted to OEPA quarterly as part of the Consent Decree Progress Report to update the ongoing waste determination process which is taking place at the FEMP. Table C-2 summarizes the results of the hazardous waste determinations that have been completed at the FEMP based on analytical data or process knowledge.

C-1a Containerized Waste

The FEMP is seeking a permit for storage of containerized hazardous waste. The primary types of containers used for storage include, but are not limited to, 55 gallon and 85 gallon drums. Additional types of containers that may be used are identified in Section D, Table D-1. Container uses and specifications are also discussed in Section D, Process Information.

Compatibility of the hazardous waste with the container is verified prior to placing a hazardous waste in a container. The verification is completed by comparing analytical data or process knowledge for the hazardous waste to compatibility information for the container. After compatibility verification is completed, the appropriate container is obtained. Most containers used at the FEMP are constructed of carbon steel or stainless steel.

Containerized hazardous wastes are stored at designated hazardous waste storage areas within the FEMP. Because the construction of the storage areas vary, the waste characterization data is used to

determine the appropriate hazardous waste storage area. Two categories of data are used to assist FEMP personnel in selecting a storage location:

- The presence or absence of free liquids, and
- Chemical constituency or compatibility.

Most liquid hazardous waste is stored in the Plant 1 Pad covered structures and inside warehouses. The presence or absence of liquids is determined by Paint Filter Liquid Test (PFLT), visual inspection of the waste, or application of process knowledge.

Chemical constituency or compatibility of each hazardous waste is evaluated to ensure that the hazardous wastes stored in a unit are compatible with each other and with the construction of the unit.

A Reactivity Group Code is assigned to each hazardous waste stream to ensure that incompatible hazardous wastes are not stored together. An example of the current Reactivity Group Codes in use at the FEMP is included as Attachment C-1. These Reactivity Group Codes may be modified as additional hazardous wastes are identified at the FEMP.

C-1b Waste in Tank Systems

The requirements of this section are not applicable to the FEMP because the facility is not seeking a permit to operate a tank system to treat or store hazardous waste. The FEMP has tank systems that are classified as hazardous waste management units (HWMUs). All of the tank systems will be closed during site remediation.

A Sampling and Analysis Plan will be developed as part of the RCRA Closure Plan Information for each tank system. Sampling and Analysis Plans will address the procedures used to sample and characterize any hazardous waste in each tank system.

0389

C-1c Waste in Piles

The FEMP is not seeking a permit to operate a hazardous waste pile, therefore this section is not applicable. No hazardous waste piles are currently identified at the FEMP.

C-1d Landfilled Wastes

The owner/operator of a hazardous waste landfill is required to demonstrate the presence or absence of free liquids in bulk or containerized waste prior to placement in the landfill, and to provide the methods used to meet these requirements in the Waste Analysis Plan.

The requirements of this section are not applicable because the FEMP is not seeking a permit for a hazardous waste landfill. Although the FEMP has identified two hazardous waste management units (HWMUs) that are classified as landfills, no additional hazardous waste is expected to be placed in either landfill. One landfill has been closed under interim status requirements and the second will be closed in accordance with schedules submitted under the Consent Decree and its proposed amendments.

C-1e Wastes Incinerated and Wastes Used in Performance Tests

The owner/operator of an incinerator is required to include the methods that are used to sample and analyze waste prior to incineration in the Waste Analysis Plan. The FEMP is not seeking to permit a hazardous waste incinerator. Therefore, the requirements of this section are not applicable.

The FEMP has identified HWMUs that are classified as incinerators. These incinerators are not in operation and are not expected to be operated to treat hazardous waste. RCRA Closure Plan Information has been or will be submitted for each unit.

C-1f Wastes to be Land Treated

The owner/operator of a land treatment unit is required to provide a list of hazardous constituents expected to be in, or derived from, the waste to be land treated based on waste analysis performed in accordance with the Waste Analysis Plan. The same information is required if food chain crops are to be grown in or on the treatment zone. The FEMP is not seeking a permit for the land treatment of hazardous waste, therefore this section is not applicable.

C-1g Waste in Miscellaneous Treatment Units

The owner/operator of any miscellaneous treatment unit is required to provide a report on a demonstration of the effectiveness of the treatment based on laboratory or field testing. The FEMP is not seeking a permit to operate a miscellaneous treatment unit, therefore this section is not applicable.

The FEMP has identified units formerly used to treat hazardous waste. The FEMP operated the Barium Chloride Salt Treatment Facility from December 1985 until March 1986. The unit has been closed under RCRA as indicated in the Part A Permit Application. The DOE Site Manager certified on April 17, 1990, that the unit was closed in accordance with the Barium Chloride Salt Treatment Facility Treatment Closure plan.

RCRA Closure Plan Information will be submitted for all other units. Sampling and Analysis Plans will be developed as part of the RCRA Closure Plan Information. Sampling and Analysis Plans will address the procedures used to sample and characterize residues remaining in the treatment units if applicable.

11/15/88

C-1h Waste in Surface Impoundments

The FEMP has identified surface impoundments that are classified as HWMUs. The FEMP is not seeking a permit to operate a hazardous waste surface impoundment. Sampling and Analysis Plans will be developed as part of the RCRA Closure Plan Information to address the procedures used to sample and characterize waste in each surface impoundment.

C-2 WASTE ANALYSIS PLAN

This section of the permit application is the FEMP Waste Analysis Plan as required by OAC 3745-54-13(B) and (C), 3745-59-07 and 3745-50-44; 40 CFR 264.13(b) and (c); 268.7, and 270.14(b)(3). The Waste Analysis Plan describes the procedures used at the FEMP to characterize waste in order to manage the waste appropriately. The FEMP Waste Analysis Plan has three objectives:

- To accurately characterize the hazardous physical and chemical properties of each waste stream and assign appropriate hazardous waste codes;
- To provide sufficient information to select the safest hazardous waste storage containers, appropriate hazardous waste storage areas, and establish appropriate shipping and handling techniques, and;
- To determine applicable land disposal restriction information for each hazardous waste stream.

The Waste Analysis Plan may also be used to provide information for the initial screening of hazardous wastes for treatment as treatment facilities become available.

The FEMP has developed a comprehensive sampling and analysis program to ensure that the objectives of this section are achieved. The vehicle for completing waste characterizations is the Material Evaluation Form. An example of the current Material Evaluation Form is provided in Attachment C-2. This form is included as an example of the type of form used by the facility and is subject to change.

The sampling and analysis program is initiated by the process operator or project supervisor who is responsible for the waste generation. These FEMP personnel are trained, and are required to identify waste materials and initiate Material Evaluation Forms for each waste stream generated under their responsibility.

Once initiated by the process operator/project supervisor, the Material Evaluation Form is reviewed by regulatory specialists and a RCRA determination is completed if the information is sufficient. If the information is not adequate, the specialist either requests more information from the process operator/project supervisor or requests sampling of the waste. Waste determinations based on process knowledge also rely on supplemental information to support the information supplied by the process operator/project supervisor. This information can include but is not limited to:

- historical knowledge and/or data on similar FEMP processes;
- documented conversations with personnel familiar with the process or location;
- technical references or other literature which describe the processes;
- material safety data sheets; and
- vendor specification information.

The parameters needed to assess the hazardous constituents of the waste are identified and a sampling plan may be prepared if the waste requires sampling and analysis. Preliminary information supplied on the Material Evaluation Form is used to develop the sampling plan.

The sampling plans may include but are not limited to the following information:

- the purpose of sampling;
- the identification of sampling procedures;
- number and location of samples;
- analytical parameters;
- sample volumes and containers;
- Quality Assurance/Quality Control requirements;
- equipment needed;
- decontamination of equipment; and
- health and safety concerns.

After the samples are analyzed and results are received by the FEMP, the results are reviewed by FEMP personnel. A RCRA determination is made based on all available information, including the analytical data. A diagram of the material evaluation process is provided in Figure C-1.

C-2a Parameters and Rationale

This section provides the parameters and rationale for waste analysis that may apply to any individual waste stream generated or received by the FEMP. Waste streams generated by the FEMP may contain several constituents of concern. Waste is analyzed for specific parameters, as necessary, in order to meet the objectives of the Waste Analysis Plan. A list of the parameters and rationale for analysis of any waste stream generated at the FEMP is provided in Table C-3.

Each waste stream is analyzed for those parameters most likely to yield the maximum amount of chemical and physical information. In addition, specific analyses are selected based on historical knowledge, knowledge of the waste generation process, and the constituents suspected to be in the waste. The waste parameters selected by the FEMP represent those characteristics necessary to manage the waste in compliance with applicable permit conditions.

C-2b Test Methods

When process knowledge is insufficient to identify a waste stream as hazardous, analytical methods are used to make such a determination. The test methods employed for the analytical parameters chosen to characterize and monitor the FEMP waste streams are listed in Table C-4. All methods reference SW-846, unless otherwise noted. When a waste stream has the potential to have several waste codes, all applicable analytical tests are conducted on the sample.

Inductively Coupled Plasma (ICP) is the method of choice for

metallic analytes. However, where analytical or sample matrix interferences prevent the collection of accurate and/or precise data, the atomic absorption, furnace technique analogs or direct aspiration is employed.

An alternative gas chromatographic/mass spectroscopic method (Method 8240) is substituted for the gas chromatography methods listed in Table C-4, if the methods listed in Table C-4 do not provide definitive results for waste characterization or recertification.

For those constituent analyses not addressed in test methods presented in SW-846, American Society of Testing Materials (ASTM) Standards have been adopted as appropriate. "Standard Methods for the Examination of Water and Wastewater," latest edition, prepared and published jointly by American Public Health Association, American Water Works Association, and the Water Pollution Control Federation, may also be used.

For those waste streams that are generated in a solid matrix, additional sample preparation is needed prior to analysis. The extraction methods for solid matrix wastes are also provided in Table C-4.

Methods used to analyze samples sent to off-site laboratories are specified in the FEMP's contract with the laboratory and are equivalent to those specified in Table C-4. Laboratory reports document the specific SW-846 method or its analog used to analyze for each constituent. The laboratory of choice may vary because the FEMP must maintain the flexibility to select contract laboratories on a competitive basis. Prior to the selection of a contract laboratory, the laboratory submits Quality Assurance and Quality Control (QA/QC) information to the FEMP. The laboratory is required to meet the QA/QC goals established in SW-846 for analytical procedures. Failure to demonstrate the ability to achieve the QA/QC goals disqualifies the use of that laboratory.

C-2c Sampling Methods

The FEMP has developed site-specific sampling procedures which incorporate the sampling methods in SW-846 including Section 3.1 and 4.1, Sampling Considerations; Chapter 9, Sampling Plan; and Chapter 10, Sampling Methods and Samplers and Sampling Procedures for Hazardous Waste Streams (EPA-600/2-80-018).

Due to the fact that wastes generated at the FEMP vary in types of matrices, the sampling methods and equipment used by the facility depend on the individual waste stream matrix. The types of equipment used to sample specific waste types are summarized in Table C-5, which references SW-846 and/or ASTM methods.

Number of Samples

Sampling procedures used for waste characterization at the FEMP are designed to ensure representative and random sampling. Two general procedures have been developed to ensure representative and random sampling based on the type of container used to store the waste. Both procedures are based on the use of random number tables.

When a waste is stored in drums or containers of 55 gallons or less, the number of representative samples collected is based on the number of containers holding the waste from a generating source. Homogeneity of the waste being sampled is determined by evaluation of information on the Material Evaluation Form and the material type and source code. The following is provided as a general guideline for the number of representative samples required for a given container population:

Number of Containers

Number of Samples for Analysis

1	2
2	2
3 to 15	3
16 to 40	4
41 to 50	5
over 50	10 percent

In order to determine which containers are to be randomly selected, the lot group of containers holding the same waste is sequentially numbered. After the containers are numbered, a random number table is used to select containers for sampling to minimize the possibility of introducing bias into the process.

For wastes stored in large containers (20 cubic yards and larger), a representative number of samples is based on the construction of the container. The following equation is used to develop the number of representative samples for each large containers:

$$n = A \Pi / GL^{(0.5)}$$

Where n is the number of samples;
A is the area at the top of the container, and
GL is the greatest length of the container.

In order to determine the sampling location within the container, the container is schematically divided into cubes with dimensions of one foot. Each cube is sequentially numbered. After the cubes are numbered, a random number table is used to select the cube designated for sampling. During actual sampling, if interference is encountered, such as a stone or piece of wood, another location is selected using the random number table and sampled.

Samples collected from 20 cubic yard containers or larger are composited. Composite samples are also used for large populations of containers with capacities of 55 gallons or less. Samples are

collected from randomly selected containers and then composited. Sample compositing does not occur when there are physical anomalies between the wastes such as changes in color or the container holds commingled waste such as demolition debris.

Quality control and quality assurance samples such as duplicates, equipment blanks, and trip blanks may be collected. Duplicate samples are collected for waste streams with more than one drum at the rate of at least 10 percent. For example, one duplicate sample is collected if three drums of waste are sampled; two duplicate samples are collected if 11 drums of waste are sampled. Equipment blanks are collected following equipment decontamination. Trip blanks accompany sample shipments every third week. Trip blanks are analyzed for volatile organics (EPA Method 624) each time they are submitted.

Other samples may be collected as specified by the contract laboratory QA/QC procedures. These samples may include laboratory blanks and spiked blanks, split samples, and standards.

Sample Containers

The sample containers selected for a particular waste stream are based on the sample matrix and the types of analysis that may be required for that particular waste stream. Where various sample matrices are encountered or more than one analysis is required, the appropriate sample containers are used. The types of containers, preservatives, holding times, and minimum volumes required are presented in Table C-6.

QA/QC Procedures

In addition to the quality control samples described earlier, the FEMP uses several established procedures to preserve the integrity of the samples during collection and shipment. These procedures include:

- field logs,
- sampling equipment decontamination,
- chain-of-custody documents, and
- shipping seals.

Field Log

A field log is maintained by sampling personnel. The type of information that is recorded in the field log may include but is not limited to:

- sampling date and location;
- time of sampling;
- sampling plan number, if applicable;
- material type and source code, if available;
- sampling personnel
- lot and drum number, if available;
- sampling equipment used;
- number of phases or matrix;
- phase specific identifying number, if applicable;
- physical description;
- sampling anomalies and resolutions to sampling problems;
- customer number for laboratory use;
- requested analysis;
- quantity and type of bottles;
- type of sample (i.e. grab, composite, etc.); and
- identification of containers storing decontamination rinseate and personnel protective clothing.

The field log describes sampling conditions that may prejudice the analytical results.

Equipment Decontamination

All sampling equipment is decontaminated prior to sampling. The frequency of decontamination is based on the type of sampling. For those waste streams undergoing composite sampling, equipment is not

decontaminated between individually collected samples making the composite. For waste undergoing grab sampling, equipment is decontaminated after each collected sample. In every case, equipment is decontaminated between different waste streams. Periodically, an equipment blank is collected after the equipment undergoes final decontamination for a particular waste stream to ensure that the equipment is decontaminated.

The equipment decontamination procedure is described below:

- 1) The sampling equipment is placed over a collection drum and washed using a warm detergent solution and bottle brush.
- 2) The sampler is rinsed several times with tap water to remove detergent residues.
- 3) The sampler is then rinsed with distilled water and the excess water is drained into the drum.
- 4) The sampler is then air dried or rinsed with isopropanol and allowed to dry.
- 5) The clean sampler is placed in a plastic bag or wrapped in aluminum foil.

Chain-of-Custody and Shipping Seals

Sample containers are placed in appropriate shipping containers after sample collection. The containers are cooled, as required, to meet preservation requirements. Sample transport documentation such as analytical requests and chain-of-custody forms are affixed to or placed in the shipping container. The FEMP maintains a strict chain-of-custody procedure for all samples collected for RCRA determination. A chain-of-custody tape or other tamper guard seals are affixed to the shipping container in order to indicate potential container tampering. The shipping container is then sent to the appropriate laboratory for analysis.

C-2d Frequency of Analysis

Waste generated at the FEMP is analyzed whenever there is reason to believe that the process generating the waste has changed. Hazardous waste received at the FEMP from off-site sources is analyzed whenever the fingerprint analysis indicates that the hazardous waste received at the site does not match the hazardous waste description on the hazardous waste manifest and/or Material Evaluation Form (MEF).

The majority of waste generating activities at the FEMP has changed from continuous process sources to project and/or location-specific sources. Wastes generated by unique activities, such as closure/remedial wastes, are sampled and analyzed as they are generated. Wastes that are generated on a continuous basis are usually sampled and analyzed annually unless there is reason to believe that the waste has changed. If there is reason to believe the waste has changed, the waste is sampled and analyzed immediately.

For process wastes that are no longer generated, repeat analysis is not required for proper waste management. Because these wastes are stable and will not change, these wastes are not re-analyzed once they are characterized.

C-2e Additional Requirements for Waste Generated Off-Site

The FEMP will accept hazardous waste from off-site facilities. No hazardous waste from off-site facilities is accepted and/or stored at the FEMP unless the conditions of the Consent Decree and its proposed amendments are met.

Out of State generators, transporters and drivers are required to file a Consent to Service (Ohio Revised Code (ORC) 3734.131) form with the State of Ohio at least 3 days before the initial shipment of waste to the FEMP. The Consent to Service requirements are not applicable to Federal Facilities, but are applicable to Government

Owned Contractor Operators. These forms are to be renewed every 4 years beginning in December 1995 (Note: Consent to Service forms must be refiled by December 1995 or waste can not be transported beginning in 1996 and then every 4 years thereafter). These forms will be kept on file at the facility as part of the operating record.

Generators will provide the FEMP with waste characterization data for each waste stream shipped to the FEMP from an off-site facility as detailed in the Material Evaluation Form in Attachment C-2. Off-site generators are required to provide the same types of data and level of detail that is required to characterize waste generated at the FEMP. Additional data required by the FEMP that is not included on the Material Evaluation Form is submitted to the FEMP as an attachment to the form. This data usually precedes actual shipment of the waste so that FEMP personnel can review the data and confirm that the waste can be stored at the FEMP. The generator is required to furnish the following information for each waste stream:

- Physical parameters such as pH, color, physical state, flashpoint, particle size, specific gravity, density, viscosity, liquid content, compatibility;
- TCLP analytical results for toxicity characteristic constituents;
- RCRA waste code(s) with analytical data if the codes have been determined on the basis of analytical information;
- Land disposal restriction information such as total organic carbon, total suspended solids, constituent specific organic scans as necessary; and
- Generator certifications that the information for each waste stream is complete and accurate.

In some cases, the FEMP may request a sample for preacceptance analysis prior to shipment. The analytes selected for testing are

based on knowledge of the process generating the waste as supplied by the generator. Upon review of the waste determination information, the pre-acceptance/rejection determination is made.

Waste characterization data is evaluated by trained FEMP personnel. If it is determined that the waste can be stored at the FEMP, the generator is notified to schedule shipment of the waste.

When hazardous waste arrives at the FEMP, acceptance verification is initiated by facility personnel according to internal procedures. The following areas are examined prior to acceptance of the waste:

- Shipping Documentation;
- Manifest and land disposal notification/certification;
- Verification of manifest information; container count, weight, waste codes, etc.;
- Container condition;
- Fingerprint analysis of the waste.

Designated trained personnel examine the hazardous waste manifest and land disposal restriction notification and certifications. Absent or incomplete receiving/shipping documentation such as an incomplete hazardous waste manifest or incomplete or missing land disposal restriction information are corrected or completed prior to acceptance of the hazardous waste shipment.

After verification of container condition, proper labeling and documentation, contents of the containers are examined to verify the physical state of the waste. Ten percent of the drum population of each similar matrix waste is sampled and composited to verify the waste characterization. Wastes are sampled and analyzed according to the procedures described in Section C-2. The sample undergoes a fingerprint analysis which includes pH, physical state, flashpoint, specific gravity, and reactivity. Additional samples for verification of waste characterization may be required based on the

results of the fingerprint.

Between receipt of the hazardous waste and verification, the hazardous waste is segregated from other hazardous waste stored at the FEMP or other hazardous waste undergoing acceptance verification. The FEMP does not sign the manifest and formally accept the hazardous waste until fingerprint analysis of the hazardous waste is complete and verified to be within the acceptance criteria described in Table C-7.

The generator is contacted immediately if any discrepancies or other problems are discovered in documentation, condition of containers, or identification of the hazardous waste. If discrepancies cannot be resolved, the generator is informed that the hazardous waste shipment has been rejected. When a shipment is rejected, the FEMP completes a new uniform hazardous waste manifest. The generator's name is written in the generator and destination areas. The special instructions section of the manifest identifies the hazardous waste as a rejected shipment and references the attached original manifest from the generator. The FEMP acts as the generator's agent and signs the return manifest. The FEMP will send a letter describing the discrepancy and the attempts to resolve the discrepancy to OEPA and USEPA if the discrepancy is not resolved within 15 days of discovery of discrepancy.

If the hazardous waste meets acceptance criteria, the hazardous waste stream is assigned FEMP material and source codes, a FEMP Reactivity Group Code and a drum number. Each container is then entered into the facility's hazardous waste tracking system. The hazardous waste tracking system is used to identify and track the location and contents of each hazardous waste container stored at the FEMP. The system records the drum number, hazardous waste code(s), location of the drum, FEMP material and source codes, and the FEMP Reactivity Group Code. Each drum is assigned a storage location based on the physical state, compatibility and flammability

of the waste. Any subsequent movement of the hazardous waste at the FEMP is recorded in the hazardous waste tracking system.

C-2f Additional Requirements for Ignitable, Reactive and Incompatible Wastes

Liquid ignitable hazardous wastes are identified through process knowledge or by use of the Pensky-Martens Closed Cup test (EPA Method Number 1010) to determine the flashpoint of the waste.

A small quantity of reactive hazardous wastes have been generated and stored at the FEMP. Reactive hazardous wastes are stored in areas that are compatible with the material stored and are separated from incompatible hazardous wastes. Each hazardous waste stream is assigned a Reactivity Group Code based on the process knowledge and analytical data provided for each hazardous waste stream on the Material Evaluation Form. Only compatible hazardous wastes are stored within each storage unit or containment system.

C-3 WASTE ANALYSIS REQUIREMENTS PERTAINING TO LAND DISPOSAL RESTRICTIONS
(LDR)

Section C-3 has been prepared in accordance with the requirements of OAC 3745-59 and 40 CFR Part 268.

Third-third rule mixed waste, which include the majority of mixed wastes, had been granted a National Capacity Variance until May 8, 1992. Under this variance, mixed waste, with the exception of spent solvent, dioxin-containing waste, and California list wastes, may be land disposed in units that meet minimum technical requirements without meeting the treatment standard. However, the requirements for waste analysis under OAC 3745-59-07 and 40 CFR 268.7 still apply to hazardous waste under a National Capacity Variance. These requirements include determination of treatability groups, subcategories, and treatment standards for all restricted hazardous wastes, including Third-third mixed waste. Attachment C-3 is an example of the type of form used to document the information used to complete the LDR waste characterization.

C-3a Waste Characterization

As a generator and storage facility for mixed waste, the FEMP is required to determine whether its hazardous waste is restricted from land disposal and to properly manage the hazardous waste in accordance with those restrictions.

As described in Section C-2, hazardous wastes are assessed to determine the applicability of all possible hazardous waste codes including both listed and characteristic codes. For hazardous wastes that carry more than one hazardous waste code, subcategories and treatability groups are determined for each hazardous waste code. The FEMP also determines whether the hazardous waste meets applicable treatment standards for each hazardous waste code identified.

Process knowledge may be used to determine the hazardous waste's subcategory such as D001, high Total Organic Carbon, and treatability group wastewater or non-wastewater. In addition, process knowledge may be used to determine whether hazardous wastes meet treatment standards.

When process knowledge is not adequate to determine a hazardous waste's subcategory and treatability group, the hazardous waste is analyzed according to the procedures and analytical methods discussed in Section C-2. In addition, restricted hazardous wastes may require analysis to confirm that they meet concentration based treatment standards for certification purposes.

C-3a(1) Waste Characteristics: Solvent Wastes and Dioxin-Containing Wastes

The FEMP does not accept, generate or store any dioxin-containing wastes identified as F020-F023 or F026-F028. Therefore, the land disposal restrictions for dioxin-containing waste are not applicable to hazardous wastes generated at the FEMP.

The FEMP does accept, generate, and store spent solvent wastes identified as F001-F005. Process knowledge is generally adequate to determine that solvent wastes generated and stored on-site do not meet treatment standards. The FEMP requires analytical data when certifying treatment standards have been met, prior to accepting any F001-F005 spent solvent wastes from off-site sources.

Hazardous wastes containing spent solvents may meet treatment standards in some instances. In these cases, the FEMP uses existing analytical data and process knowledge, or conducts additional analyses to certify compliance with the treatment standards.

When analyses are required, spent solvent waste is analyzed to determine if the hazardous waste meets concentration based treatment standards by the TCLP, except for F005 and F002 wastes containing benzene and 1,1,2-trichloroethane. The treatment standards for these hazardous wastes are based on the total composition of the hazardous waste, therefore, analysis is performed to determine the total concentration of benzene and 1,1,2-trichloroethane in these hazardous wastes.

Upon receipt of the analytical results, the FEMP compares the results to the treatment standards in 40 CFR 268.41 and 268.43. If the results show that the treatment standards have been met, the FEMP certifies that the hazardous waste meets treatment standards.

C-3a(2) Waste Characteristics: California List Wastes

With the promulgation of the Third-third rule, most of the treatment standards or statutory prohibition levels associated with the California list were superseded by more stringent, waste-specific treatment standards. California list restrictions still apply, however, for hazardous wastes subject to a National Capacity Variance. After May 8, 1992, in certain cases, California list treatment standards or statutory prohibition levels will apply to mixed waste in addition to the Third-third treatment standards. These cases are noted below in discussion of each of the California list restrictions.

Acid Wastes

Treatment standards have been promulgated for acidic hazardous wastes under the Third-third rule, therefore the California list restrictions for acidic hazardous wastes have been superseded, except as they apply to Third-third mixed waste under National Capacity Variance. Acidic hazardous wastes are

tested in accordance with the procedures and methods discussed in Section C-2.

Halogenated Organic Compounds (HOCs)

California list restrictions apply to hazardous wastes which contain over 1,000 milligrams per liter (mg/l) of Hazardous Organic Compounds (HOCs) as defined in 40 CFR 268 Appendix III. Many of the compounds identified in the HOC list are also listed hazardous wastes and therefore the treatment standard for the listed waste may take precedence. During the National Capacity Variance for Third-third mixed waste, however, the California list restrictions may apply to the hazardous waste stream while the Third-third treatment standard is not in effect. Solid and liquid hazardous wastes suspected of containing HOCs are tested in accordance with the procedures and methods discussed in Section C-2.

Aqueous wastes with less than 10,000 mg/l of HOCs must be treated to a concentration of less than 1,000 mg/l HOCs prior to land disposal. No treatment method is specified. The following wastes must be destroyed in a RCRA-regulated incinerator or treated by an alternate approved method:

- Aqueous wastes with 10,000 mg/l or more of HOCs;
- Non-aqueous liquid wastes with 1,000 mg/l or more HOCs;
- Sludges or solids with 1,000 mg/l or more HOCs.

PCBs

Liquid PCB wastes (as determined by process knowledge or analytical data) may become subject to the land disposal restrictions if they are mixed with listed hazardous waste or if they exhibit a hazardous waste characteristic (except for Toxicity Characteristic wastes D018-D043 which are excluded from regulation under 40 CFR 261.8). Hazardous wastes suspected of containing PCBs are tested in accordance with the

procedures and methods discussed in Section C-2.

PCBs that are subject to the California list restrictions are treated by the following specific methods:

- Liquids with 50 parts per million (ppm) or more PCBs but less than 500 ppm must be incinerated or burned in high efficiency boilers;
- Liquids with 500 ppm or more PCBs must be incinerated.

Cyanide Wastes

Specific standards have been issued for cyanide wastes (D003, F-, P-, and U-list wastes). Therefore, the California list standards for liquid hazardous waste containing cyanide have been generally superseded, except as they apply to Third-third mixed waste under the National Capacity Variance. Hazardous wastes suspected of containing cyanide are tested in accordance with the procedures and methods discussed in Section C-2.

Heavy Metals

The California list restrictions applicable to liquid hazardous wastes that contain specified concentrations of the eight RCRA metals that are toxicity characteristic waste have been superseded by the Third-third rule, except as they apply to Third-third mixed waste under a National Capacity Variance. California list standards for nickel and thallium are still applicable to all liquid hazardous waste. Liquid hazardous wastes suspected to contain California list heavy metals are tested in accordance with the procedures and methods discussed in Section C-2.

C-3a(3) Waste Characteristics: First-Third Waste With Treatment Standards

The FEMP uses process knowledge and/or supplemental analytical data to determine whether First-third hazardous wastes meet applicable treatment standards. Where analysis is required, representative samples are collected and analyzed using the procedures described in Section C-2.

In most cases, process knowledge is used to determine that hazardous wastes do not meet treatment standards and to determine treatability groups and subcategories. However, when process knowledge is not adequate or when the FEMP believes that the hazardous waste does meet treatment standards, the hazardous waste is analyzed to determine LDR treatability groups and subcategories, and to confirm whether the hazardous waste meets treatment standards.

C-3a(4) Second-Third Wastes With Treatment Standards

The FEMP uses process knowledge and/or analytical data to determine whether Second-third hazardous wastes meet applicable treatment standards. Where analysis is required, representative samples are collected and analyzed using the procedures described in Section C-2.

In most cases, process knowledge is used to determine that hazardous wastes do not meet treatment standards and to determine treatability groups and subcategories. However, when process knowledge is not adequate or when the FEMP believes that the hazardous waste does meet treatment standards, the hazardous waste is analyzed to determine treatability groups and subcategories, and to determine if the hazardous waste meets treatment standards.

C-3a(5) Third-Third Wastes

Treatment standards for all Third-third hazardous wastes, including any First- and Second-Third hazardous wastes rescheduled to the Third-third, were promulgated on May 8, 1990. The FEMP uses process knowledge and/or analytical data to determine whether Third-third hazardous wastes meet applicable treatment standards. Where analysis is required, representative samples are collected and analyzed using the procedures described in Section C-2.

In most cases, process knowledge is used to determine that hazardous wastes do not meet treatment standards and to determine treatability groups and subcategories. However, when process knowledge is not adequate or when the FEMP believes that the hazardous waste does meet treatment standards, the hazardous waste is analyzed to determine treatability groups and subcategories, and to determine if the hazardous waste meets treatment standards.

C-3a(6) Soft Hammer Wastes

With promulgation of the Third-third rule on May 8, 1990, soft hammer restrictions became obsolete, therefore this section is no longer applicable.

C-3b Notification and Certification Requirements

Attachment C-4 is an example of the type of form used to document the LDR information necessary to complete the notification/certification forms that must accompany each off-site hazardous waste shipment. Examples of the types of notification/certification forms that may be used by the FEMP are included in Attachment C-5. The specific notification/certification forms that may be used by the FEMP are discussed below.

Waste Meeting Applicable Treatment Standards

If the hazardous waste meets applicable treatment standards, each off-site shipment of hazardous waste is accompanied by the appropriate notification/certification shown in Attachment C-5. The notification includes the Manifest Number, Hazardous Waste No., the Subcategory if applicable, the Treatability Group, the CFR reference for the treatment standard, and the five-letter code where the treatment standard is a specified technology. In addition, for F001-F005 spent solvents and F039 multi-source leachate the concentration based treatment standards are provided for each hazardous constituent identified. The certification is signed by an authorized facility representative.

Waste Not Meeting the Applicable Treatment Standard

If the hazardous waste does not meet applicable treatment standards, a notification accompanies each off-site shipment (see sample form in Attachment C-5). The notification includes the Manifest Number, Hazardous Waste No., the Subcategory if applicable, the Treatability Group, the CFR reference for the treatment standard, and the five-letter code where the treatment standard is a specified technology. For F001-F005 spent solvents and F039 multi-source leachate the concentration based treatment standards are provided for each hazardous constituent identified. All applicable California list restrictions under RCRA Section 3004(d) are also identified. The sample notification form for hazardous wastes not meeting the applicable treatment standards is provided in Attachment C-5.

Waste with Applicable Extensions

If a hazardous waste is subject to a case-by-case extension or a national capacity variance, the notification identified as "Restricted Wastes Exempt from Land Disposal Prohibitions" in Attachment C-5 is completed prior to shipment of the hazardous waste. The notification includes the Manifest Number, Hazardous Waste No., the Subcategory if applicable, the Treatability Group, the CFR reference for the treatment standard, and the five-letter

code where the treatment standard is a specified technology. For F001-F005 spent solvents and F039 multi-source leachate the concentration based treatment standards are provided for each hazardous constituent identified. In addition, all applicable California list restrictions under RCRA Section 3004(d) are identified. The notification also identifies the specific exemption that applies to the hazardous waste.

Treatment of Characteristically Hazardous Waste

If the FEMP treats a characteristically hazardous waste such that the treatment removes the characteristic and subsequently sends the treatment residue to a Subtitle D facility, a notification and certification form is sent to the OEPA Director and EPA Regional Administrator. An example of this form is provided in Attachment C-5 and identified as "Notification and Certification for Wastes No Longer Exhibiting a Characteristic That Is Sent To Subtitle D Facilities." The notification includes the Hazardous Waste No. before treatment, the Subcategory if applicable, the Treatability Group, the CFR reference for the treatment standard, and the five-letter code where the treatment standard is a specified technology. The notification also identifies the originating facility and facility EPA hazardous waste Number and the RCRA Subtitle D facility to which the waste was sent.

Lab Packs

The FEMP completes specific notification/certification forms when shipping organo-metallic or organic lab packs to off-site facilities. Examples of the notification/certification forms for lab packs are provided in Attachment C-5. The notification includes the Manifest Number, Hazardous Waste No., the Subcategory if applicable, the Treatability Group, the CFR reference for the treatment standard, and the five-letter code where the treatment standard is a specified technology. In addition, for F001-F005 spent solvents and F039 multi-source leachate the concentration based treatment standards are provided for each hazardous

constituent identified. The certification is signed by an authorized facility representative.

C-3b(1) Retention of Generator Notices and Certifications

As discussed in Section C-2e, submission of a complete notification/certification form is required prior to acceptance of any hazardous waste from off-site sources. If visual inspection of the hazardous waste and fingerprint analyses lead the FEMP to suspect that the notification/certification form is incorrect, issues are resolved prior to acceptance of the hazardous waste as further detailed in Section C-2e.

Completed notification/certification forms from off-site generators are filed upon receipt as part of the FEMP operating record.

C-3b(2) Notification and Certification for Wastes to be Further Managed

Prior to shipment of any hazardous waste stored at the FEMP to an off-site facility, the FEMP completes a notification/certification form in accordance with the requirements for generators in 40 CFR 286.7 as discussed in Section C-3b. The completed notification/certification form is retained for a minimum of five years (extended indefinitely in the case of unresolved enforcement actions).

C-3b(3) Notification and Certification for Soft Hammer Wastes Not Subject to California List Prohibitions

With the promulgation of the Third-third rule, soft hammer provisions became obsolete, therefore, this section is no

longer applicable.

C-3b(4) Additional Notification and Certification Requirements for Treatment Facilities

The FEMP does not treat hazardous wastes, therefore, this section is not applicable.

C-3b(5) Additional Notification and Certification Requirements for Disposal Facilities

The FEMP is not a disposal facility, therefore this section is not applicable.

C-3b(6) Notification and Certification Requirement Pertaining to Landfill and Surface Impoundment Disposal Restrictions

As stated in 40 CFR 268.8(a) this requirement has not been effective since May 8, 1990, therefore, this section is not applicable.

C-3c Additional Requirements Pertaining to Storage of Restricted Wastes

The FEMP stores hazardous and mixed waste. Under the land disposal restrictions, storage of hazardous waste is allowed "solely for the purpose of accumulation of such quantities of hazardous waste as necessary to facilitate proper recovery, treatment, or disposal (40 CFR 268.50)." As discussed previously, however, currently there are very few permitted facilities for the treatment or disposal of mixed wastes.

Mixed wastes were granted a National Capacity Variance to the effective date of the land disposal restrictions which expired

May 8, 1992. This means that the storage prohibition became effective on that date. The EPA provided the following guidance in the preamble to the Third-third rule (55 FR 22673):

"No firm time limit is established pursuant to Section 268.50. Generators and owners and operators can store as long as necessary. The legislative history makes it clear that the intent of . . . Section 268.50 is to prohibit the use of long-term storage to circumvent the treatment requirements imposed by the Land Disposal Restrictions. However, if prohibited wastes are stored beyond one year, the owner/operator has the burden of proving (in the event of an enforcement action) that such storage is for the allowable reason; prior to one year, EPA maintains the burden of proving that storage has occurred for the wrong reason."

In addition the EPA issued a policy statement on the civil enforcement of the storage prohibition at facilities which generate mixed waste on August 29, 1991 (56 FR 42730). The policy, which expires on December 31, 1993, states that enforcement of the storage prohibition on generators of small quantities of mixed waste (1,000 cubic feet or less) who are operating in an environmentally responsible manner will be a low priority. The current waste generation rate at the FEMP is being assessed to determine whether the FEMP meets these standards.

The DOE is exploring options and methods for treatment/disposal of mixed waste. Until additional facilities are permitted to receive mixed waste, however, there are very limited options for removal of the waste to off-site facilities.

C-3c(1) Restricted Wastes Stored in Containers

The FEMP has developed and implemented a procedure to label hazardous waste containers. At a minimum, the container

Labels identify the contents of the container and the dates on which accumulation or storage of the hazardous waste began. Container management activities are described in greater detail in Section D, Process Information.

C-3c(2) Restricted Wastes in Tanks

The FEMP is not seeking a permit to store hazardous waste in tanks. In addition, the FEMP does not store restricted hazardous wastes in tanks excluded from permitting requirements under 40 CFR 270.1(c)(2).

C-3c(3) Storage of Liquid PCB Wastes

Liquid PCB wastes on site are stored in indoor hazardous waste storage areas. These storage areas are designed and constructed to meet the facility standards established in 40 CFR 761.65(b). As discussed in Section C-3c, the FEMP may be required to store the mixed TSCA/RCRA/radioactive waste on site for greater than one year because of the lack of treatment or disposal facilities for mixed waste.

C-3d Additional Requirements for Treatment Facilities

Because the FEMP does not treat hazardous wastes, this section is not applicable to the FEMP.

C-3e Additional Requirements for Land Disposal Facilities

Because the FEMP does not dispose of hazardous waste on site, this section does not apply to the FEMP.

C-3f Exemptions From and Extensions To Land Disposal Restrictions

The FEMP has not applied for a case-by-case extension to an

effective date, exemption from a prohibition, or variance from the land disposal restrictions.

C-3f(1) Case-by-Case Extension to an Effective Date

The FEMP has not applied for an extension to the effective date of any restriction listed in 40 CFR Part 268 Subpart C.

C-3f(2) Exemption from a Prohibition

The FEMP has not applied for an exemption from a prohibition for the disposal of a restricted hazardous waste.

C-3f(3) Variance from a Treatment Standard

The FEMP has not applied for a variance from any treatment standard.

C-3f(4) Additional Requirements for Surface Impoundments Exempted from Land Disposal Restrictions

The FEMP is not seeking a permit for the treatment of hazardous waste in a surface impoundment.

C-3g Requirements for Land Disposal Facilities with an Approved Exemption or Extension

The FEMP has not been granted an exemption, extension or variance from the land disposal restrictions. If a case-by-case extension or exemption from the storage prohibitions of 40 CFR 268.50 is ever granted to the FEMP, the FEMP will provide a copy of the Notice of Approval to the OEPA Director and EPA Regional Administrator.

TABLE C-1
RCRA REGULATED HAZARDOUS WASTE STORAGE

Revised: August 26, 1992

WASTE NAME	PHYSICAL STATE (1)	U.S. EPA HAZARD WASTE NOs.	BASIS FOR HAZARD LISTING (2)	WASTE SOURCE	LAND BAN STATUS (4)	MATERIAL AND SOURCE CODES (5)
1,1,1-TRICHLOROETHANE STILL BOTTOMS	SL	F001, D001	I, T	SOLVENT DISTILLATION	R(c)	043-YAQ
1,1,2-TRICHLOROETHANE	L	U227	T	LABORATORY	R(e)	013-733
1,4-DIOXANE	L	U106, D001	I, T	LABORATORY	R(e)	013-733
ACETONITRILE SOLUTION (USED)	L	D001, U003	I	LABORATORY	R(b)	013-733
ACETONITRILE SOLUTION	L	F001, F002, D002, D007	I, T	LABORATORY	R(b)	013-733
ACID DIGESTATES	L	D004, D019, D028, D039	C, E, T	CHEMNUCLEAR	R(c)	047-CNL
ADHESIVES	L	D001	I	WASTE MANAGEMENT	R(b)	[003-700]
AEROSOL PAINT CANS, NON-EMPTY	L, S	D001	I	PLANTS 1, 2/3, 5, 6, LABORATORY GARAGE	R(b)	003-100, 003-241, 003-500, 003-600, 003-741, 003-733, 003-746, 003-775
AGITENE	L	D001, D005, D008	E, J	BOILER PLANT	R(b)	[015-768]
AMMONIUM VANADATE	L	P119	H	LABORATORY	R(e)	013-733
BARIIUM CHLORIDE	L	D005	E	LABORATORY	R(b)	010-733
BARIIUM CHLORIDE CHROME RESIDUE	L	D007	E	LABORATORY	R(b)	012-300
BARIIUM CHLORIDE SALT	L	D005	E	BARIIUM CHLORIDE TREATMENT PROCESS	R(b)	044-FTA, 060-FTA,
BARIIUM HYDROXIDE	S, SL	D005	E	METAL HEATING TREATING	R(b)	013-733
BARIIUM SULFATE FILTER CAKE	SL	D001, D005, D007	E	LABORATORY	R(b)	045-300
BATTERIES	SL	D002, D006, D009	E, J	PILOT PLANT	R(b)	[003-746, 003-775]
BATTERIES, FLASHLIGHT/BEEPER	S, SL	P015	C, E	MACHINE AND MAINTENANCE SHOP	R(d)	[003-600]
BERYLLIUM	L, S	D007, D011	H	PLANT 6	R(b)	013-530
BLENDED AND SCREENING SOLIDS	S	D001	E	LABORATORY	R(b)	111-550
BRIQUETTABLE CHIPS AND TURNINGS	S	D005	E	MOLD AND CRUCIBLE COATING	R(b)	043-732
CADMIUM SPRINGS	S	D001, D002, D007	C, E, J	LABORATORY	R(b)	053-743, 053-927
CHROMIC ACID	L	D001, D003	I, R	PLANT 5 SAW AREA	R(b)	013-733
COBALT TRIFLUORIDE	S	D004, D008, D010	E	STORES, PLANT 9	R(b)	047-733
CONTACT WASTE	S	F001, F002, F005	E	LABORATORY	R(b)	047-TCT
CONTACT WASTE	S	D005	E	LABORATORY	R(b)	047-CNL
CONTAMINATED ALUMINA-SODA LIME	S	D005	E	LABORATORY	R(b)	[018-FYC]
CONTAMINATED BURNABLES	S	F001, F005	E	TWIN CITY TESTING	R(c)	027-362
CONTAMINATED BURNABLES	S, L	F001, D006, D011	E, T	CHEMNUCLEAR	R(b)	027-310
CONTAMINATED BURNABLES	S, L	F001	T	PILOT PLANT	R(c)	027-820
CONTAMINATED BURNABLES	S	F001, F005, D011	E, T	PILOT PLANT	R(c)	027-HXA
CONTAMINATED BURNABLES	S	F002, D007	E, T	PILOT PLANT	R(c)	027-824
CONTAMINATED BURNABLES	S	F001, F002	T	PILOT PLANT	R(c)	017-824
CONTAMINATED BURNABLES	S	D001, D003	I, R	PILOT PLANT	R(b)	019-500, 019-510
CONTAMINATED GRAPHITE	S, L	D009	E	HANFORD	R(b)	061-733
CONTAMINATED MAGNESIUM	S	D008, D010	E	PLANT 6 MACHINING	R(b)	025-900
CONTAMINATED MERCURY	S	D001	E	PLANT 9	R(b)	028-742
CONTAMINATED METALLIC FILTER ELEMENTS	L, S	F002, D004, D006, D011	E	DECONTAMINATION	R(b)	025-210, 026-100
CONTAMINATED NONBURNABLES	L, S	F002	I	PLANT 1, PLANT 2/3 DIGESTION	R(c)	026-100
CONTAMINATED NONBURNABLES	S	D011	T	PLANT 1	R(c)	011-211
CONTAMINATED NONBURNABLES	S	D004, D005, D007, D008, D010, D011	E, T	PLANT 2/3 DIGESTION	R(b)	011-212
CONTAMINATED NONBURNABLES	S	D007, D011	E	PLANT 2/3 DIGESTION	R(b)	011-430
CONTAMINATED SOIL	L, S, S	D004, D008, D011	E	PLANT 4	R(b)	011-430
CONTAMINATED SOIL, ROCKS, BRICKS	S	D007, D011	E	PLANT 5 CASTING	R(b)	011-530
CONTAMINATED SOIL, ROCKS, BRICKS	S, L	D004, D008, D011	E	PLANT 5 CASTING	R(b)	

3820

63

TABLE C-1

RCRA REGULATED HAZARDOUS WASTE STORAGE

Revised: August 26, 1992

WASTE NAME	PHYSICAL STATE	U.S. EPA HAZARD WASTE NO.	HAZARD BASIS FOR LISTING (2)	WASTE SOURCE	LAND BAN STATUS	MATERIAL AND SOURCE CODES (3)
CONTAMINATED SOIL, WATER, ROCKS, BRICKS	L, S	D006	E	PLANT 1, WASTE MANAGEMENT	R(b)	011-100, 011-700
CONTAMINATED SOIL WITH FREE LIQUIDS	L, SL	D002, D004, D007, D008, D011	C, E	PLANT 2/3 DIGESTION	R(d)	011-211
CONTAMINATED SOIL AND ROCKS	S	D005	E	FMI	R(b)	011-FTA
CONTAMINATED SOIL AND ROCKS	S	D005, D008, D007, D008, D009	E	PLANT 5	R(b)	011-500
CONTAMINATED SOLVENT	L	F001	T	DECONTAMINATION	R(c)	[013-742; 013-202]
CONTAMINATED/SPENT SOLVENTS	L	F001, F002, D018	E, T	PLT 2/3, GARAGE, BOILER PLANT	R(c)	[003-768; 013-202; 013-738; 013-768]
CONTAMINATED SUMP OIL	L	F002, F003, F005, D001, D008	E, T	DRUM BALER	R(c)	012-137
CONT. PROTECTIVE CLOTHING (TANK 5)	S	D019, D035, D039, D040	E, T	GENERAL SUMP	R(c)	[027-761]
CONTAMINATED WATER	L	F001, F005	T	PLANT 1 SAMPLING LINE	R(c)	012-140
COOLING TOWER WOOD AND SEMISOLIDS	S, SL	F003, D001	I	WATER TREATMENT	R(c)	012-140
COPPER CONTAMINATED SUMP CAKE	L, S	D037	E	GENERAL SUMP	N(a)	[027-765; 043-765]
COPPER CONTAMINATED SUMP CAKE	L, S	D001	I	PLANT 6	R(b)	002-761
CYANIDE CARBONATE	S	F001	T	LABORATORY	R(c)	002-811
DIESEL FUEL/RAINWATER	L	D003	R	GARAGE, UST # 3	R(d)	[047-733]
DIGESTS FROM MERCURY ANALYSIS	L	D018	E	TWIN CITY TESTING	N(a)	[012-741; 022-741]
DISCARD MAINTENANCE PRODUCTS	L	D002, D008, D010	C, E	PLANT 1	R(d)	047-TC
DISCARD MAINTENANCE PRODUCTS	S	D001, D018	E, J	RUST BLDG., PLANT 1, K-65 GENERAL	R(b)	003-100
DISCARD MAINTENANCE PRODUCTS	L	D001	I	PLANT 1	R(b)	003-100
DISCARD MAINTENANCE PRODUCTS	L	D002	C	PLANT 1	R(b)	003-100
DISCARD MAINTENANCE PRODUCTS	L	D001, D008, D018, D035	E, J	PLANT 1	R(b)	003-100
DISCARD MAINTENANCE PRODUCTS	L	D001, D003, D035	E, J, R	PLANT 1	R(b)	003-100
DISCARD MAINTENANCE PRODUCTS	L	D018	E	GENERAL SUMP, BOILER PLANT	N(a)	001-761; 001-767
DISCARD MAINTENANCE PRODUCTS	L	D001	I	HOT RAFFINATE BUILDING	R(b)	001-235
DISCARD PROCESS RESIDUES	L, S	D002	C	PLANT 6	R(d)	001-610
DISCARD PROCESS RESIDUES	L	D006, D008	E	PLT 6 MACHINING	R(b)	001-620
DISCARD PROCESS RESIDUES	S	D006	E	PILOT PLANT	R(b)	001-361
DISCARD PROCESS RESIDUES	SL	F002, D039	E, T	WASTE WATER TREATMENT	R(c)	001-765
DISCARD PROCESS RESIDUES	L, SL, S	F002, D039, D040, D043	E, T	PLANT 6 DEGREASING	R(c)	001-660
DISCARD PROCESS RESIDUES	S	F002, F008, D008, D007, D008, D018, D040	E, T	LABORATORY	R(c)	001-731
DISCARD PROCESS RESIDUES	S	F005	T	LABORATORY	N(a)	001-900
DISCARD PROCESS RESIDUES	S	D029	E	PILOT PLANT	R(c)	[027-300]
DISCARD PROCESS RESIDUES	S	F001	T	PLANT 1	R(b)	029-101
DRY SPILL CLEANUP	S	D004, D006, D008	E	LABORATORY, PLANT 9	R(b)	029-732; 029-900
DUST COLLECTOR BAGS	S	D007	E	LABORATORY	R(b)	029-965
DUST COLLECTOR BAGS	S, L	D008	E	LABORATORY	R(b)	062-732
DUST COLLECTOR RESIDUES	S	D004, D011	E	LABORATORY	R(b)	062-313; 064-900
DUST COLLECTOR RESIDUES	S, L	D004, D008	E	PILOT PLANT, PLANT 9	R(b)	062-332
DUST COLLECTOR RESIDUES	S, L	D007	E	PILOT PLANT	R(b)	[062-310]; 062-600
DUST COLLECTOR RESIDUES	S	D008	E	PLANT 6, PILOT PLANT	R(b)	062-665; 062-101
DUST COLLECTOR RESIDUES	S	D006, D008	E	LABORATORY	R(b)	013-733
DUST COLLECTOR RESIDUES	S	D001, U117	E	LABORATORY	R(c)	[003-721]
DUST COLLECTOR RESIDUES	L	F001, F002	I	EXPERIMENTAL TREATMENT FACILITY	R(d)	047-CNL
ETHYL ETHER	S	F003, F005, D001, D002	C, J	CHEM/NUCLEAR	R(b)	061-613
FILTER MATERIAL	L	D004	E	PLANT 9	R(b)	061-613
FLAMMABLE ORGANIC EXTRACTS	S	D004, D008	E	PLANT 9	R(b)	061-614
FURNACE SALT	S					
FURNACE SALT	L, S					

TABLE C-1

RCRA REGULATED HAZARDOUS WASTE STORAGE

Revised: August 26, 1992

MATERIAL AND SOURCE CODES (5)

LAND BAN STATUS

WASTE SOURCE

BASIS FOR HAZARD LISTING (2)

U.S. EPA HAZARD WASTE NO.

PHYSICAL STATE

WASTE NAME

(1)

(2)

(1)

WASTE NAME	PHYSICAL STATE	U.S. EPA HAZARD WASTE NO.	BASIS FOR HAZARD LISTING (2)	WASTE SOURCE	LAND BAN STATUS	MATERIAL AND SOURCE CODES (5)
FURNACE SALT	S	D005	E	PLANT 6	R(b)	[060-011]
FURNACE SALT	S	D007, D008, D010	E	PLANT 6 MACHINING	R(b)	061-020
GASOLINE	L	D001, D018	EJ	DECONTAM, PLANT 1, SERVICE BLDG	R(b)	012-100, 013-300, 013-735,
GRIT BLAST	L,S	D008	E	PLANT 2/3, 8	R(b)	[028-240], 028-000
GROUNDWATER (WELL # 1031 & 2049)	L	F002	T	CLEARWELL	R(c)	012-RGW
INCINERATOR CINDERS	L	F001	T	KELLY INCINERATOR	R(c)	033-240
INCINERATOR CINDERS	L,S	F001	T	OLD INCINERATOR	R(c)	033-782
INCINERATOR CINDERS	L,S	F002	T	RESIDUES FROM GENERATION & BURNING	R(b)	[033-FYA]
LABORATORY ACIDS	S	D001, D002	C,I	LABORATORY	R(d)	[013-733]
LAB-PACKED FLAMMABLE LIQUIDS	L	D001, U108, U117, U161, U213, U359	I,T	LABORATORY	R(e)	013-733
LAB-PACKED WATER AND SAMPLES	L	D007	E	PILOT PLANT SOLVENT EXTRACTION	R(b)	001-375
LEAD	S	D008	E	DECONTAMINATION, PLANT 5	R(b)	003-500, 049-730, 049-742
LEAD ACID BATTERY SPILL CLEANUP	L,S	D002, D008	C,E	LABORATORY	R(d)	049-700
LEAD ACID BATTERIES	L,S	D002, D004, D008	C,E	SITELINE	R(e)	049-741
LEAD AND WOOD SHAVINGS	S	D008	E	GARAGE	R(b)	[049-100]
LEAD BRICKS, WINDOWS, SHASHINGS, HAMMERS	S	D008	E	PLANT 1	R(b)	049-500
LEADED GASOLINE	L	D001, D008, D018	EJ	PLANT 5	R(d)	013-744
LIQUID AND SOLID SAMPLES	L,S	F002, D004, D005, D006, D007, D008, D010, D018	E,T	TANK 12	R(c)	050-700
MAGNESIUM FLAKES	L,S	D003	R	WASTE MANAGEMENT	R(b)	[019-511]
MERCURY BATTERIES	L,S	D002, D009	C,E	PLANT 5	R(d)	[003-241, 003-500, 051-733]
MERCURY BATTERIES AND SPILL CLEANUP	L,S	D002, D009, U151	C,E,T	PLANTS 2, 5, LABORATORY	R(d)	051-733
MERCURY CONTAMINATED DEBRIS	S	D009	E	LABORATORY	R(b)	028-730
MERCURY SPILL RESIDUE	L,S	U151	T	LABORATORY	R(d)	051-733, 051-749
MERCURY SPILL RESIDUE	S	D009	E	INSTRUMENT SHOP, LABORATORY	R(b)	051-733
MERCURY-CONTAINING COMPOUNDS	L,SL	D009	E	LABORATORY	R(d)	051-733
METAL EXTRACTS AND DIGESTS	L	F001, F002, D002, D006, D009, D010	C,E,T	TWIN CITY TESTING	R(c)	047-TCT
METAL EXTRACTS AND DIGESTS (IGNITABLE)	L	F001, F002, F008, D001, D002, D008, D009, D010	C,E,I,T	TWIN CITY TESTING	R(c)	047-TCT
METHANOL/CYCLOHEXANE	L	F003, D001	I	LABORATORY	R(c)	013-733
METHYLENE CHLORIDE EXTRACTS	L	F002	T	CHEMNUCLEAR	R(c)	047-CNL
METHYL ETHYL KETONE AND WATER	L	U189	I,T	DECONTAMINATION	R(b)	[003-742]
METHYL ISOBUTYL KETONE	L	D001, U161	I	LABORATORY	R(e)	013-733
NICKEL-CADMIUM BATTERIES	L,S	D002, D008	C,E	LABORATORY	R(d)	003-733
NON-BRIQUETTABLE CHIPS AND TURNINGS	S	D001	I	PLANT 5, 6, 8, 9	R(b)	110-550, 110-817, 110-820
NON-METALIC SAMPLES	S	D001, D003	I,R	PLANT 1	R(b)	110-832, 110-820
NON-METALIC SAMPLES	S/L	D008	E	RMI	R(b)	047-140
NON-OILY SEMSOLIDS	L,S	D001	I	GENERAL SUMP	R(b)	047-FTA
NON-OILY SEMSOLIDS	S	D007	E	PLANT 9	R(b)	042-761
NON-OILY SEMSOLIDS	L,SL	F001, D019	E,T	GARAGE	R(c)	042-920
NON-OILY SEMSOLIDS	L,S	F001, F002, D006	E,T	PLANT 8	R(c)	042-741
NON-OILY SEMSOLIDS	L,SL	F002, D039	E,T	PLANT 2/3	R(c)	042-824
NON-RECOVERABLE TRASH	S	D007, D010	E	MAINTENANCE	R(c)	042-200
					R(b)	003-745

3820

TABLE C-1

RCRA REGULATED HAZARDOUS WASTE STORAGE

Revised: August 26, 1992

WASTE NAME

PHYSICAL STATE

U.S. EPA HAZARD WASTE NOS.

HAZARD BASIS FOR LISTING (2)

WASTE SOURCE

LAND BAN STATUS

MATERIAL AND SOURCE CODES (5)

WASTE NAME	PHYSICAL STATE	U.S. EPA HAZARD WASTE NOS.	HAZARD BASIS FOR LISTING (2)	WASTE SOURCE	LAND BAN STATUS	MATERIAL AND SOURCE CODES (5)
NON-RECOVERABLE TRASH	S	D008	E	PLANT 2/3	R(B)	003-201
NON-RECOVERABLE TRASH	S,L	D011	E	PILOT PLANT	R(B)	003-300
NON-RECOVERABLE TRASH	S	F001, D029, D039, D040	E,T	PLANT 2/3	R(C)	027-200
NON-RECOVERABLE TRASH	L,SL	F001, D008	E,T	PLANT 2/3, PLANT 8	R(C)	003-200
NON-RECOVERABLE TRASH	L	F002, F005	T	PLANT 1	R(C)	003-100
NON-RECOVERABLE TRASH	L,S	F002, D018	E,T	PLANT 5 CASTING AREA	R(C)	003-530
NON-RECOVERABLE TRASH	L	F003, D001, D007	E,I,T	WASTE WATER TREATMENT PLANT	R(C)	013-765
NON-RECOVERABLE TRASH	S,L	F003, F005, D001	I,T	LABORATORY	R(C)	003-732
OIL AND GAS SPILL CLEANUPS	S	D018	E	SITEWIDE	N(A)	003-700
OIL AND SOLVENTS	L	F002, D001, D007, D008, D010, D018	E,I,T	SITE CLEANUP	R(C)	015-700
OIL CLEAN-UP MATERIALS	S	D018	E	PLANT 1, PLANT 2, LABORATORY	N(A)	[003-137, 003-730, 020-200, 027-200,]
OIL FROM TCLP EXTRACTS	L	D001, D004, D006, D008, D010	E,I	INTERNATIONAL TECHNOLOGY	R(B)	047-ITA
OIL FROM TCLP EXTRACTS	L	F001, F002, F005, D040	E,T	TWIN CITY TESTING	R(C)	047-TCT
OILY HLCO FILTER CAKE	SL	D001	I	PLANT 5, PLANT 1, DRUM BALER	R(B)	[020-137, 020-510]
OILY RAGS	S	D018	E	PLANT 5	N(A)	[003-503]
OILY RAGS	S	F002, D018	E,T	PLANT 8	R(C)	[003-655]
OILY RAGS	S	F002, D010, D018	E,T	GARAGE	R(C)	[003-738]
OILY RAGS	S	F002, D008, D018	E,T	PLANT 2, OIL STORAGE AREAS	R(C)	[003-203, 003-503, 003-747, 003-769, 003-778]
OILY RAGS, CLEANUP MATERIAL	S	F002, D018	E,T	DECONTAMINATION	R(C)	[003-742]
OILY SEMSOLID	L,SL	D001	I	PLANT 6, PLANT 9	R(B)	041-655, 041-940
OILY SEMSOLID	L,S	D001, D010	E,I	PLANT 9	R(B)	041-920, 041-951
OILY SEMSOLID	L,S	F001, D001	I,T	PLANT 6	R(C)	041-810
OILY SEMSOLID	L,SL	F001, D008, D039, D040	E,T	PLANT 2/3	R(C)	039-200
OILY SEMSOLID	L,SL	F002, D018	E,T	PLANT 8	R(C)	[039-656]
OILY SEMSOLID	L,SL	F002	T	PLANT 8	R(C)	041-620, [041-642]
OILY SEMSOLID	L,SL	F002, F003	I,T	PLANT 8	R(C)	[020-800]
OILY SEMSOLID	L,SL	F005, D001, D008, D035	E,I,T	PLANT 6	R(C)	043-135
OILY SEMSOLID	L,SL	F001, D029, D039, D040	E,T	PLANT 8	R(C)	039-655
OILY SEMSOLID	L,SL	F001, F003, F005, D001, D019, D039, D040	E,I,T	PLANT 8	R(C)	039-853
OILY SEMSOLID	SL	D005, D008	E	EXTRUSION & MACHINING OPERATIONS	R(B)	[041-FTA]
OILY SEMSOLID	L,SL	F001, D007	E,T	PLANT 9	R(C)	039-965
OILY SEMSOLID	SL	D018	E	PLTS 1, LABORATORY	N(A)	[039-730, 043-100]
OILY SEMSOLID	L,SL	F001, D010, D035	E,T	PILOT PLANT	R(C)	041-351
OILY SEMSOLID	L,SL	F001, D001, D038	E,I,T	PLANT 8	R(C)	041-800
OILY SEMSOLID	L,S	D008	E	PLANT 2/3, PLANT 9	R(B)	028-200, 041-940
OILY SEMSOLID	L,SL	F001, D008	E,T	PLANT 8	R(C)	039-800
OIL-SOAKED DIRT	S	F001	T	GARAGE	R(C)	[011-741]
ORGANIC LIQUID WASTE	L	F002, D001, D010	E,I,T	TWIN CITY TESTING	R(C)	047-TCT
OXIDIZING CHEMICALS	L	D001	I	LABORATORY	R(B)	013-733
PAINT CHIPS	S	D008	E	SEWAGE TREATMENT	R(B)	049-788
PAINT THINNER	L	D001	I	PILOT PLANT	R(B)	[013-300]
PAINT THINNER	L	F002, F003, F005, D001	I,T	PAINT SHOP	R(C)	[013-748]
PHENOL	L	U186	T	LABORATORY	R(B)	013-733
PLOTTER CLEANING SOLUTION	L	D001	I	ADMINISTRATION BUILDING	R(B)	013-735



TABLE C-1

RCRA REGULATED HAZARDOUS WASTE STORAGE

Revised: August 26, 1992

WASTE NAME

PHYSICAL STATE

U.S. EPA HAZARD WASTE NOS.

WASTE SOURCE

LAND BAN STATUS

MATERIAL AND SOURCE CODES (5)

WASTE NAME	PHYSICAL STATE (1)	U.S. EPA HAZARD WASTE NOS.	BASIS FOR HAZARD LISTING (2)	WASTE SOURCE	LAND BAN STATUS (4)	MATERIAL AND SOURCE CODES (5)
POTASSIUM CYANIDE SOLUTION	L	F008	H	LABORATORY	R(b)	003-733
PRESSURE-TREATED WOOD	S	D006	E	WASTE MANAGEMENT	R(b)	[003-705]
PROCESSOR CLEANER	L	D002	C	ADMINISTRATION BUILDING	R(d)	003-735
PUMP OIL AND RAGS	L,S	F001	T	PLANT 1	R(c)	[003-100]
PVC PIPING (PERCHED WATER PROJECT)	S	F001	T	PLANT 6	R(c)	003-600
RAGS	S	F002, F003, F005	I,T	PAINT SHOP	R(c)	[003-746]
RAGS, GLOVES, PROTECTIVE COVERALLS	S	U107	T	WASTE MANAGEMENT	R(b)	[027-700]
RAGS w/1,1,1-TRICHLOROETHANE	S	F001, F002, D008, D018	E,T	MAINTENANCE SHOP	R(c)	[003-502]
RAM PIT	SL	D003, D018	ER	METAL PRODUCTION AREA	R(b)	[014-514]
RINSE WATER FROM ETf REMOVAL	L	F001, F002	T	EXPERIMENTAL TREATMENT FACILITY	R(c)	[012-721]
ROASTED CALCIUM PRECIPITATED SUMP CAKE	S	F001	T	PLANT 8	R(c)	143-811, 143-823
ROASTED MG#2 AND OTHER MATERIAL	S	D004, D008	E	PLANT 8	R(b)	031-828
ROASTED SUMP CAKE	S	D007	E	PLANT 8	R(b)	144-828
SALT SEMSOLIDS	S	D005	E	LABORATORY	R(b)	044-730
SAMPLES, NON-METALLIC, MISC.	L,S	D007	E	LABORATORY	R(b)	047-731
SAND/GRIT BLAST PAINT RESIDUES	L,S	D006	E	SAND BLASTING	R(b)	006-700
SCRAP SALTS	S	F001	T	PLANT 6 DEGREASER & PICKLING	R(c)	066-060, 066-061
SCRAP SALTS	S	D005, D008	E	RMI	R(b)	066-FTA
SCRAP SALTS	S	D004, D007, D008, D010	E	PLANT 4	R(b)	065-407
SCRAP SALTS	S	D004, D008	E	PLANT 6	R(b)	068-810
SCRAP SALTS	S	D008	E	PLANT 1	R(b)	065-100
SCRAP SALTS	S	D007, D008	E	PADUCAH	R(b)	065-FYC
SCRAP SALTS	S,L	D007	E	PLANT 6	R(b)	044-642, 066-643
SCRAP SALTS	S	D009	E	MIMES, PIKETON, OHIO	R(b)	065-FXA
SCRAP SALTS	S	D010	E	PILOT PLANT REMELT FURNACE	R(b)	065-341
SCRAP SALT SEMSOLIDS	L,S	F002	T	PLANT 9 CASTING	R(c)	044-820
SCRAP SALT SEMSOLIDS	S	F002, D004, D019, D039	E,T	PLANT 4	R(c)	044-400
SCRAP US06	S	F001	T	PLANT 8	R(c)	100-825
SCRAP US06	S	F001, F002	T	PLANT 6	R(c)	154-824, 154-825
SCRAP US06	S	F002	T	LABORATORY, PLANT 8	R(c)	100-732, 101-822
SCRAP US06	S	D005	E	RMI QUENCHING	R(b)	[052-FTA, 101-FTA]
SCRAP US06	S	D004	E	PLANT 5, UNC (HANFORD)	R(b)	101-534, 134-HXA
SCRAP US06	S	D003	R	LABORATORY	R(e)	003-733
SODIUM AMIDE	S/L	D004, D006, D008	E	RMI	R(b)	[066-FTA]
SODIUM URANATE EVAPORATOR RESIDUE	SL	D004, D006, D007, D008	E	ON-SITE AND OFF-SITE WELL DRILLINGS	R(b)	011-ASI
SOIL BORINGS (on/offsite well drillings)	S	D004, D006, D007, D008	E	ON-SITE AND OFF-SITE WELL DRILLINGS	R(c)	011-ASI
SOIL BORINGS (on/offsite well drillings)	S	F002, D039, D040	E,T	MAINTENANCE AREA, PILOT PLANT	R(c)	011-ASI
SOIL BORINGS (on/offsite well drillings)	S	F001	T	ON-SITE AND OFF-SITE WELL DRILLINGS	N(a)	011-ASI
SOIL BORINGS (on/offsite well drillings)	S	D040	E	ON-SITE AND OFF-SITE WELL DRILLINGS	R(b)	011-ASI
SOIL BORINGS (on/offsite well drillings)	S	D006, D007, D008	E	ON-SITE AND OFF-SITE WELL DRILLINGS	R(b)	011-ASI
SOIL BORINGS (on/offsite well drillings)	S	D004, D005, D006, D007	E	ON-SITE AND OFF-SITE WELL DRILLINGS	R(b)	011-ASI
SOIL BORINGS (on/offsite well drillings)	S	D004, D006, D007, D008	E	ON-SITE AND OFF-SITE WELL DRILLINGS	R(b)	011-ASI
SOIL BORINGS (on/offsite well drillings)	S	D004, D005, D006, D007, D008, D011	E	ON-SITE AND OFF-SITE WELL DRILLINGS	R(b)	011-ASI
SOIL BORINGS (on/offsite well drillings)	S	D005, D006, D007, D008	E	ON-SITE AND OFF-SITE WELL DRILLINGS	R(b)	011-ASI
SOIL WITH OIL AND WATER	S	D018	E	DECONTAMINATION	N(a)	[011-742]

3820

69

TABLE C-1
RCRA REGULATED HAZARDOUS WASTE STORAGE

Revised: August 26, 1982

MATERIAL AND SOURCE CODES (5)

LAND BAN STATUS (4)

WASTE SOURCE

BASIS FOR HAZARD LISTING (2)

U.S. EPA HAZARD WASTE NO.

PHYSICAL STATE (1)

WASTE NAME

WASTE NAME	PHYSICAL STATE (1)	U.S. EPA HAZARD WASTE NO.	BASIS FOR HAZARD LISTING (2)	WASTE SOURCE	LAND BAN STATUS (4)	MATERIAL AND SOURCE CODES (5)
SOLIDS CONTAMINATED BY LAB SAMPLES	S	D004, D005, D006, D007, D008 D022, F002, F003 F002	E, T	LABORATORY	R(c)	[003-733]
SOLVENT CONTAMINATED PALLET WOOD	S	F001, F002, D018	T	SITE CLEANUP	R(c)	003-700
SOLVENT-CONTAMINATED RAGS	S	F001, F002, D001, D006	E, T	PLANT 2, PAINT SHOP	R(c)	[003-202; 003-746; 003-775.]
SPENT 1,1,1-TRICHLOROETHANE	L	F001, F002, D006, D018	E, T	LAB MAINTENANCE SHOP	R(c)	013-775
SPENT 1,1,1-TRICHLOROETHANE	L	F003, D001	E, T	MAINTENANCE SHOP	R(c)	[013-502]
SPENT ACETONE	L	F001, F003, F005, D001, D019, D022 D028, D029, D035, D039, D040	E, T	LABORATORY	R(c)	013-733
SPENT CHLORINATED SOLVENTS	L	D022	E, T	DEGREASING OPERATIONS	R(c)	013-YAQ
SPENT CHLOROFORM	SL	F003, D001	E	LABORATORY	R(d)	013-733
SPENT METHANOL	L	F002	I	LABORATORY	R(c)	013-733; 013-732
SPENT METHYLENE CHLORIDE	L	D001, D002, D007	T	LABORATORY	R(c)	013-733
SPENT TBP/KEROSENE	L	F003, D001	C, E	PLANT 2/3, LABORATORY	R(d)	[022-221]
SPENT XYLENE	L	U210	I	PAINT SPRAY BOOTHS, LABORATORY	R(c)	013-733
SPILLED TETRACHLOROETHYLENE	S	D005, D007	T	LABORATORY	R(d)	027-733
SUMP CAKE W/FREE LIQUIDS	L, SL	F002, F003, D001, D006, D018, D019, D039, D040	E	PILOT PLANT	R(b)	002-982
SUMP CLEANOUT	L, SL	F001, D029, D039	E, T	PILOT PLANT	R(c)	042-300
SUMP SEMISOLID	L, SL	F001, D018	E, T	GARAGE	R(c)	043-736
TANK 5 (JUST) CLEANOUT	SL	D007	E, T	TANK 5 CONTENTS	R(c)	015-741
TANK 6 CLEANOUT RESIDUES	L, S, SL	D008, D016	E	CLEAN UP ACTIVITIES	R(b)	003-700
TANK CLEANINGS	SL	D018	E	TANKS 1, 2, 6, 9, 10, 11, 12, 13	R(d)	[012-741; 039-100; 039-741]
TANK CLEANINGS	SL	D001, D002, D007	E	TANK 6	N(e)	[039-745]
TBP AND KEROSENE	L	F002, F003, D001, D006, D018, D019, D039, D040	C, E, I	LABORATORY	R(d)	[013-730]
TBP AND KEROSENE	L	F002, F003, D001, D019, D022, D039	E, T	LABORATORY	R(c)	022-732
TBP/KEROSENE SEMISOLID	SL	F002, F005	E, T	LABORATORY	R(c)	022-732
TCLP EXTRACTS	L	D039, U210	T	CHEMNUCLEAR	R(c)	047-CNL
TETRACHLOROETHYLENE (UNUSED)	L	D001, D007, D008	E, T	LABORATORY	R(d)	013-733
THORIUM NITRATE	S	D001, D002, D007, D008 F001, D018	E, J	NBL, ORNL, HANFORD, BETTIS, GSA STOCKPILE USAEC, DAVIDSON CHEM.	R(b)	160-CBH; 160-FZC; 160-HYA; 160-PZA; 160-YQK 150-FAK; 150-FAX
THORIUM NITRATE SOLUTION	L	F003, D005, D009, D007, D008	C, E, I	GARAGE	R(d)	027-741
TRASH	S	U228	E, T	LABORATORY	R(c)	[003-733]
TRASH, CONTAMINATED	S	D007	E, J	LABORATORY	R(d)	013-733
TRICHLOROETHYLENE	L	D001	E	RMI REDOXIDATION	R(b)	[134-FTA]
U308 FOR OXIDATION	S	D002, D005, D007	E	PILOT PLANT	R(b)	079-320
UNFRED REDUCTION CHARGES (THORIUM)	S	D001	I	PLANT 2/3	R(d)	150-200
URANYL NITRATE SOLUTION	L	D011	C, E	PLANT 5 BREAKOUT	R(b)	100-918
URANIUM CHIPS IN CONCRETE	S	D001, D018	I	PHOTO LAB, GRAPHICS, LABORATORY	R(d)	013-730; 013-743; 013-755;
USED DEVELOPING/FIXING SOLUTION	L	D007	E	ADMINISTRATION BUILDING	R(b)	547-700; 013-735
USED MINERAL SPIRITS	L	D005, D006	E, J	SITETIME	R(b)	013-700
USED OIL	L	D006	E	PLANT 9	R(b)	015-900
USED OIL	L	D008, D016	E	PLANT 5	R(b)	015-903
USED OIL	L	F002, D010, D016	E	BOILER PLANT	R(b)	[015-769]
USED OIL	L		E, T	GARAGE	R(c)	[015-759]

20

TABLE C-1
RCRA REGULATED HAZARDOUS WASTE STORAGE

Revised: August 26, 1982

WASTE NAME	PHYSICAL STATE	U.S. EPA HAZARD WASTE NO.	HAZARD BASIS FOR LISTING (2)	WASTE SOURCE	LAND BAN STATUS (4)	MATERIAL AND SOURCE CODES (5)
USED OIL	L	F001, D039, D040	E, T	PILOT PLT. PLANT 6	R(c)	015-351; 015-600
USED OIL	L	F001, F002, D008, D018	E, T	PLANT 2/3	R(c)	[015-203; 015-747]
USED OIL	L	F001, D019, D029, D039, D040	E, T	DRUM BALER	R(c)	015-137
USED OIL	L	F002, D008	E, T	PLANTS 2/3, 8	R(c)	[015-200; 015-600; 015-653]
USED OIL	L	F001	T	PLANT 9	R(c)	015-901
USED OIL	L	F001, D008, D009, D039	E, T	LABORATORY	R(c)	015-730
USED OIL	L	F002, F005, D006, D008, D018, D019, D028, D029, D039, D040	E, T	PILOT PLANT MAINTENANCE	R(c)	015-301
USED OIL	L	F002, D018, D019, D028, D029, D039, D040	E, T	PLANT 1	R(c)	015-100
USED OIL	L	F002, D029, D039	E, T	PILOT PLANT	R(c)	015-300
USED OIL	L	F002, D008, D018	E, T	PLANTS 2/3, MAINTENANCE	R(c)	[015-769; 015-776]
USED OIL	L	F002, D018	E, T	GARAGE, PLANT 1	R(c)	[015-742; 015-137]
USED OIL	L	D018	E	PLANT 1, 2, 4, GARAGE, OIL STORAGE AREA, DECONTAMINATION LABORATORY	N(a)	[009-742; 015-100; 015-107; 015-137; 015-200; 015-400; 015-705; 015-730; 015-739; 015-742; 015-YAQ]
USED OIL	L	F001, D006, D007, D008, D019, D029, D040	E, T	LABORATORY	R(c)	015-921
USED OIL	L	F002	T	PLANT 9 CASTING	R(c)	[015-501; 015-510; 015-530; 015-620; 015-655]
USED OIL FILTERS	S, SL	D018	E	GARAGE	N(a)	[003-741]
USED PAINT THINNER	L	F002, D001, D008	E, J, T	WASTE MANAGEMENT	R(c)	[013-705]
U-CONTAMINATED WATER	L	D039	E	PILOT PLT SOLV EXT. PLANT 2/3	R(d)	001-375; 012-200
VARNISH	L	D001	I	PLANT 1 PAINT BOOTH	R(b)	003-135
VANADIUM PENTOXIDE	L	P120	H	LABORATORY	R(e)	013-733
VEGETATION FROM ETF	S	F001, F002	T	EXPERIMENTAL TREATMENT FACILITY	R(c)	[003-721]
VOLATILE SOLID WASTE	S	D010	E	TWIN CITY TESTING	R(b)	047-TCT
WASTE BENZENE	L	D001, D018	E, J	PLANT 1	R(b)	[013-100]
WASTE BENZENE	L	D001, D018, U019	E, J, T	LABORATORY	R(e)	013-732
WASTE CARBON TETRACHLORIDE	L	D019, U211	E, T	LABORATORY	R(e)	013-732
WASTE ETHYL ETHER	L	D001, U117	I	BUILDING 79	R(b)	013-732
WASTE LABORATORY SOLID	S	D005, D006, D007, D008	E	LABORATORY	R(b)	[003-733]
WASTE PAINT	L, S, SL	D001	I	DRUM PAINTING	R(b)	[003-135; 003-710; 003-743; 013-735; 013-742]
WASTE RAGS, PAPER, ETC.	S	F002, F003, D004, D005, D008, D022	E, J, T	LABORATORY	R(c)	[003-733]
WASTE SOLVENTS	L	D001, D007	E, J	WASTE WATER TREATMENT	R(b)	043-765
WASTE SOLVENTS	L	F003, F005, D001, D039	E, J, T	MAINTENANCE	R(c)	013-745
WASTE SOLVENTS	L	F001, D007, D018, D019, D021, D029, D039, D040	E, T	LAUNDRY OPERATIONS, SERVICE BLDG.	R(c)	013-135
WASTE SOLVENTS	L	F001, F002, D018	E, T	DEGREASING	R(c)	[013-746]
WASTE SOLVENTS	L	F001, F005, D019, D022, D028, D029, D039	E, T	PLANT 5 CASTING	R(c)	013-530
WATER/GAS MIXTURE	L	D001, D008, D018	E, J	TANK 8	R(b)	[012-741]
WATER/GAS MIXTURE	L	D001, D018	E, J	TANK 9	R(b)	[012-741]
WATER/GAS MIXTURE	L	D008, D018	E	TANK 10	R(d)	[012-741]
WET SLURRY CAKE	L, SL	D011	E	CLEANING AREAS	R(b)	068-HXA
WET SLURRY CAKE	L, SL	F002	T	SALT BATH TREATMENT	R(c)	068-VXB

3820

TABLE C-1

RCRA REGULATED HAZARDOUS WASTE STORAGE

Revised: August 26, 1982

WASTE NAME	PHYSICAL STATE (1)	U.S. EPA HAZARD WASTE NOs.	HAZARD LISTING (2)	WASTE SOURCE	LAND BAN STATUS (4)	MATERIAL AND SOURCE CODES (5)
WET SUMP OR FILTER CAKE	L	D002, D007	C,E	HANFORD	R (b)	068-HXA
WET SUMP OR FILTER CAKE	SL	D005	E	PILOT PLANT	R (b)	068-382
WET SUMP OR FILTER CAKE	L,S	F002, F003, F005, D001	I,T	PILOT PLANT 1	R (c)	068-100
WET SUMP OR FILTER CAKE	L,SL,S	F002, D039	E,T	PILOT PLANT	R (c)	068-390, 068-361
WET SUMP OR FILTER CAKE	L,SL,S	F002, D039, D040	E,T	SERVICE BUILDING	R (c)	068-735

KEY:

- (1) LIQUID (L), SOLID (S), SEMI-SOLID (SL)
- (2) IGNITABLE (I), CORROSIVE (C), REACTIVE (R), TOXICITY CHARACTERISTIC (E), ACUTE HAZARDOUS (H), TOXIC (T) WASTES
- (3) POSSIBLE SAMPLE MATRIX INTERFERENCE; WILL BE RE-ANALYZED
- (4) LDR STATUS - Current status with respect to Land Disposal Restrictions regulations:
 - N(e) - not restricted, no LDRs proposed/promulgated for TC organics
 - R(b) - restricted, variance for "third-thirds" mixed waste through 5/8/92 has expired
 - R(c) - restricted from land disposal, LDRs for solvent wastes promulgated 11/8/86
 - R(d) - restricted from land disposal, California waste promulgated 7/8/87
 - R(e) - restricted from land disposal, Third -third waste promulgated 5/8/90

(5) DETERMINATIONS FOR MATERIAL/SOURCE CODES IN BRACKETS ARE SUBJECT TO CHANGE PENDING RECEIPT OF ANALYSIS

SECTION C - WASTE CHARACTERISTICS

TABLE C-4

Waste Codes, Test Methods, and Method Numbers Used to Analyze FEMP Wastes

WASTE CODE	RATIONALE	PARAMETER	EXTRACTION/TEST METHOD	METHOD #
D001	Ignitibility	Flash Point	Pensky-Martens Closed Cup	1010
D002	Corrosivity	pH	Electrode	9040
D003	Reactivity	Cyanides	Colorimetric total and amenable cyanide	9010
D004	Toxic Metal	Arsenic	Inductively Coupled Plasma (ICP)	7060 (7061)
D005	Toxic Metal	Barium	ICP	7080 (7081)
D006	Toxic Metal	Calcium	ICP	7030 (7131)
D007	Toxic Metal	Chromium	Flamc/Furnace AA (FFAA)	7190 (7191)
D008	Toxic Metal	Lead	FFAA	7420 (7421)
D009	Toxic Metal	Mercury	Cold Vapor	7470 (7471)
D010	Toxic Metal	Selenium	FFAA	7740 (7741)
D011	Toxic Metal	Silver	FFAA	7760 (7761)
D012	Toxic Pesticide	Endrin	GCOP/GCMSS	8080/8250
D013	Toxic Pesticide	Lindane	GCOP/GCMSS	8080/8250
D014	Toxic Pesticide	Methoxychlor	GCOP/GCMSS	8080/8270
D015	Toxic Pesticide	Toxaphene	GCOP/GCMSS	8080/8250
D016	Toxic Pesticide	2,4-D	GC Chlorinated Herbicides	8150
D017	Toxic Pesticide	2,4,5-TP Silver	GCCH/GCMSS	8150/8250
D018	Toxic Organic	Benzene	GC Chromatic Volatiles (GCAS)	8020/8240
D019	Toxic Organic	Carbon Tetrachloride	GC MS Volatiles (GCMSV)	8010/8240
D020	Toxic Organic	Chlordane	GC Chlorinated Volatiles (GCCHV/GCMSS)	8080/8250
D021	Toxic Organic	Chlorobenzene	GCOP/GCMSS	8020/8240
D022	Toxic Organic	Chloroform	GCCHV/GCMSS	8010/8240
D027	Toxic Organic	1,4-Dichlorobenzene	GCCHV/GC Chlorinated Hydrocarbon GCMSS	8010/8120/8250
D028	Toxic Organic	1,2-Dichlorobenzene	GCCHV/GCMSS	8010/8240
D029	Toxic Organic	1,1-Dichloroethene	GCCH/GCMSS	8090/8250
D030	Toxic Organic	2,2-Dichlorobenzene	GC Chlorinated Volatiles (GCCHV/GCMSS)	8060/8250
D031	Toxic Organic	Heptachlor	GCOP/GCMSS	8080/8250

SECTION C - WASTE CHARACTERISTICS
 TABLE C-4
 Waste Codes, Test Methods, and Method Numbers Used to Analyze FEMP Wastes

WASTE CODE	RATIONALE	PARAMETER	EXTRACTION/TEST METHOD	METHOD #
D032	Toxic Organic	Hexachlorobenzene	GCCH/GCMSS	8120/8250
D033	Toxic Organic	Hexachlorobutadiene	GCCH/GCMSS	8120/8250
D034	Toxic Organic	Hexachlorocyclopentadiene	GCCH/GCMSS	8010/8240
D035	Toxic Organic	Methyl Ethyl Ketone	GC Nonhalogenated Volatiles (GCNV/GCMSSV)	8015/8240
D036	Toxic Organic	Nitrobenzene	GCNV/GCMSS	8010/8250
D037	Toxic Organic	Pentachlorophenol	GCMSV/GCMSS	8040
D038	Toxic Organic	Pyrene	GCNV/GCMSS	8020/8250
D039	Toxic Organic	Tetrachloroethylene	GCHV/GCMSS	8010/8240
D040	Toxic Organic	Trichloroethylene	GCHV/GCMSS	8010/8240
D041	Toxic Organic	2,4,5-Trichlorophenol	GCMSV/GCMSS	8040/8250
D042	Toxic Organic	2,4,6-Trichlorophenol	GCMSV/GCMSS	8040/8250
D043	Toxic Organic	Vinyl Chloride	GCMSV/GCMSS	8010/8240
F001	Toxic Organic	Toxic Halogenated Solvent	Chlorinated Hydrocarbons	8120
F002	Toxic Organic	Toxic Halogenated Solvent	Chlorinated Hydrocarbons	8120
F003	Ignitable Organic	Ignitable Organic Solvent	GCMS	8240
F004	Toxic Organic	Toxic Non-Halogenated Solvent	GCNV/GCMSS/GCMSSV	8010/8250/8040
F005	Toxic Organic	Toxic Non-Halogenated Solvent	GCMS	8240
P013	Toxic Metals	Beryllium	ICP/FAA	6010/7910 (7911)
P119	Toxic Metals	Ammonium Vanadate	ICP/FAA	6010/7910 (7911)
P120	Toxic Metals	Vanadium Oxide	ICP/FAA	6010/7910 (7911)
P028	Toxic Organic	Benzyl Chloride	GCCH/GCMSS	8120/8250
P031	Toxic Organic	Polychlorinated Biphenyls	GCNV/GCMSS	8010/8250
P075	Toxic Organic	Nicotine	GCNV/GCMSS	8010/8250
P098	Toxic Salt	Potassium Cyanide	Colorimetric, Iodide and Amide Cyanide	9010
P123	Toxic Organic	Toxaphene	GCOP/GCMSS	8080/8250
P133	Toxic Organic	Triphenyl Phosphine Oxide	GCMSV/GCMSS	8010/8250
U227	Toxic Organic	1,1,2-Trichloroethane	GCHV/GCMSS	8010/8240
U228	Toxic Organic	Trichloroethylene	GCHV/GCMSS	8010/8240
U019	Ignitable Toxic Organic	Benzene	GCAV/GCMSS	8020/8240

SECTION C - WASTE CHARACTERISTICS

TABLE C-4

Waste Codes, Test Methods, and Method Numbers Used to Analyze FEMP Wastes

WASTE CODE	RATIONALE	PARAMETER	EXTRACTION/TEST METHOD	METHOD #
U036	Toxic Organic	Chloridene, alpha & gamma isomers	GC/MS/GCMSS	8090/8250
U037	Toxic Organic	Chlorobenzene	GCAV/GCMSV	8020/8240
U043	Toxic Organic	Chloroethane	GOCH	8120
U044	Toxic Organic	Chloroform	GCHV/GCMSV	8010/8240
U052	Toxic Organic	Cresols (Cresolic Acid)	GMSV/GCMSS	8040/8250
U078	Toxic Organic	1,1-Dichloroethylene	GOCH	8120
U079	Toxic Organic	1,2-Dichloroethylene	GOCH	8120
U105	Toxic Organic	2,4-Dinitrotoluene	GCMSS	8090/8250
U127	Toxic Organic	Hexachlorobenzene	GOCH/GCMSS	8120/8250
U128	Toxic Organic	Hexachlorobutadiene	GOCH/GCMSS	8015
U129	Toxic Organic	Cyclohexane	Non-halogenated Volatile Organics (NVO)	8010/8240
U131	Toxic Organic	Hexachloroethane	GCHV/GCMSV	8015
U139	Ignitable Toxic Organic	2,3-Dibromobenzene	NVO	8090/8250
U169	Ignitable Toxic Organic	Nitrobenzene	GCNK/GCMSS	8090/8250
U196	Toxic Organic	Pyridine	GCNK/GCMSS	8120
U210	Toxic Organic	Tetrachloroethylene	GOCH	8120
U211	Toxic Organic	Tetrachloroethane	GOCH	8120
U240	Toxic Organic	2,4-Dichlorophenoxy-acetic acid (Salt & Ester)	GC Chlorinated Herbicides/GCMSS	8150/8250
U247	Toxic Organic	Methoxychlor	GC PAR/GCMSS/HP/CPAB	8100/8250/8310
U018	Toxic Organic	Benzo(a)pyrene	GCMSS	8020
U056	Ignitable Organic	Cyclohexane	GC PAR/GCMSS/HP/CPAB	8100/8250/8310
U050	Toxic Organic	Chrysene	GC Phenols/GCMSS	8040/8250
U101	Toxic Organic	2,4-Dimethyl phenol	GC Halogenated Esters	8060
U102	Toxic Organic	Dibenz(a,h)anthracene	GC Non-Halogenated Volatile Organics	8015
U108	Toxic Organic	1,4-Dioxane	GCNHV/GCMSS	8015/8240
U117	Toxic Organic	Dibutyl Ether	ICP Cold Vapor	7470/7471
U151	Toxic Metal	Mercury		

SECTION C - WASTE CHARACTERISTICS
TABLE C-4

Waste Codes, Test Methods, and Method Numbers Used to Analyze FEMP Wastes

WASTE CODE	RATIONALE	PARAMETER	EXTRACTION/TEST METHOD	METHOD #
U161	Toxic Organic	Methyl Isobutyl Ketone	GC/NH ₂ /GCMSS	8015/8240
U213	Toxic Organic	Tetrahydrofuran	GCMSS	8240
U220	Toxic Organic	Toluene	GC/Aromatic Volatiles/GCMSS	8020/8024
U226	Toxic Organic	Trichloroethane	GCHV	8010/8240
U359	Toxic Organic	Phenyl Glycol Monocethyl Ether	GC/Aromatic Volatiles/GCMSS	8030/8240
	Supplemental	Aluminum	FFAA	7020
	Supplemental	Antimony	FFAA	7040 (7041)
	Supplemental	Beryllium	FFAA	7090 (7091)
	Supplemental	Copper	FFAA	7210 (7211)
	Supplemental	Iron	FFAA	7380
	Supplemental	Lithium	FFAA	SM 303A
	Supplemental	Magnesium	FFAA	7450
	Supplemental	Manganese	FFAA	7460
	Supplemental	Nickel	FFAA	7520
	Supplemental	Potassium	FFAA	7610
	Supplemental	Sodium	FFAA	7770
	Supplemental	Thallium	FFAA	7840 (7841)
	Supplemental	Titanium	FFAA	SM 303C
	Supplemental	Zinc	FFAA	7950
	Supplemental	Particle soil	Microscopy	N/A
	Supplemental	Specific gravity	ASTM D 153	ASTM D 153
	Supplemental	Density	Gravimetric	ASTM D 2216
	Supplemental	Viscosity	Viscosity	9095
	Supplemental	Free Liquid Content	Paint filter liquid test	1311/3005
	Toxic Metal	TCLP Prep Method	TCLP Prep Method	1311/3020 (3040)
	Toxic Semivolatile	TCLP Prep Method	TCLP Prep Method	1311/3510 (3520)
	Toxic Volatile	TCLP Prep Method	TCLP Prep Method	1311/5030

SECTION C - WASTE CHARACTERISTICS

TABLE C-4

Waste Codes, Test Methods, and Method Numbers Used to Analyze FEMP Wastes

WASTE CODE	RATIONALE	PARAMETER	EXTRACTION/TEST METHOD	METHOD #
		Metals	Total Analysis Prep Method	3050 (3010, 3020, 3040)
		Semivolatiles	Total Analysis Prep Method	3530
		Volatiles	Total Analysis Prep Method	5030, (3500, 3540) 3580, 5040
		LDR Treatability Group	Total Organic Carbon	9060
		LDR Treatability Group	Total Suspended Solids	EPA Method 160.2
		LDR California List	Halogenated Organic Compounds (HOC)	9072
		LDR California List	Cyanides	9010
		LDR California List	PCBs	5080
		Compatibility Screening	Commingleing of Wastes Cyanides in Waste	ASTM D 5058 ASTM D 5049
		Screening	Sulfide in Wastes	ASTM D 4978
		Screening	pH of Waste	ASTM D 4980
		Screening	Physical Description of Waste	ASTM D 4979
		Screening	Character in Waste	ASTM D 4981

- Inductively Coupled Plasma (ICP)
- Flame/Furnace AA (FFAA)
- Gas Chromatograph Aromatic Volatiles (GCAV)
- Gas Chromatograph Mass Spectrometer Volatiles (GCMSV)
- Gas Chromatograph Halogenated Volatiles (GCHV)
- Gas Chromatograph Organochloride Pesticide (GCOP)
- Gas Chromatograph Mass Spectrometer Semivolatiles (GCMSS)
- Gas Chromatograph Chlorinated Hydrocarbons (GCCH)
- Gas Chromatograph Nitroaromatic & Ketones (GCNK)
- Gas Chromatograph Nonhalogenated Volatiles (GCNV)
- Gas Chromatograph Electron Capture Detector (GCECD)

RED LINE VERSION

SECTION C

**SECTION C - WASTE CHARACTERISTICS
TABLE OF CONTENTS**

C-1	CHEMICAL AND PHYSICAL ANALYSIS	C-3
	C-1a Containerized Waste	C-4
	C-1b Waste in Tank Systems	C-5
	C-1c Waste in Piles	C-6
	C-1d Landfilled Wastes	C-6
	C-1e Wastes Incinerated and Wastes Used in Performance Tests	C-7
	C-1f Wastes to be Land Treated	C-7
	C-1g Waste in Miscellaneous Treatment Units	C-7
	C-1h Waste in Surface Impoundments	C-8
C-2	WASTE ANALYSIS PLAN	C-9
	C-2a Parameters and Rationale	C-11
	C-2b Test Methods	C-11
	C-2c Sampling Methods	C-13
	C-2d Frequency of Analysis	C-18
	C-2e Additional Requirements for Waste Generated Off-Site .	C-19
	C-2f Additional Requirements for Ignitable, Reactive and Incompatible Wastes	C-23
C-3	WASTE ANALYSIS REQUIREMENTS PERTAINING TO LAND DISPOSAL RESTRICTIONS (LDR)	C-25
	C-3a Waste Characterization	C-25
	C-3a(1) Waste Characteristics: Solvent Wastes and Dioxin-Containing Wastes	C-26
	C-3a(2) Waste Characteristics: California List Wastes	C-27
	C-3a(3) Waste Characteristics: First-Third Waste With Treatment Standards	C-30
	C-3a(4) Second-Third Wastes With Treatment Standards	C-30
	C-3a(5) Third-Third Wastes	C-31

C-3a(6)	Soft Hammer Wastes	C-31
C-3b	Notification and Certification Requirements	C-32
C-3b(1)	Retention of Generator Notices and Certifications	C-34
C-3b(2)	Notification and Certification for Wastes to be Further Managed	C-34
C-3b(3)	Notification and Certification for Soft Hammer Wastes Not Subject to California List Prohibitions	C-35
C-3b(4)	Additional Notification and Certification Requirements for Treatment Facilities . . .	C-35
C-3b(5)	Additional Notification and Certification Requirements for Disposal Facilities . . .	C-35
C-3b(6)	Notification and Certification Requirement Pertaining to Landfill and Surface Impoundment Disposal Restrictions	C-35
C-3c	Additional Requirements Pertaining to Storage of Restricted Wastes	C-36
C-3c(1)	Restricted Wastes Stored in Containers . .	C-37
C-3c(2)	Restricted Wastes in Tanks	C-37
C-3c(3)	Storage of Liquid PCB Wastes	C-37
C-3d	Additional Requirements for Treatment Facilities . . .	C-38
C-3e	Additional Requirements for Land Disposal Facilities .	C-38
C-3f	Exemptions From and Extensions To Land Disposal Restrictions	C-38
C-3f(1)	Case-by-Case Extension to an Effective Date	C-38
C-3f(2)	Exemption from a Prohibition	C-38
C-3f(3)	Variance from a Treatment Standard	C-38
C-3f(4)	Additional Requirements for Surface Impoundments	C-39
C-3g	Requirements for Land Disposal Facilities with an Approved Exemption or Extension	C-39

LIST OF TABLES

Table C-1	RCRA Regulated Hazardous Waste Storage
Table C-2	Analytical and Process Information for FEMP Wastestreams
Table C-3	FEMP Waste Analysis Parameters and Rationale for their Selection
Table C-4	Waste Codes, Test Methods, and Method Numbers Used to Analyze FEMP Wastes
Table C-5	Sampling Equipment for Particular Waste Types
Table C-6	Sample Containers, Preservatives, Holding Times, and Minimum Sample Volumes
Table C-7	Acceptance Criteria on Fingerprint Analysis for Waste Received from Off-site

LIST OF FIGURES

Figure C-1	Material Evaluation Process
------------	-----------------------------

LIST OF ATTACHMENTS

Attachment C-1	Hazardous Waste Compatibility Chart
Attachment C-2	Material Evaluation Form
Attachment C-3	Land Disposal Restrictions Data Documentation Form
Attachment C-4	Land Disposal Restrictions Addendum to the Material Evaluation Form
Attachment C-5	Land Disposal Restrictions Notification/Certification Forms

SECTION C - WASTE CHARACTERISTICS

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

This section of the RCRA Part B Permit Application has been prepared in accordance with the requirements of Ohio Administrative Code (OAC) 3745-50-44(A)(2) and (3) and Title 40 of the Code of Federal Regulations (CFR) 270.14 (b)(2) and (3). The Fernald Environmental Management Project (FEMP), previously the Feed Materials Production Center (FMPC), produced uranium metal used in the fabrication of fuel cores and target fuel elements for the Department of Energy (DOE). The FEMP ceased production in September 1989. The FEMP's primary function was changed in August 1990 from uranium metal production to environmental restoration and site clean-up activities.

The FEMP currently stores wastes generated from inactive on-site production processes, restoration activities, ongoing site maintenance and construction, and off-site DOE facilities. Most hazardous waste stored at the FEMP is mixed waste. Mixed waste is defined as waste that contains both a hazardous waste component regulated under RCRA and a radioactive component consisting of source, special nuclear, or byproduct 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. Because there are limited treatment/disposal facilities permitted for mixed wastes, the FEMP is required to store the hazardous waste on-site until additional treatment/disposal facilities become available.

The FEMP is operating under a Consent Decree and its proposed amendments. Under the proposed amendments to this Consent Decree, the parties have agreed to a schedule for RCRA characterization of waste materials stored on site. Wastes have been divided into three groups based on the

following definitions:

- Backlog Waste: any waste generated on or before June 30, 1990.
- Newly Generated Waste: any waste generated after June 30, 1990.
- Newly Identified Backlog Waste: any waste which was generated prior to June 30, 1990, but was not inventoried until after June 30, 1990.

RCRA characterizations on all backlog wastes are being completed according to the schedule agreed upon in the proposed amendments to the Consent Decree. A Consent Decree Progress Report is submitted quarterly to the Ohio Environmental Protection Agency (OEPA) and includes hazardous waste streams characterized under the proposed amendments to the Consent Decree, as well as hazardous waste streams identified during routine RCRA determinations.

C-1 CHEMICAL AND PHYSICAL ANALYSIS

The information presented in this section is used to:

- establish hazardous waste identification;
- ensure proper handling and storage of the waste;
- evaluate the preacceptance conditions for receipt of waste from on-site and off-site sources; and
- determine compliance with land disposal restriction requirements.

Hazardous wastes currently generated at the FEMP result from activities such as RCRA closures, CERCLA response actions, underground storage tank removals, construction and maintenance, and miscellaneous activities.

Environmental media, such as soil or groundwater, ~~that is generated during any of these activities and contains a hazardous constituent causing it to be determined a hazardous waste, will be managed as such. that is generated during any of these activities and contains a hazardous constituent is managed as a hazardous waste.~~ The media is characterized using the same characterization process used for waste.

Backlog hazardous wastes were generated when the FEMP was operating to produce uranium metal. These processes included metals production and fabrication, maintenance, and general degreasing operations. Hazardous wastes generated during this time were predominantly spent solvents. Hazardous wastes received from off-site DOE facilities that are part of the backlog inventory include spent solvents and barium chloride salts.

The FEMP uses process knowledge and/or analytical data to characterize waste as described in Section C-2 and the FEMP Waste Determination Plan as approved by OEPA. The first step of the waste determination process is evaluation of process information. The FEMP evaluates the adequacy of process knowledge and, if sufficient and conclusive, uses this information to characterize the waste. Typical examples of process knowledge used to complete characterizations include material safety data sheets, standard

operating procedures, personnel interviews, and/or material specifications.

When process knowledge is used to determine that a waste is non-hazardous, supporting documentation is maintained in the facility's files. Additional actions such as a visual inspection, a request for additional process information, and/or a request for sampling and analysis of the waste are taken when process knowledge is inadequate to complete a characterization. After adequate information is gathered for the waste, results are evaluated and RCRA waste codes assigned as warranted.

~~Table C-1 identifies the hazardous wastes managed at the FEMP. Table C-1 identifies the hazardous wastes stored at the FEMP.~~ This table is submitted to OEPA quarterly as part of the Consent Decree Progress Report to update the ongoing waste determination process which is taking place at the FEMP. Table C-2 summarizes the results of the hazardous waste determinations that have been completed at the FEMP based on analytical data or process knowledge.

C-1a Containerized Waste

The FEMP is seeking a permit for storage of containerized hazardous waste. ~~The primary types of containers used for storage include, but are not limited to, 55 gallon and 85 gallon drums. The primary types of containers used for storage include but are not limited to 55 gallon and 85 gallon drums.~~ Additional types of containers that may be used are identified in Section D, Table D-1. Container uses and specifications are also discussed in Section D, Process Information.

Compatibility of the hazardous waste with the container is verified prior to placing a hazardous waste in a container. The verification is completed by comparing analytical data or process knowledge for the hazardous waste to compatibility information for the container. After compatibility verification is completed, the appropriate container is obtained. Most containers used at the FEMP are

constructed of carbon steel or stainless steel.

Containerized hazardous wastes are stored at designated hazardous waste storage areas within the FEMP. Because the construction of the storage areas vary, the waste characterization data is used to determine the appropriate hazardous waste storage area. Two categories of data are used to assist FEMP personnel in selecting a storage location:

- The presence or absence of free liquids, and
- Chemical constituency or compatibility.

Most liquid hazardous waste is stored in the Plant 1 Pad covered structures and inside warehouses. ~~The presence or absence of liquids is determined by Paint Filter Liquid Test (PFLT), visual inspection of the waste, or application of process knowledge. The presence or absence of liquids is determined by a visual inspection of the waste or application of process knowledge.~~

Chemical constituency or compatibility of each hazardous waste is evaluated to ensure that the hazardous wastes stored in a unit are compatible with each other and with the construction of the unit.

A Reactivity Group Code is assigned to each hazardous waste stream to ensure that incompatible hazardous wastes are not stored together. An example of the current Reactivity Group Codes in use at the FEMP is included as Attachment C-1. These Reactivity Group Codes may be modified as additional hazardous wastes are identified at the FEMP.

C-1b Waste in Tank Systems

The requirements of this section are not applicable to the FEMP because the facility is not seeking a permit to operate a tank system to treat or store hazardous waste. ~~The FEMP has tank systems~~

that are classified as hazardous waste management units (HWMUs).
~~The FEMP has hazardous waste management units (HWMUs) that are
classified as tank systems.~~ All of the tank systems will be closed
during site remediation.

A Sampling and Analysis Plan will be developed as part of the RCRA
Closure Plan Information for each tank system. Sampling and
Analysis Plans will address the procedures used to sample and
characterize any hazardous waste in each tank system.

C-1c Waste in Piles

The FEMP is not seeking a permit to operate a hazardous waste pile,
therefore this section is not applicable. No hazardous waste piles
are currently identified at the FEMP.

C-1d Landfilled Wastes

The owner/operator of a hazardous waste landfill is required to
demonstrate the presence or absence of free liquids in bulk or
containerized waste prior to placement in the landfill, and to
provide the methods used to meet these requirements in the Waste
Analysis Plan.

The requirements of this section are not applicable because the FEMP
is not seeking a permit for a hazardous waste landfill. Although
the FEMP has identified two hazardous waste management units (HWMUs)
that are classified as landfills, no additional hazardous waste is
expected to be placed in either landfill. One landfill has been
closed under interim status requirements and the second will be
closed in accordance with schedules submitted under the Consent
Decree and its proposed amendments.

C-1e Wastes Incinerated and Wastes Used in Performance Tests

The owner/operator of an incinerator is required to include the methods that are used to sample and analyze waste prior to incineration in the Waste Analysis Plan. The FEMP is not seeking to permit a hazardous waste incinerator. Therefore, the requirements of this section are not applicable.

The FEMP has identified HWMUs that are classified as incinerators. These incinerators are not in operation and are not expected to be operated to treat hazardous waste. RCRA Closure Plan Information has been or will be submitted for each unit.

C-1f Wastes to be Land Treated

The owner/operator of a land treatment unit is required to provide a list of hazardous constituents expected to be in, or derived from, the waste to be land treated based on waste analysis performed in accordance with the Waste Analysis Plan. The same information is required if food chain crops are to be grown in or on the treatment zone. The FEMP is not seeking a permit for the land treatment of hazardous waste, therefore this section is not applicable.

C-1g Waste in Miscellaneous Treatment Units

The owner/operator of any miscellaneous treatment unit is required to provide a report on a demonstration of the effectiveness of the treatment based on laboratory or field testing. The FEMP is not seeking a permit to operate a miscellaneous treatment unit, therefore this section is not applicable.

The FEMP has identified units formerly used to treat hazardous waste. The FEMP operated the Barium Chloride Salt Treatment Facility from December 1985 until March 1986. The unit has been closed under RCRA as indicated in the Part A Permit Application.

The DOE Site Manager certified on April 17, 1990, that the unit was closed in accordance with the Barium Chloride Salt Treatment Facility Treatment Closure plan.

RCRA Closure Plan Information will be submitted for all other units. Sampling and Analysis Plans will be developed as part of the RCRA Closure Plan Information. Sampling and Analysis Plans will address the procedures used to sample and characterize residues remaining in the treatment units if applicable.

C-1h Waste in Surface Impoundments

~~The FEMP has identified surface impoundments that are classified as HWMUs. The FEMP has identified HWMUs that are classified as surface impoundments.~~ The FEMP is not seeking a permit to operate a hazardous waste surface impoundment. Sampling and Analysis Plans will be developed as part of the RCRA Closure Plan Information to address the procedures used to sample and characterize waste in each surface impoundment.

C-2 WASTE ANALYSIS PLAN

This section of the permit application is the FEMP Waste Analysis Plan as required by OAC 3745-54-13(B) and (C), 3745-59-07 and 3745-50-44; 40 CFR 264.13(b) and (c); 268.7, and 270.14(b)(3). The Waste Analysis Plan describes the procedures used at the FEMP to characterize waste in order to manage the waste appropriately. The FEMP Waste Analysis Plan has three objectives:

- To accurately characterize the hazardous physical and chemical properties of each waste stream and assign appropriate hazardous waste codes;
- To provide sufficient information to select the safest hazardous waste storage containers, appropriate hazardous waste storage areas, and establish appropriate shipping and handling techniques, and;
- To determine applicable land disposal restriction information for each hazardous waste stream.

The Waste Analysis Plan may also be used to provide information for the initial screening of hazardous wastes for treatment as treatment facilities become available.

The FEMP has developed a comprehensive sampling and analysis program to ensure that the objectives of this section are achieved. The vehicle for completing waste characterizations is the Material Evaluation Form. An example of the current Material Evaluation Form is provided in Attachment C-2. This form is included as an example of the type of form used by the facility and is subject to change.

The sampling and analysis program is initiated by the process operator or project supervisor who is responsible for the waste generation. **These FEMP personnel are trained, and are required to identify waste materials and initiate Material Evaluation Forms for each waste stream generated under their responsibility.**

~~Once initiated by the process operator/project supervisor, These FEMP personnel are trained in waste identification and are required to identify waste materials and complete Material Evaluation Forms for each waste stream generated under their responsibility.~~

~~Once completed by the process operator/project supervisor,~~ the Material Evaluation Form is reviewed by regulatory specialists and a RCRA determination is completed if the information is sufficient. If the information is not adequate, the specialist either requests more information from the process operator/project supervisor or requests sampling of the waste. Waste determinations based on process knowledge also rely on supplemental information to support the information supplied by the process operator/project supervisor. This information can include but is not limited to:

- historical knowledge and/or data on similar FEMP processes;
- ~~documented conversations with personnel familiar with the process or location;~~
- ~~technical references or other literature which describe the processes;~~ ~~conversations with personnel familiar with the process or location;~~
- ~~text books which describe the processes;~~
- material safety data sheets; and
- vendor specification information.

The parameters needed to assess the hazardous constituents of the waste are identified and a sampling plan may be prepared if the waste requires sampling and analysis. Preliminary information supplied on the Material Evaluation Form is used to develop the sampling plan.

The sampling plans may include but are not limited to the following information:

- the purpose of sampling;
- the identification of sampling procedures;
- number and location of samples;

- analytical parameters;
- sample volumes and containers;
- Quality Assurance/Quality Control requirements;
- equipment needed;
- decontamination of equipment; and
- health and safety concerns.

After the samples are analyzed and results are received by the FEMP, the results are reviewed by FEMP personnel. ~~A RCRA determination is made based on all available information, including the analytical data.~~ A RCRA determination is made based on the results. A diagram of the material evaluation process is provided in Figure C-1.

C-2a Parameters and Rationale

This section provides the parameters and rationale for waste analysis that may apply to any individual waste stream generated or received by the FEMP. Waste streams generated by the FEMP may contain several constituents of concern. Waste is analyzed for specific parameters, as necessary, ~~in order to meet the objectives of the Waste Analysis Plan.~~ ~~in order to meet the objectives of the Waste Analysis Plan.~~ A list of the parameters and rationale for analysis of any waste stream generated at the FEMP is provided in Table C-3.

Each waste stream is analyzed for those parameters most likely to yield the maximum amount of chemical and physical information. In addition, specific analyses are selected based on historical knowledge, knowledge of the waste generation process, and the constituents suspected to be in the waste. The waste parameters selected by the FEMP represent those characteristics necessary to manage the waste in compliance with applicable permit conditions.

C-2b Test Methods

When process knowledge is insufficient to identify a waste stream as hazardous, analytical methods are used to make such a determination. The test methods employed for the analytical parameters chosen to characterize and monitor the FEMP waste streams are listed in Table C-4. All methods reference SW-846, unless otherwise noted. When a waste stream has the potential to have several waste codes, ~~all applicable analytical tests are conducted on the sample.~~

~~Inductively Coupled Plasma (ICP) is the method of choice for metallic analytes. the applicable analytical tests are conducted on the sample.~~

~~Atomic absorption, direct aspiration is the method of choice for metallic analytes. However, where analytical or sample matrix interferences prevent the collection of accurate and/or precise data, the atomic absorption, furnace technique analogs or direct aspiration is employed.~~

~~An alternative gas chromatographic/mass spectroscopic method (Method 8240) is substituted for the gas chromatography methods listed in Table C-4, if the methods listed in Table C-4 do not provide definitive results for waste characterization or recertification. furnace technique analogs are employed. An alternative gas chromatographic/mass spectroscopic method (Method 8248) is substituted for the gas chromatography methods listed in Table C-4 if the methods listed in Table C-4 do not provide definitive results for waste characterization or recertification.~~

For those constituent analyses not addressed in test methods presented in SW-846, American Society of Testing Materials (ASTM) Standards have been adopted as appropriate. "Standard Methods for the Examination of Water and Wastewater," latest edition, prepared and published jointly by American Public Health Association, American Water Works Association, and the Water Pollution Control

Federation, may also be used.

For those waste streams that are generated in a solid matrix, ~~additional sample preparation is needed prior to analysis. sample preparation is needed prior to analysis.~~ The extraction methods for solid matrix wastes are also provided in Table C-4.

~~Methods used to analyze samples sent to off-site laboratories are specified in the FEMP's contract with the laboratory and are equivalent to those specified in Table C-4. Methods used to analyze wastes sent to off site laboratories are specified in the FEMP's contract with the laboratory. The methods specified in Table C-4 are also required for wastes sent to off site laboratories for analysis.~~ Laboratory reports document the specific SW-846 method or its analog used to analyze for each constituent. The laboratory of choice may vary because the FEMP must maintain the flexibility to select contract laboratories on a competitive basis. Prior to the selection of a contract laboratory, the laboratory submits Quality Assurance and Quality Control (QA/QC) information to the FEMP. The laboratory is required to meet the QA/QC goals established in SW-846 for analytical procedures. Failure to demonstrate the ability to achieve the QA/QC goals disqualifies the use of that laboratory.

C-2c Sampling Methods

The FEMP has developed site-specific sampling procedures which incorporate the sampling methods in SW-846 including Section 3.1 and 4.1, Sampling Considerations; Chapter 9, Sampling Plan; and Chapter 10, Sampling Methods and Samplers and Sampling Procedures for Hazardous Waste Streams (EPA-600/2-80-018).

Due to the fact that wastes generated at the FEMP vary in types of matrices, the sampling methods and equipment used by the facility depend on the individual waste stream matrix. ~~The types of equipment used to sample specific waste types are summarized in~~

~~Table C-5, which references SW-846 and/or ASTM methods. The types of equipment used to sample specific waste types are summarized in Table C-5 which references SW-846.~~

Number of Samples

Sampling procedures used for waste characterization at the FEMP are designed to ensure representative and random sampling. Two general procedures have been developed to ensure representative and random sampling based on the type of container used to store the waste. Both procedures are based on the use of random number tables.

When a waste is stored in drums or containers of 55 gallons or less, the number of representative samples collected is based on the number of containers holding the waste from a generating source. Homogeneity of the waste being sampled is determined by evaluation of information on the Material Evaluation Form and the material type and source code. The following is provided as a general guideline for the number of representative samples required for a given container population:

<u>Number of Containers</u>	<u>Number of Samples for Analysis</u>
1	2
2	2
3 to 15	3
16 to 40	4
41 to 50	5
over 50	10 percent

In order to determine which containers are to be randomly selected, the lot group of containers holding the same waste is sequentially numbered. After the containers are numbered, a random number table is used to select containers for sampling to minimize the possibility of introducing bias into the process.

For wastes stored in large containers (20 cubic yards and larger), a representative number of samples is based on the construction of

the container. The following equation is used to develop the number of representative samples for each large containers:

$$n = A \Pi / GL^{(0.5)}$$

~~Where n is the number of samples; The following equation is used to develop the number of representative samples for each container:~~

$$n = \frac{A \Pi}{GL^{0.5}}$$

~~Where n is the number of samples;~~
A is the area at the top of the container, and
GL is the greatest length of the container.

In order to determine the sampling location within the container, the container is schematically divided into cubes with dimensions of one foot. Each cube is sequentially numbered. After the cubes are numbered, a random number table is used to select the cube designated for sampling. During actual sampling, if interference is encountered, such as a stone or piece of wood, another location is selected using the random number table and sampled.

Samples collected from 20 cubic yard containers or larger are composited. Composite samples are also used for large populations of containers with capacities of 55 gallons or less. Samples are collected from randomly selected containers and then composited. Sample compositing does not occur when there are physical anomalies between the wastes such as changes in color or the container holds commingled waste such as demolition debris.

~~Quality control and quality assurance samples such as duplicates,~~
~~Quality control and assurance blanks such as duplicates,~~ equipment blanks, and trip blanks may be collected. Duplicate samples are collected for waste streams with more than one drum at the rate of at least 10 percent. For example, one duplicate sample is collected if three drums of waste are sampled; two duplicate samples are

collected if 11 drums of waste are sampled. ~~Equipment blanks are collected following equipment decontamination.~~ ~~Equipment blanks are collected immediately following equipment decontamination.~~ Trip blanks accompany sample shipments every third week. Trip blanks are analyzed for volatile organics (EPA Method 624) each time they are submitted.

Other samples may be collected as specified by the contract laboratory QA/QC procedures. These samples may include laboratory blanks and spiked blanks, split samples, and standards.

Sample Containers

The sample containers selected for a particular waste stream are based on the sample matrix and the types of analysis that may be required for that particular waste stream. Where various sample matrices are encountered or more than one analysis is required, the appropriate sample containers are used. The types of containers, preservatives, holding times, and minimum volumes required are presented in Table C-6.

QA/QC Procedures

In addition to the quality control samples described earlier, the FEMP uses several established procedures to preserve the integrity of the samples during collection and shipment. These procedures include:

- field logs,
- sampling equipment decontamination,
- chain-of-custody documents, and
- shipping seals.

Field Log

A field log is maintained by sampling personnel. The type of information that is recorded in the field log may include but is not limited to:

- sampling date and location;
- time of sampling;
- sampling plan number, if applicable;
- material type and source code, if available;
- sampling personnel
- lot and drum number, if available;
- sampling equipment used;
- number of phases or matrix;
- phase specific identifying number, if applicable;
- physical description;
- sampling anomalies and resolutions to sampling problems;
- customer number for laboratory use;
- requested analysis;
- quantity and type of bottles;
- type of sample (i.e. grab, composite, etc.); and
- identification of containers storing decontamination rinseate and personnel protective clothing.

The field log describes sampling conditions that may prejudice the analytical results.

Equipment Decontamination

All sampling equipment is decontaminated prior to sampling. The frequency of decontamination is based on the type of sampling. For those waste streams undergoing composite sampling, equipment is not decontaminated between individually collected samples making the composite. For waste undergoing grab sampling, equipment is decontaminated after each collected sample. In every case, equipment is decontaminated between different waste streams. Periodically, an equipment blank is collected after the equipment undergoes final decontamination for a particular waste stream to ensure that the equipment is decontaminated.

The equipment decontamination procedure is described below:

- 1) The sampling equipment is placed over a collection drum and washed using a warm detergent solution and bottle brush.
- 2) The sampler is rinsed several times with tap water to remove detergent residues.
- 3) The sampler is then rinsed with distilled water and the excess water is drained into the drum.
- 4) The sampler is then air dried or rinsed with isopropanol and allowed to dry.
- 5) The clean sampler is placed in a plastic bag or wrapped in aluminum foil.

Chain-of-Custody and Shipping Seals

Sample containers are placed in appropriate shipping containers after sample collection. The containers are cooled, as required, ~~to meet preservation requirements.~~ ~~to meet preservative requirements.~~ Sample transport documentation such as analytical requests and chain-of-custody forms are affixed to or placed in the shipping container. The FEMP maintains a strict chain-of-custody procedure for all samples collected for RCRA determination. A chain-of-custody tape or other tamper guard seals are affixed to the shipping container in order to indicate potential container tampering. The shipping container is then sent to the appropriate laboratory for analysis.

C-2d Frequency of Analysis

Waste generated at the FEMP is analyzed whenever there is reason to believe that the process generating the waste has changed. ~~Hazardous waste received at the FEMP from off-site sources is analyzed whenever the fingerprint analysis indicates that the hazardous waste received at the site does not match the hazardous waste description on the hazardous waste manifest and/or Material Evaluation Form (MEF).~~ ~~Hazardous waste received at the FEMP from off site sources is analyzed whenever the pre acceptance inspection indicates that the hazardous waste received at the site does not~~

~~match the hazardous waste description on the hazardous waste manifest.~~

The majority of waste generating activities at the FEMP has changed from continuous process sources to project and/or location-specific sources. Wastes generated by unique activities, such as closure/remedial wastes, are sampled and analyzed as they are generated. ~~Wastes that are generated on a continuous basis are usually sampled and analyzed annually unless there is reason to believe that the waste has changed. Wastes that are generated by continuous processes are usually sampled and analyzed annually unless there is reason to believe that the waste has changed.~~ If there is reason to believe the waste has changed, the waste is sampled and analyzed immediately.

For process wastes that are no longer generated, repeat analysis is not required for proper waste management. Because these wastes are stable and will not change, these wastes are not re-analyzed once they are characterized.

C-2e Additional Requirements for Waste Generated Off-Site

~~The FEMP will accept hazardous waste from off-site facilities. The FEMP may accept hazardous waste from off site facilities.~~ No hazardous waste from off-site facilities is accepted and/or stored at the FEMP unless the conditions of the Consent Decree and its proposed amendments are met.

~~Out of State generators, transporters and drivers are required to file a Consent to Service (Ohio Revised Code (ORC) 3734.131) form with the State of Ohio at least 3 days before the initial shipment of waste to the FEMP. The Consent to Service requirements are not applicable to Federal Facilities, but are applicable to Government Owned Contractor Operators. These forms are to be renewed every 4 years beginning in December 1995 (Note: Consent to Service forms~~

must be refilled by December 1995 or waste can not be transported beginning in 1996 and then every 4 years thereafter). These forms will be kept on file at the facility as part of the operating record.

Generators will provide the FEMP with waste characterization data for each waste stream shipped to the FEMP from an off-site facility as detailed in the Material Evaluation Form in Attachment C-2. Off-site generators are required to provide the same types of data and level of detail that is required to characterize waste generated at the FEMP.

~~Generators may provide the FEMP with waste characterization data for each waste stream shipped to the FEMP from an off site facility as detailed in the Material Evaluation Form in Attachment C-2. Off site generators are requested to provide the same types of data and level of detail that is required to characterize waste generated at the FEMP. Additional data required by the FEMP that is not included on the Material Evaluation Form is submitted to the FEMP as an attachment to the form. This data usually precedes actual shipment of the waste so that FEMP personnel can review the data and confirm that the waste can be stored at the FEMP. The generator is required to furnish the following information for each waste stream as:~~ The generator is requested to furnish information for each waste stream such as:

- Physical parameters such as pH, color, physical state, flashpoint, particle size, specific gravity, density, viscosity, liquid content, compatibility;
- TCLP analytical results for toxicity characteristic constituents;
- RCRA waste code(s) with analytical data if the codes have been determined on the basis of analytical information;
- Land disposal restriction information such as total organic

- carbon, total suspended solids, constituent specific organic scans as necessary; and
- Generator certifications that the information for each waste stream is complete and accurate.

In some cases, the FEMP may request a sample for preacceptance analysis prior to shipment. The analytes selected for testing are based on knowledge of the process generating the waste as supplied by the generator. ~~Upon review of the waste determination information, Upon receipt and review of the analysis,~~ the pre-acceptance/rejection determination is made.

Waste characterization data is evaluated by trained FEMP personnel. If it is determined that the waste can be stored at the FEMP, the generator is notified to schedule shipment of the waste.

When hazardous waste arrives at the FEMP, acceptance verification is initiated by facility personnel according to internal procedures. The following areas are examined prior to acceptance of the waste:

- ~~Shipping Documentation;~~
- ~~Manifest and land disposal notification/certification;~~
- ~~Documentation~~
- ~~manifest and land disposal notification/certification;~~
- Verification of manifest information; container count, weight, waste codes, etc.;
- Container condition;
- Fingerprint analysis of the waste.

Designated trained personnel examine the hazardous waste manifest and land disposal restriction notification and certifications. Absent or incomplete receiving/shipping documentation such as an incomplete hazardous waste manifest or incomplete or missing land disposal restriction information are corrected or completed prior to acceptance of the hazardous waste shipment.

After verification of container condition, proper labeling and documentation, contents of the containers are examined to verify the physical state of the waste. Ten percent of the drum population of each similar matrix waste is sampled and composited to verify the waste characterization. Wastes are sampled and analyzed according to the procedures described in Section C-2. The sample undergoes a fingerprint analysis which includes pH, physical state, flashpoint, specific gravity, and reactivity. Additional samples for verification of waste characterization may be required based on the results of the fingerprint.

Between receipt of the hazardous waste and verification, the hazardous waste is segregated from other hazardous waste stored at the FEMP or other hazardous waste undergoing acceptance verification. The FEMP does not sign the manifest and formally accept the hazardous waste until fingerprint analysis of the hazardous waste is complete and verified to be within the acceptance criteria described in Table C-7.

The generator is contacted immediately if any discrepancies or other problems are discovered in documentation, condition of containers, or identification of the hazardous waste. If discrepancies cannot be resolved, the generator is informed that the hazardous waste shipment has been rejected. When a shipment is rejected, the FEMP completes a new uniform hazardous waste manifest. The generator's name is written in the generator and destination areas. The special instructions section of the manifest identifies the hazardous waste as a rejected shipment and references the attached original manifest from the generator. The FEMP acts as the generator's agent and signs the return manifest. The FEMP will send a letter describing the discrepancy and the attempts to resolve the discrepancy to OEPA and USEPA if the discrepancy is not resolved within 15 days of discovery.

~~of discrepancy. The FEMP will send a letter describing the discrepancy and the attempts to resolve the discrepancy to OEPA and USEPA if the discrepancy is not resolved within 15 days of hazardous waste receipt.~~

If the hazardous waste meets acceptance criteria, the hazardous waste stream is assigned FEMP material and source codes, a FEMP Reactivity Group Code and a drum number. ~~Each container is then entered into the facility's hazardous waste tracking system. Each drum is then entered into the facility's hazardous waste tracking system.~~ The hazardous waste tracking system is used to identify and track the location and contents of each hazardous waste container stored at the FEMP. The system records the drum number, hazardous waste code(s), location of the drum, FEMP material and source codes, and the FEMP Reactivity Group Code. Each drum is assigned a storage location based on the physical state, compatibility and flammability of the waste. Any subsequent movement of the hazardous waste at the FEMP is recorded in the hazardous waste tracking system.

C-2f Additional Requirements for Ignitable, Reactive and Incompatible Wastes

Liquid ignitable hazardous wastes are identified through process knowledge or by use of the Pensky-Martens Closed Cup test (EPA Method Number 1010) to determine the flashpoint of the waste.

A small quantity of reactive hazardous wastes have been generated and stored at the FEMP. Reactive hazardous wastes are stored in areas that are compatible with the material stored and are separated from incompatible hazardous wastes. Each hazardous waste stream is assigned a Reactivity Group Code based on the process knowledge and analytical data provided for each hazardous waste stream on the Material Evaluation Form. Only compatible hazardous wastes are stored within each storage unit or containment system.

11-23-81

FEMP REV 0.1 0792

C-24

Waste Characteristics

507

C-3 WASTE ANALYSIS REQUIREMENTS PERTAINING TO LAND DISPOSAL RESTRICTIONS (LDR)

Section C-3 has been prepared in accordance with the requirements of OAC 3745-59 and 40 CFR Part 268.

Third-third rule mixed waste, which include the majority of mixed wastes, ~~had been granted a National Capacity Variance until May 8, has been granted a National Capacity Variance until May 8, 1992.~~ Under this variance, mixed waste, with the exception of spent solvent, dioxin-containing waste, and California list wastes, may be land disposed in units that meet minimum technical requirements without meeting the treatment standard. However, the requirements for waste analysis under OAC 3745-59-07 and 40 CFR 268.7 still apply to hazardous waste under a National Capacity Variance. These requirements include determination of treatability groups, subcategories, and treatment standards for all restricted hazardous wastes, including Third-third mixed waste. Attachment C-3 is an example of the type of form used to document the information used to complete the LDR waste characterization.

C-3a Waste Characterization

As a generator and storage facility for mixed waste, the FEMP is required to determine whether its hazardous waste is restricted from land disposal and to properly manage the hazardous waste in accordance with those restrictions.

As described in Section C-2, hazardous wastes are assessed to determine the applicability of all possible hazardous waste codes including both listed and characteristic codes. For hazardous wastes that carry more than one hazardous waste code, subcategories and treatability groups are determined for each hazardous waste code. The FEMP also determines whether the hazardous waste meets applicable treatment standards for each hazardous waste code identified.

Process knowledge may be used to determine the hazardous waste's subcategory such as D001, high Total Organic Carbon, and treatability group wastewater or non-wastewater. In addition, process knowledge may be used to determine whether hazardous wastes meet treatment standards.

When process knowledge is not adequate to determine a hazardous waste's subcategory and treatability group, the hazardous waste is analyzed according to the procedures and analytical methods discussed in Section C-2. In addition, restricted hazardous wastes may require analysis to confirm that they meet concentration based treatment standards for certification purposes.

C-3a(1) Waste Characteristics: Solvent Wastes and Dioxin-Containing Wastes

The FEMP does not accept, generate or store any dioxin-containing wastes identified as F020-F023 or F026-F028. Therefore, the land disposal restrictions for dioxin-containing waste are not applicable to hazardous wastes generated at the FEMP.

The FEMP does accept, generate, and store spent solvent wastes identified as F001-F005. Process knowledge is generally adequate to determine that solvent wastes generated and stored on-site do not meet treatment standards. ~~The FEMP requires analytical data when certifying treatment standards have been met, prior to accepting any F001-F005 spent solvent wastes from off-site sources. The FEMP requires analytical data to determine if treatment standards are met prior to accepting any F001-F005 spent solvent wastes from off site sources.~~

Hazardous wastes containing spent solvents may meet treatment standards in some instances. In these cases, the FEMP uses existing analytical data and process knowledge, or conducts

additional analyses to certify compliance with the treatment standards.

When analyses are required, spent solvent waste is analyzed to determine if the hazardous waste meets concentration based treatment standards by the TCLP, except for F005 and F002 wastes containing benzene and 1,1,2-trichloroethane. The treatment standards for these hazardous wastes are based on the total composition of the hazardous waste, therefore, analysis is performed to determine the total concentration of benzene and 1,1,2-trichloroethane in these hazardous wastes.

Upon receipt of the analytical results, the FEMP compares the results to the treatment standards in 40 CFR 268.41 and 268.43. If the results show that the treatment standards have been met, the FEMP certifies that the hazardous waste meets treatment standards.

C-3a(2) Waste Characteristics: California List Wastes

With the promulgation of the Third-third rule, most of the treatment standards or statutory prohibition levels associated with the California list were superseded by more stringent, waste-specific treatment standards. California list restrictions still apply, however, for hazardous wastes subject to a National Capacity Variance. After May 8, 1992, in certain cases, California list treatment standards or statutory prohibition levels will apply to mixed waste in addition to the Third-third treatment standards. These cases are noted below in discussion of each of the California list restrictions.

Acid Wastes

Treatment standards have been promulgated for acidic hazardous wastes under the Third-third rule, therefore the California

list restrictions for acidic hazardous wastes have been superseded, except as they apply to Third-third mixed waste under National Capacity Variance. Acidic hazardous wastes are tested in accordance with the procedures and methods discussed in Section C-2.

Halogenated Organic Compounds (HOCs)

California list restrictions apply to hazardous wastes which contain over 1,000 milligrams per liter (mg/l) of Hazardous Organic Compounds (HOCs) as defined in 40 CFR 268 Appendix III. ~~1000 milligrams per liter (mg/l) of Hazardous Organic Compounds (HOCs) as defined in 40 CFR 268 Appendix III.~~ Many of the compounds identified in the HOC list are also listed hazardous wastes and therefore the treatment standard for the listed waste may take precedence. During the National Capacity Variance for Third-third mixed waste, however, the California list restrictions may apply to the hazardous waste stream while the Third-third treatment standard is not in effect. Solid and liquid hazardous wastes suspected of containing HOCs are tested in accordance with the procedures and methods discussed in Section C-2.

Aqueous wastes with less than 10,000 mg/l of HOCs must be treated to a concentration of less than 1,000 mg/l HOCs prior to land disposal. No treatment method is specified. The following wastes must be destroyed in a RCRA-regulated incinerator or treated by an alternate approved method:

- Aqueous wastes with 10,000 mg/l or more of HOCs;
- Non-aqueous liquid wastes with 1,000 mg/l or more HOCs;
- Sludges or solids with 1,000 mg/l or more HOCs.

PCBs

~~Liquid PCB wastes (as determined by process knowledge or analytical data) may become subject to the land disposal~~

~~restrictions if they are mixed with listed hazardous waste or if they exhibit a hazardous waste characteristic (except for Toxicity Characteristic wastes D018-D043 which are excluded from regulation under 40 CFR 261. Liquid PCB wastes (as determined by process knowledge) may become subject to the land disposal restrictions if they are mixed with listed hazardous waste or if they exhibit a hazardous waste characteristic (except for Toxicity Characteristic wastes D018-D043 which are excluded from regulation under 40 CFR 261.8).~~ Hazardous wastes suspected of containing PCBs are tested in accordance with the procedures and methods discussed in Section C-2.

PCBs that are subject to the California list restrictions are treated by the following specific methods:

- Liquids with 50 parts per million (ppm) or more PCBs but less than 500 ppm must be incinerated or burned in high efficiency boilers;
- Liquids with 500 ppm or more PCBs must be incinerated.

Cyanide Wastes

Specific standards have been issued for cyanide wastes (D003, F-, P-, and U-list wastes). Therefore, the California list standards for liquid hazardous waste containing cyanide have been generally superseded, except as they apply to Third-third mixed waste under the National Capacity Variance. Hazardous wastes suspected of containing cyanide are tested in accordance with the procedures and methods discussed in Section C-2.

Heavy Metals

~~The California list restrictions applicable to liquid hazardous wastes that contain specified concentrations of the eight RCRA metals that are toxicity characteristic waste have~~

been superseded by the Third-third rule. ~~The California list restrictions applicable to liquid hazardous wastes that contain specified concentrations of the eight heavy metals that are toxicity characteristic waste have been superseded by the Third-third rule, except as they apply to Third-third mixed waste under a National Capacity Variance. California list standards for nickel and thallium are still applicable to all liquid hazardous waste. Liquid hazardous wastes suspected to contain California list heavy metals are tested in accordance with the procedures and methods discussed in Section C-2.~~

C-3a(3) Waste Characteristics: First-Third Waste With Treatment Standards

The FEMP uses process knowledge and/or supplemental analytical data to determine whether First-third hazardous wastes meet applicable treatment standards. Where analysis is required, representative samples are collected and analyzed using the procedures described in Section C-2.

In most cases, process knowledge is used to determine that hazardous wastes do not meet treatment standards and to determine treatability groups and subcategories. However, when process knowledge is not adequate or when the FEMP believes that the hazardous waste does meet treatment standards, the hazardous waste is analyzed to determine LDR treatability groups and subcategories, and to confirm whether the hazardous waste meets treatment standards.

C-3a(4) Second-Third Wastes With Treatment Standards

The FEMP uses process knowledge and/or analytical data to determine whether Second-third hazardous wastes meet applicable treatment standards. Where analysis is required,

representative samples are collected and analyzed using the procedures described in Section C-2.

In most cases, process knowledge is used to determine that hazardous wastes do not meet treatment standards and to determine treatability groups and subcategories. However, when process knowledge is not adequate or when the FEMP believes that the hazardous waste does meet treatment standards, the hazardous waste is analyzed to determine treatability groups and subcategories, and to determine if the hazardous waste meets treatment standards.

C-3a(5) Third-Third Wastes

Treatment standards for all Third-third hazardous wastes, including any First- and Second-Third hazardous wastes rescheduled to the Third-third, were promulgated on May 8, 1990. The FEMP uses process knowledge and/or analytical data to determine whether Third-third hazardous wastes meet applicable treatment standards. Where analysis is required, representative samples are collected and analyzed using the procedures described in Section C-2.

In most cases, process knowledge is used to determine that hazardous wastes do not meet treatment standards and to determine treatability groups and subcategories. However, when process knowledge is not adequate or when the FEMP believes that the hazardous waste does meet treatment standards, the hazardous waste is analyzed to determine treatability groups and subcategories, and to determine if the hazardous waste meets treatment standards.

C-3a(6) Soft Hammer Wastes

With promulgation of the Third-third rule on May 8, 1990, soft

hammer restrictions became obsolete, therefore this section is no longer applicable.

C-3b Notification and Certification Requirements

Attachment C-4 is an example of the type of form used to document the LDR information necessary to complete the notification/certification forms that must accompany each off-site hazardous waste shipment. Examples of the types of notification/certification forms that may be used by the FEMP are included in Attachment C-5. The specific notification/certification forms that may be used by the FEMP are discussed below.

Waste Meeting Applicable Treatment Standards

If the hazardous waste meets applicable treatment standards, each off-site shipment of hazardous waste is accompanied by the appropriate notification/certification shown in Attachment C-5. The notification includes the Manifest Number, Hazardous Waste No., the Subcategory if applicable, the Treatability Group, the CFR reference for the treatment standard, and the five-letter code where the treatment standard is a specified technology. In addition, for F001-F005 spent solvents and F039 multi-source leachate the concentration based treatment standards are provided for each hazardous constituent identified. The certification is signed by an authorized facility representative.

Waste Not Meeting the Applicable Treatment Standard

If the hazardous waste does not meet applicable treatment standards, a notification accompanies each off-site shipment (see sample form in Attachment C-5). The notification includes the Manifest Number, Hazardous Waste No., the Subcategory if applicable, the Treatability Group, the CFR reference for the treatment standard, and the five-letter code where the treatment standard is a specified technology. For F001-F005 spent solvents and F039 multi-source leachate the concentration based treatment standards are provided for each

hazardous constituent identified. All applicable California list restrictions under RCRA Section 3004(d) are also identified. The sample notification form for hazardous wastes not meeting the applicable treatment standards is provided in Attachment C-5.

Waste with Applicable Extensions

If a hazardous waste is subject to a case-by-case extension or a national capacity variance, the notification identified as "Restricted Wastes Exempt from Land Disposal Prohibitions" in Attachment C-5 is completed prior to shipment of the hazardous waste. The notification includes the Manifest Number, Hazardous Waste No., the Subcategory if applicable, the Treatability Group, the CFR reference for the treatment standard, and the five-letter code where the treatment standard is a specified technology. For F001-F005 spent solvents and F039 multi-source leachate the concentration based treatment standards are provided for each hazardous constituent identified. In addition, all applicable California list restrictions under RCRA Section 3004(d) are identified. The notification also identifies the specific exemption that applies to the hazardous waste.

Treatment of Characteristically Hazardous Waste

If the FEMP treats a characteristically hazardous waste such that the treatment removes the characteristic and subsequently sends the treatment residue to a Subtitle D facility, a notification and certification form is sent to the OEPA Director and EPA Regional Administrator. An example of this form is provided in Attachment C-5 and identified as "Notification and Certification for Wastes No Longer Exhibiting a Characteristic That Is Sent To Subtitle D Facilities." The notification includes the Hazardous Waste No. before treatment, the Subcategory if applicable, the Treatability Group, the CFR reference for the treatment standard, and the five-letter code where the treatment standard is a specified technology. The notification also identifies the originating facility and facility EPA hazardous waste Number and the RCRA Subtitle D facility

to which the waste was sent.

Lab Packs

The FEMP completes specific notification/certification forms when shipping organo-metallic or organic lab packs to off-site facilities. Examples of the notification/certification forms for lab packs are provided in Attachment C-5. The notification includes the Manifest Number, Hazardous Waste No., the Subcategory if applicable, the Treatability Group, the CFR reference for the treatment standard, and the five-letter code where the treatment standard is a specified technology. In addition, for F001-F005 spent solvents and F039 multi-source leachate the concentration based treatment standards are provided for each hazardous constituent identified. The certification is signed by an authorized facility representative.

C-3b(1) Retention of Generator Notices and Certifications

As discussed in Section C-2e, submission of a complete notification/certification form is required prior to acceptance of any hazardous waste from off-site sources. If visual inspection of the hazardous waste and fingerprint analyses lead the FEMP to suspect that the notification/certification form is incorrect, issues are resolved prior to acceptance of the hazardous waste as further detailed in Section C-2e.

Completed notification/certification forms from off-site generators are filed upon receipt as part of the FEMP operating record.

C-3b(2) Notification and Certification for Wastes to be Further Managed

Prior to shipment of any hazardous waste stored at the FEMP to

an off-site facility, the FEMP completes a notification/certification form in accordance with the requirements for generators in 40 CFR 286.7 as discussed in Section C-3b. The completed notification/certification form is retained for a minimum of five years (extended indefinitely in the case of unresolved enforcement actions).

C-3b(3) Notification and Certification for Soft Hammer Wastes Not Subject to California List Prohibitions

With the promulgation of the Third-third rule, soft hammer provisions became obsolete, therefore, this section is no longer applicable.

C-3b(4) Additional Notification and Certification Requirements for Treatment Facilities

The FEMP does not treat hazardous wastes, therefore, this section is not applicable.

C-3b(5) Additional Notification and Certification Requirements for Disposal Facilities

The FEMP is not a disposal facility, therefore this section is not applicable.

C-3b(6) Notification and Certification Requirement Pertaining to Landfill and Surface Impoundment Disposal Restrictions

As stated in 40 CFR 268.8(a) this requirement has not been effective since May 8, 1990, therefore, this section is not applicable.

C-3c Additional Requirements Pertaining to Storage of Restricted Wastes

The FEMP stores hazardous and mixed waste. Under the land disposal restrictions, storage of hazardous waste is allowed "solely for the purpose of accumulation of such quantities of hazardous waste as necessary to facilitate proper recovery, treatment, or disposal (40 CFR 268.50)." As discussed previously, however, currently there are very few permitted facilities for the treatment or disposal of mixed wastes.

~~Mixed wastes were granted a National Capacity Variance to the effective date of the land disposal restrictions which expired May 8, 1992. This means that the storage prohibition became effective on that date. Mixed wastes have been granted a National Capacity Variance to the effective date of the land disposal restrictions until May 8, 1992 which means that the storage prohibition is not effective until that date.~~ The EPA provided the following guidance in the preamble to the Third-third rule (55 FR 22673):

"No firm time limit is established pursuant to Section 268.50. Generators and owners and operators can store as long as necessary. The legislative history makes it clear that the intent of . . . Section 268.50 is to prohibit the use of long-term storage to circumvent the treatment requirements imposed by the Land Disposal Restrictions. However, if prohibited wastes are stored beyond one year, the owner/operator has the burden of proving (in the event of an enforcement action) that such storage is for the allowable reason; prior to one year, EPA maintains the burden of proving that storage has occurred for the wrong reason."

In addition the EPA issued a policy statement on the civil enforcement of the storage prohibition at facilities which generate

mixed waste on August 29, 1991 (56 FR 42730). The policy, which expires on December 31, 1993, states that enforcement of the storage prohibition on generators of small quantities of mixed waste (1,000 cubic feet or less) who are operating in an environmentally responsible manner will be a low priority. The current waste generation rate at the FEMP is being assessed to determine whether the FEMP meets these standards.

The DOE is exploring options and methods for treatment/disposal of mixed waste. Until additional facilities are permitted to receive mixed waste, however, there are very limited options for removal of the waste to off-site facilities.

C-3c(1) Restricted Wastes Stored in Containers

The FEMP has developed and implemented a procedure to label hazardous waste containers. At a minimum, the container labels identify the contents of the container and the dates on which accumulation or storage of the hazardous waste began. Container management activities are described in greater detail in Section D, Process Information.

C-3c(2) Restricted Wastes in Tanks

The FEMP is not seeking a permit to store hazardous waste in tanks. In addition, the FEMP does not store restricted hazardous wastes in tanks excluded from permitting requirements under 40 CFR 270.1(c)(2).

C-3c(3) Storage of Liquid PCB Wastes

Liquid PCB wastes on site are stored in indoor hazardous waste storage areas. These storage areas are designed and constructed to meet the facility standards established in 40 CFR 761.65(b). As discussed in Section C-3c, the FEMP may be

required to store the mixed TSCA/RCRA/radioactive waste on site for greater than one year because of the lack of treatment or disposal facilities for mixed waste.

C-3d Additional Requirements for Treatment Facilities

Because the FEMP does not treat hazardous wastes, this section is not applicable to the FEMP.

C-3e Additional Requirements for Land Disposal Facilities

Because the FEMP does not dispose of hazardous waste on site, this section does not apply to the FEMP.

C-3f Exemptions From and Extensions To Land Disposal Restrictions

The FEMP has not applied for a case-by-case extension to an effective date, exemption from a prohibition, or variance from the land disposal restrictions.

C-3f(1) Case-by-Case Extension to an Effective Date

The FEMP has not applied for an extension to the effective date of any restriction listed in 40 CFR Part 268 Subpart C.

C-3f(2) Exemption from a Prohibition

The FEMP has not applied for an exemption from a prohibition for the disposal of a restricted hazardous waste.

C-3f(3) Variance from a Treatment Standard

The FEMP has not applied for a variance from any treatment standard.

C-3f(4) Additional Requirements for Surface Impoundments
Exempted from Land Disposal Restrictions

The FEMP is not seeking a permit for the treatment of hazardous waste in a surface impoundment.

C-3g Requirements for Land Disposal Facilities with an Approved
Exemption or Extension

The FEMP has not been granted an exemption, extension or variance from the land disposal restrictions. If a case-by-case extension or exemption from the storage prohibitions of 40 CFR 268.50 is ever granted to the FEMP, the FEMP will provide a copy of the Notice of Approval to the OEPA Director and EPA Regional Administrator.